

## **2008-09 *Bulletin***

**Please note that in an effort to be both environmentally and budget friendly, and as an administrative efficiency, this print version of the 2008-09 *Bulletin*, provided as a courtesy for UMSL campus faculty and professional advisors, has been condensed to contain only materials that we believe you will need to reference most frequently.**

**Please refer to the official version of the 2008-09 *Bulletin*, available on the Web at <http://www.umsl.edu/bulletin>, or on CD-ROM for the complete contents.**

**We appreciate your understanding.**



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## Instructional Areas

Many departments offer courses in several subject areas. This list is provided for easy student reference.

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 and 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  
Ensemble Performance  
Environmental Biology  
Ethics  
Evolutionary 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 Resource Management  
Industrial/Organizational Psychology  
Information Systems  
Institutional Research  
Interdisciplinary Studies  
International Business  
International Relations  
International Studies  
Interpersonal Communication  
Japanese  
Jazz Studies  
Labor Studies  
Latin  
Latin American Studies  
Legal Studies  
Literature  
Logistics and Operations  
Management  
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  
Organizational Communication  
Painting  
Philosophy

Photography  
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 Law  
Public Relations  
Radio and Television  
Religious Studies  
Reserve Officer Training Corps  
School Psychology  
Secondary Education  
Social Work  
Sociology  
Spanish  
Special Education  
Statistics  
Studio Art  
Systematic Biology  
Teacher Education  
Technical Writing  
Theatre  
Trauma Studies  
Tropical Biology and Conservation  
Tropical Ecology  
Urban Politics  
Urban Studies  
Vision Science  
Women's and Gender Studies  
Writing

## 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 University of Missouri-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 UMSL. 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 University of Missouri-St. Louis is applicable. For purposes of implementing the general education plan at UMSL, 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 University of Missouri-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 UMSL 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 UMSL. 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 UMSL.

## 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 1100	Freshman Composition for Honors Students

Select a minimum of one course:

Art History 1175 Arts and Ideas ( HIST 1175, M H L T 1175, PHIL 1175, TH DAN 1175, ART HS, 1175)

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 1175	Arts and Ideas (HIST1175, MUSIC 1175, PHIL 1175, TH DAN 1175, ART HS 1175)
English 1200	Myth
English 1700	African-American Literature
English 2030	Poetry Writing
English 2040	Short Story Writing
English 2120	Topics in Writing
English 2240	Literature of the New Testament
English 2250	Literature of the Old Testament
English 2310	English Literature I
English 2320	English Literature II
English 2330	Introduction to Poetry
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 1061	African Civilization To 1800**
History 1062	African Civilization Since 1800**
History 1064	African Diaspora Since 1800**
History 1175	Arts and Ideas (ENGL 1175, MUSIC 1175, PHIL 1175, TH DAN 1175, ART HS 1175)
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 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
Media Studies 1050	Introduction to Media Studies
Media Studies 1135	Media Theory
Media Studies 2218	Public Policy in Telecommunication
Music History & Literature 1175	Arts and Ideas (HIST, ENGL 1175, PHIL 1175, TH DAN 1175, ART HS 1175)
Philosophy 1175	Arts and ideas (HIST1175, MUSIC 1175, ENGL 1175, TH DAN 1175, ART HS 1175)
Spanish 2171	Spanish Conversation and Pronunciation
Spanish 2172	Spanish Composition
Spanish 2180	Readings in Spanish**
Theatre & Dance 1175	Arts and Ideas (HIST1175, MUSIC 1175, PHIL 1175, ENGL 1175, ART HS 1175)
Theatre & Dance 1210	Fundamentals of Acting
Theatre & Dance 1800	Introduction to Theatre
Theatre & Dance 1850	Introduction to Non-Western Theatre**
Theatre & Dance 2211	Acting 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 CMP SC 1010 and BUS AD 1800)*
Business Administration 1800	Computers and Information Systems (credit not granted for both BUS AD 1800 and CMP SC 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 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 1001A	Cosmic Evolution/Introductory Astronomy (without lab)
Astronomy 1001	Cosmic Evolution/Introductory Astronomy (with lab)
Atmospheric Science 1001A	Elementary Meteorology (without lab)
Atmospheric Science 1001	Elementary Meteorology (with lab)
Biology 1202	Environmental Biology
Biology 1350	Conservation of Biodiversity
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 1111	Introductory Chemistry I
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 (CRIMIN 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
Theatre & Dance 2820	The History of World Theatre & Drama from 18 <sup>th</sup> 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

**Department, Course #    Course Title**

Anthropology 1011	Introduction to Cultural Anthropology**
Anthropology 1025	World Cultures**
Anthropology 2117	Greek History & Culture**
Anthropology 2120	Native People of North America
Art History 1102	Art of Egypt and the Ancient Near and Middle East**
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 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
Biology 1350	Conservation of Biodiversity
Criminology & Criminal Justice 1110	Theories of Crime
Criminology & Criminal Justice 1120	Criminal Law
Criminology & Criminal Justice 1130	Criminal Justice Policy
Criminology & Criminal Justice 1200	Foundations of Law (POL SCI 1200)
Criminology & Criminal Justice 2230	Crime Prevention
Criminology & Criminal Justice 2251	Youth Gangs
Criminology & Criminal Justice 2260	Corrections

Criminology & Criminal Justice 2265	Capital Punishment
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 2280	The Contemporary World in Literature**
English 2340	Introduction to Drama
Geography 2001	Cultural Geography
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 2310	Cultural Diversity in the Humanities**
Honors 2330	Cultural Diversity in the Social Sciences**
Media Studies 1060	Introduction to World Cinema
Media Studies 1110	Introduction to Radio and Television Broadcasting
Media Studies 1135	Media Theory
Music History & Literature 1001	Introduction to Music
Music History & Literature 1010	History of Western Music I
Music History & Literature 1020	History of Western Music II
Music History & Literature 1080	Introduction to Irish Traditional Music
Music History & Literature 1090	Non-Western Music I**
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 (CRIMIN 2252)
Philosophy 2253	Philosophy and Feminism
Philosophy 2254	Business Ethics
Philosophy 2256	Bioethics
Philosophy 2258	Medicine, Values and Society
Philosophy 2259	Engineering Ethics
Philosophy 2280	Minds, Brains and Machines
Political Science 1100	Introduction to American Politics***
Political Science 1200	Foundations of Law (CRIMIN 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 (BIOL 1081)
Sociology 1010	Introduction to Sociology
Sociology 1040	Social Problems

**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 1005	Introduction to Biological Anthropology
Anthropology 1006	Introduction to Non-Human Primates
Anthropology 1011	Introduction to Cultural Anthropology**
Anthropology 1019	Introduction to Archaeology **
Anthropology 1033	World Archaeology**
Anthropology 1035	Ancient Greek Civilization and Culture
Anthropology 2105	Human Variation**
Anthropology 2117	Greek History and Culture (same as HIST2117)
Anthropology 2120	Native People of North America
Anthropology 2121	Symbols in American Indian Culture
Biology 1081	Global Ecology
Communication 1050	Introduction to Mass Media
Criminology & Criminal Justice 1100	Introduction to Criminology and Criminal Justice
Criminology & Criminal Justice 1110	Theories of Crime
Criminology & Criminal Justice 1120	Criminal Law
Criminology & Criminal Justice 1130	Criminal Justice Policy
Criminology & Criminal Justice 1200	Foundations of Law (POL SCI 1200)
Criminology & Criminal Justice 2230	Crime Prevention
Criminology & Criminal Justice 2251	Youth Gangs
Criminology & Criminal Justice 2260	Corrections
Criminology & Criminal Justice 2265	Capital Punishment
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 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 2001	Cultural Geography
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 1061	African Civilization To 1800**
History 1062	African Civilization Since 1800**
History 1064	African Diaspora Since 1800**
History 1175	Arts and Ideas (ENGL 1175, MUSIC 1175, PHIL 1175, TH DAN 1175, ART HS 1175)

Honors 1130	Western Traditions--Social Science
Honors 1230	American Traditions***
Honors 1330	Non-Western Traditions--Social Science**
Honors 2030	Honors Inquiries in Social and Behavioral Sciences
Honors 2330	Cultural Diversity in the Social Sciences**
Media Studies 1050	Introduction to Media Studies
Political Science 1100	Introduction to American Politics***
Political Science 1200	Foundations of Law (CRIMIN 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 (BIOL 1081)
Psychology 1003	General Psychology
Psychology 1268	Human Growth and Behavior
Sociology 1010	Introduction to Sociology
Sociology 1040	Social Problems

### **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

#### **Department, Course #**

#### **Course Title**

Art History 1100	Introduction to Western Art
Art History 1102	Art of Egypt and the Ancient Near and Middle East**
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 (HIST1175, MUSIC 1175, PHIL 1175, TH DAN 1175, ENGL 1175)
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 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 (HIST1175, MUSIC 1175, PHIL 1175, TH DAN1175, ART HS 1175)
English 1200	Myth
English 1700	African-American Literature

English 2030	Poetry Writing
English 2040	Short Story Writing
English 2120	Topics in Writing
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 2710	American Literature I
English 2720	American Literature II
French 2102	Intermediate French Language and Culture II
French 2180	Readings in French
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 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**
Media Studies 1060	Introduction to World Cinema
Media Studies 1110	Introduction to Radio and Television Broadcasting
Media Studies 1135	Media Theory
Media Studies 2271	History of American Film
Media Studies 2272	Contemporary Cinema
Music History & Literature 1001	Introduction to Music
Music History & Literature 1010	History of Western Music I
Music History & Literature 1020	History of Western Music II
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 1110	Introduction to Irish Traditional Music in North America
Music History & Literature 1175	Arts & Ideas (HIST1175, ART HS 1175, PHIL 1175, TH DAN 1175, ENGL 1175)
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 1175	Arts & Ideas (HIST1175, MUSIC 1175, ENGL 1175, TH DAN 1175, ART HS 1175)
Philosophy 1185	Philosophy of Religion
Philosophy 2252	Philosophical Foundations in Criminal Justice (CRIMIN 2252)

Philosophy 2253	Philosophy and Feminism
Philosophy 2254	Business Ethics
Philosophy 2256	Bioethics
Philosophy 2258	Medicine, Values and Society
Philosophy 2259	Engineering Ethics
Philosophy 2280	Minds, Brains and Machines
Spanish 2171	Spanish Conversation and Pronunciation
Spanish 2172	Spanish Composition
Spanish 2180	Readings in Spanish
Theatre & Dance 1210	Fundamentals of Acting
Theatre & Dance 1175	Arts and Ideas (HIST1175, MUSIC 1175, PHIL 1175, ENGL 1175, ART HS 1175)
Theatre & Dance 1800	Introduction to Theatre
Theatre & Dance 1850	Introduction to Non-Western Theatre
Theatre & Dance 2211	Acting Styles
Theatre & Dance 2810	History of World Theatre and Drama Through the Restoration
Theatre & Dance 2820	The History of World Theatre & Drama from 18 <sup>th</sup> 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 their 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 UMSL), 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 1001A (3 hrs)	Cosmic Evolution/Introductory Astronomy (without lab)
Astronomy 1001 (4 hrs)	Cosmic Evolution/ Introductory Astronomy (with lab)
Astronomy 1011	Planets and Life in the Universe
Astronomy 1012	The Violent Universe and the New Astronomy
Astronomy 1050	Introduction to Astronomy I
Astronomy 1051	Introduction to Astronomy II
Atmospheric Science 1001A(3hrs)	Elementary Meteorology (without lab)
Atmospheric Science 1001 (4 hrs)	Elementary Meteorology (with lab)
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 1350	Conservation of Biodiversity
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 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
Geology 1001A (3 hrs)	General Geology(without lab)
Geology 1001 (4 hrs)	General Geology(with lab)
Geology 1002A (3 hrs)	Historical Geology(without lab)
Geology 1002 (4 hrs)	Historical Geology(with lab)
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 UMSL Louis Math Placement Test and the MMPT (as well as the UMSL Trigonometry Test, which is not needed for minimum math proficiency) are available on the UMSL 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* and on the math placement website.

#### 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 UMSL 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:

**CRIMIN 1100**, Introduction to Criminology and Criminal Justice (Criminology majors may not use this course to satisfy the state requirement.)  
**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 3041**, Topics in American Constitutional History  
**POL SCI 1100**, Introduction to American Politics  
**POL SCI 2260**, Law and the Individual  
**POL SCI 2280**, Judicial Politics, Process and Policy  
**POL SCI 2290**, Women and the Law  
**POL SCI 2300**, State Politics  
**POL SCI 2320**, African-Americans and the Political System  
**POL SCI 2350**, Introduction to Urban Politics  
**POL SCI 2380**, Women in U. S. Politics  
**POL SCI 2400**, Public Administration  
**POL SCI 2420**, Introduction to Public Policy  
**POL SCI 3200**, Constitutional Law  
**POL SCI 3210**, Civil Liberties  
**POL SCI 3260**, The Supreme Court  
**POL SCI 3300**, The American Presidency  
**POL SCI 3330**, Introduction to Political Behavior  
**POL SCI 3331**, Congressional Politics  
**POL SCI 3350**, Political Parties and Elections  
**POL SCI 3370**, Mock Constitutional Convention  
**POL SCI 3400**, Bureaucratic Politics  
**POL SCI 3450**, Urban Administration  
**POL SCI 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:

**ANTHRO 1011**, Introduction to Cultural Anthropology  
**ANTHRO 1019**, Introduction to Archaeology  
**ANTHRO 1021**, The Body in Culture  
**ANTHRO 1025**, World Cultures  
**ANTHRO 1033**, World Archaeology  
**ANTHRO 1041**, Sex and Gender Across Cultures  
**ANTHRO 1051**, Anthropology of Sport  
**ANTHRO 1091**, Introductory Topics in Anthropology  
**ANTHRO 2111**, Cultures of East Asia  
**ANTHRO 2114**, Cultures of the Near and Middle East  
**ANTHRO 2120**, Native Peoples of North America  
**ANTHRO 2123**, Cultures of Oceania

**ANTHRO 2124**, Cultures of Africa  
**ANTHRO 2131**, Archaeology of Missouri  
**ANTHRO 2132**, Archaeology of North America  
**ANTHRO 2134**, Archaeology of the Inca, Aztec, and Maya  
**ANTHRO 2135**, Old World Archeology  
**ANTHRO 2138**, African-American Archaeology  
**ANTHRO 2173**, Archaeology and Cultures of the Biblical World  
**ANTHRO 2191**, Special Topics in Non-Western Cultures  
**ANTHRO 3235**, Women in Sub-Saharan Africa: A Contemporary Perspective  
**ANTHRO 3238**, Culture and Business in East Asia  
**ART HS 1102**, Art of Egypt and the Ancient Near and Middle East  
**ART HS 1104**, Indigenous Arts of North America  
**ART HS 1105**, Introduction to the Arts of Africa  
**ART HS 1108**, Introduction to Asian Art  
**ART HS 1110**, The Arts of Japan  
**ART HS 4405**, Topics in African Art  
**ART HS 4408**, Topics in Asian Art  
**ENGL 2280**, The Contemporary World in Literature  
**CHINESE 2150**, Chinese Literature in Translation  
**JAPANESE 2150**, Classic Japanese Literature in Translation  
**HIST 1041**, East Asian Civilization  
**HIST 1042**, East Asian Civilization  
**HIST 1051**, Latin American Civilization  
**HIST 1061**, African Civilization To 1800  
**HIST 1062**, African Civilization Since 1800  
**HIST 1064**, The African Diaspora since 1800  
**HIST 3032**, History of Women in Comparative Cultures  
**HIST 3101**, Modern Japan: 1850 to the present  
**HIST 3102**, Modern China: 1800 to the Present  
**HIST 3103**, Modern History of the Pacific Rim  
**HIST 3201**, History of Latin America: To 1808  
**HIST 3202**, History of Latin America since 1808  
**HIST 3301**, West Africa to 1800  
**HIST 3302**, West Africa Since 1800  
**HIST 3303**, African Diaspora to 1800  
**HIST 3304**, African Diaspora Since 1800  
**HONORS 1330**, Honors Non-Western Traditions  
**HONORS 2310**, Cultural Diversity in the Humanities  
**HONORS 2330**, Cultural Diversity in the Social Sciences  
**M H L T 1090**, Non-Western Music I  
**M H L T 1100**, Non-Western Music II  
**PHIL 1120**, Asian Philosophy  
**PHIL 1125**, Islamic Philosophy  
**POL SCI 1500**, Introduction to Comparative Politics  
**POL SCI 1550**, Women and Politics in the Developing World  
**POL SCI 2520**, Middle Eastern Politics  
**POL SCI 2530**, Political Systems of South America  
**POL SCI 2540**, Political Systems of Mexico, Central America, and the Caribbean  
**POL SCI 2550**, East Asian Politics  
**POL SCI 2580**, African Politics  
**SOC WK 2330**, Asians in Migration  
**SOC 3245**, Sociology of South Africa  
**TH DAN 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.

## **Degree Programs**

### **Bachelor of Arts (B.A.)**

anthropology  
art history  
biology  
chemistry  
communication  
economics  
English  
French  
German  
history  
mathematics  
music  
philosophy  
physics  
political science  
psychology  
sociology  
Spanish

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

### **Bachelor of General Studies (B.G.S.)**

### **Bachelor of Health Studies (B.H.S.)**

### **Bachelor of Music (B.M.)**

music  
music education

### **Bachelor of Science (B.S.)**

accounting  
applied mathematics  
biology  
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.)**

### **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 Health Science (MHS)**

managerial decision-making and health informatics

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

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

### **Master of Education (M.Ed.)**

counseling  
educational administration  
elementary education  
secondary education  
special education

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

### **Master of Science (M.S.)**

biology  
chemistry  
computer science  
gerontology  
management information systems  
physics  
physiological optics

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

### **Master Social Work (M.S.W.)**

**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 14 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 Studies.

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.

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**

All majors in the College of Arts and Sciences, including Bachelor of Liberal Studies, must meet the following requirements:

- 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.
- Requirements for the University's general education & university requirements.

**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 University of Missouri-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 UMSL 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 in French, German or Spanish may obtain exemption by passing the department's placement exam. The specific dates for the exam are posted on-line at [www.umsl.edu/divisions/artscience/forlanglit/placement.html](http://www.umsl.edu/divisions/artscience/forlanglit/placement.html), or may be obtained from the Department of Foreign Languages and Literatures at (314)516-6240.
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. Aptitude testing is required prior to enrollment. For more information, call the Foreign Languages and Literatures Department at (314) 516-6240.
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 in the College of Arts and Sciences may count no more than eight hours in music ensemble performance (MUSIC 1400, 1410, 1500, 1520, etc). Students in the college may count any number studio art hours toward a degree in the college. This 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 optical biophysics), 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 UMSL. Some are offered by individual departments, while others, such as Classical Studies are interdisciplinary in nature and involve 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 Africana studies, archaeology, biochemistry, biotechnology, East Asian studies, European studies, forensic economics, Greek studies, international business, labor studies, Latin American studies, gerontology, studies in religions, trauma studies, tropical and conservation biology, nonprofit organization management and leadership, psychology-clinical specialization, 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 African, 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 UMSL 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**, Professor, Chairperson  
Ph.D., University of California-Santa Barbara

**Michael Cosmopoulos**, Hellenic Government-Karakas  
Family Foundation Endowed Professor of Greek Studies and  
Professor of Archaeology  
Ph.D., Washington University

**Jay Rounds**, Des Lee Professor of Museum Studies  
Ph.D., University of California-Los Angeles

**Sheilah Clarke-Ekong**, Associate Professor,  
Ph.D., University of California-Los Angeles

**Margo-Lea Hurwicz**, Associate Professor  
Ph.D., University of California-Los Angeles

**Pamela Ashmore**, Associate 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**, Associate Teaching Professor  
Ph.D. Washington University

**Catherine Koziol**, Adjunct Assistant Professor  
M.A., Washington University

**John Wolford**, Adjunct Assistant Professor  
Ph.D., Indiana University

**Lucretia Kelly**, Adjunct Assistant Professor  
Ph.D., Washington University

**Vicki Rapti**, Assistant Teaching Professor  
Ph.D., Washington University

**Paul Schoomer**, Senior Lecturer  
B.A., Washington University

**Jen Glaubius**, Lecturer  
M.A., University of Cincinnati

### General Information

The aim of anthropology is to understand the 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

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 10<sup>th</sup>-15<sup>th</sup> 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 and can study Forensic Anthropology and work with the department's own collection of 19<sup>th</sup> 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.

### Minor in Anthropology

The department offers a minor in cultural anthropology. The minor is 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 University of Missouri-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:

ANTHRO 1005, Introduction to Biological Anthropology  
ANTHRO 1011, Introduction to Cultural Anthropology  
ANTHRO 1019, Introduction to Archaeology

ANTHRO 3202, History, Theory and Practice of Anthropology

SOC 3220, Sociological Statistics, or any other college level statistics course

ANTHRO 4301, Ideas and Explanations in Anthropology

ANTHRO 4308, Practicum in Cultural Research Methods or

ANTHRO 4310, Laboratory Methods in Archaeology or

ANTHRO 4311, Primate Research Methods

ANTHRO 4315, Senior Seminar

ANTHRO 4316, Senior Seminar Tutorial

Two courses from two *different* subfields in Anthropology (Cultural Anthropology, Archaeology, Biological 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.

At the end of the program, students should have these competencies:

#### 1. Discipline-Specific (Content) Knowledge

Graduates will understand cultural diversity; thus preparing them to function in multicultural or international settings. Graduates will understand the common evolutionary origins that unify all cultural differences, as well as human biological variation within our shared humanity. Graduates will develop in-depth knowledge of the culture of a particular region of the world.

#### 2. Communication Skills

Students will develop social science writing skills, including writing of a research proposal for a grant agency and a substantial research report. Students will develop oral presentation skills, including presenting a formal research report.

#### 3. Information Management/Quantitative Skills

Students will master research methods in one of the subfields of anthropology (cultural anthropology, biological anthropology, archaeology). Students will learn to design and conduct an original research project, working in close cooperation with faculty.

#### 4. Valuing/Ethics/Integrity

Students will understand the professional ethics and codes of conduct of the discipline.

#### 5. Critical Thinking Skills

Students will develop the ability to apply anthropological concepts in performing critical analysis of broad historical trends and complex social issues. Students will understand cultural

diversity, thus preparing them to function in multicultural or international settings.

#### 6. Application/Internship Skills

Students will gain hands-on experience in the application of anthropological concepts to real life and will be able to apply anthropological theory to real-life experience.

#### 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.

#### Anthropology Minor

The minor is designed to offer students a flexible introduction to the fundamentals of the discipline to complement their major field of study. There are 3 possible emphases: Cultural Anthropology, Archaeology, and Biological/Forensic Anthropology. One course should be selected from each of the following 5 groups:

1. **ANTHRO 1011**, Introduction to Cultural Anthropology or **ANTHRO 1019**, Introduction to Archaeology or **ANTHRO 1005**, Biological Anthropology or **ANTHRO 1006**, Introduction to Non Human Primates
2. One 2000-level Anthropology course
3. One 3000-level Anthropology course
4. One 4000-level Anthropology course
5. One elective anthropology course at any level.

A minimum of 15 anthropology credit hours is required. Grades of C- or better must be attained in all courses used to satisfy these requirements. One Elective course taken on an A/U basis may be applied to the minor.

Students in the Bachelor of Liberal Studies must take Anthropology 4301 as their capstone course.

#### Archaeology Certificate

**ANTHRO 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.  
**ANTHRO 4310**, Laboratory Methods in Archaeology  
**ANTHRO 4309**, Archaeological Field School  
**ANTHRO 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 UMSL 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 University of Missouri-St. Louis 2001-2002 Bulletin. The following courses fulfill the Social Sciences breadth of study requirements as described in that Bulletin: 1005, 1011, 1019, 1021, 1025, 1033, 1035, 1041, 1091, 1095, 2109, 2111, 2114, 2117, 2120, 2123, 2124, 2125, 2126, 2131, 2132, 2134, 2135, 2138, 2173, 2191, 3202, 3225, 3230, 3235, 3244, 3286, 3290, 3291, 4301, 4308, 4309, 4310, 4311, 4315, 4325, 4326, 4328, 4329, 4350, 4391.

The following courses satisfy the Cultural Diversity requirement: 1011, 1019, 1021, 1025, 1033, 1041, 1051, 1091, 2111, 2114, 2120, 2123, 2124, 2131, 2132, 2134, 2135, 2138, 2173, 2191, 3235.

#### 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.

### 1035 Ancient Greek Civilization and Culture (3)

A survey of the history, language, literature, art, science, and philosophy of the ancient Greeks from prehistory to the Roman conquest. It covers the glamorous Minoan-

Mycenaean civilization, the rise of classical Greek civilization and the golden age, the history of the city states such as Athens and Sparta, and the Hellenistic period under Alexander the Great and his descents. Examines the nature of the ancient Greek language, surveys literary classics such as the Iliad and the Odyssey, and describes the archaeology of Greek myths based on the ongoing UMSL archaeological project in Greece. Discusses the rise of humanism, the ancient Olympic Games, and the legacy of ancient Greece in Western civilization.

### 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.

### **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.

### **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 Native Peoples of North America including the prehistory, ethnographic and linguistic groupings, social organization, and cultural systems of these cultures.

### **2121 Symbols in American Indian Culture (3)**

This class will look at the role of symbols in American Indian cultures in the United States and Canada, in both prehistoric and historic times. It will look at how they have used symbols to communicate, record their history, express themselves artistically, and define a tribal identity. Satisfies Cultural Diversity requirement.

### **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, mound builders, 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 mound building, 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.

### **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 20<sup>th</sup> 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.

### **2192 Anthropological Perspectives on Western Culture (3)**

This course focuses on a specific Western culture or geographically—related group of cultures utilizing ethnographic and/or archaeological sources. Ecological, economic, social, political, ethnic, religious, linguistic and cultural domains, will be examined. Students are exposed to basic anthropological concepts for understanding diverse cultures in their historical and/or contemporary contexts. Topics will vary.

### **2232 Analysis of Archaeological Artifacts (3)**

Prerequisites: ANTHRO 1109 or ANTHRO 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 History, Theory and Practice of Anthropology (3)**

Prerequisite: ANTHRO 1005, 1006, 1011, or 1019. An overview of the history and theory of anthropology from the Victorian era to today with an emphasis on putting theory into practice. The purpose of the course is to help students understand where anthropology has come from and where it may be going, and to teach students how to apply theory to specific questions and problems.

### **3209 Forensic Anthropology (4)**

Prerequisites: ANTHRO 1005, or BIOL 1102, or jun.or standing, or consent of instructor. Same as CRIMIN 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: ANTHRO 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: ANTHRO 1011, or introductory course in another social science, or consent of instructor. 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 GERON 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.

**3216 Cognition Across Cultures (3)**

Prerequisite: ANTHRO 1011, or introductory course in another social science, or consent of instructor. This course explores cognition – perception, knowledge and thought – as a set of social and cultural processes. An introduction to methods for understanding the human mind in context. It will cover key debates, including: cross-cultural variation in thought processes (cognitive relativity vs. psychic unity), the relation between physiology and consciousness, ethno-science, the social and cultural construction of reality, the different ways that social contexts affect the way people think, the implications of the way knowledge is distributed across society, the social and cultural basis of logic.

**3225 Ritual, Death, and Sports: The Archaeology of Greek Mythology (3)**

Prerequisites: ANTHRO 1019 or ANTHRO 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.

**3226 Origins of Farming and Herding (3.0)**

Prerequisites: ANTHRO 1019 or consent of instructor. This course surveys the archaeological evidence for the domestication of plants and animals from around the world and the accompanying revolution in social organization, which continues to influence the modern world. It discusses key issues, concepts, and debates. It examines case studies of early domesticated plants and animals (e.g. wheat, maize, cattle, dogs, and many others) and regional studies of the development of farming and herding in ancient Egypt, Mesopotamia, China, the Americas, and Europe.

**3227 Monsters & Victims: Women Dramatis Personae in Greek Tragedy and Contemporary Drama (3.0)**

Prerequisites: ANTHRO 1011, or introductory course in another social science, or consent of instructor. This course explores female dramatic figures in ancient Greek tragedies that represent women either as victims and/or monsters. From Iphigenia, Alcestis, and Hecuba to Clytemnestra, Phaedra and Medea, it analyzes issues such as the role of sex, gender, female sexuality, ritual and domestic violence in the image-making of women as either scapegoats or monsters by the major Greek tragedians, particularly Euripides. It explores contemporary adaptations by several women playwrights in light of theoretical readings by feminist critics.

**3229 Economic Archaeology and Anthropology (3)**

Prerequisites: ANTHRO 1011 or ANTHRO 1019 or consent of instructor. This course examines economic organization and behavior in a cross-cultural context. It looks at the various ways anthropologists have approached the study of economy, and explores how cultural factors such as relations of power, gender, kinship, and ideology affect economic organization in ancient and modern societies. Most of the course will focus on pre-industrial societies (including hunter-gather, tribal, and complex societies), and will address issues of subsistence strategies, craft production and specialization, trade and exchange, money, and markets. It will also briefly explore how modern communities around the globe are responding to contemporary processes like capitalism and globalization.

**3230 Method and Theory in Prehistoric Archaeology (3)**

Prerequisites: ANTHRO 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.

**3235 Women in Sub-Saharan Africa: A Contemporary Perspective (3) [CD]**

Prerequisite: ANTHRO 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.

**3236 Sex Trafficking in Cross-Cultural Perspective (3)**

Prerequisites: ANTHRO 1041, WGST 2150 or 2102 or consent of instructor. This course introduces the history of and current issues in the international sex industry, including human trafficking, slavery, and prostitution in Europe, Asia, Africa, South America, and North America. It will evaluate the power structures (political, economic, and military institutions) and the process, organization and structure of the industry within the context of nationality, ethnicity, and class, with particular emphasis on voluntary (immigration) and forced (displacement) population migration. Finally, it will look at current legislation and methods to control this growing problem, especially in the United States.

### **3244 Religion, Magic, and Science (3)**

Prerequisite: ANTHRO 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: ANTHRO 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: ANTHRO 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.

### **3290 Advanced Topics in Archaeology (3)**

Prerequisites: ANTHRO 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: ANTHRO 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: ANTHRO 1011, or introductory course in another social science, or consent of instructor. Selected topics in social, cultural, and biological 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: ANTHRO 3202. The theory course in the capstone sequence for Anthropology majors. Students learn to identify and synthesize relevant theories; write them up in the form of a comprehensive literature review; and apply them constructively to the collection, analysis, and explanation of data. Majors should take this course concurrently with Anthropology 4308, 4310 or 4311.

### **4308 Practicum in Cultural Research Methods (4)**

Prerequisites: One course in statistics and ANTHRO 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: ANTHRO 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.

### **4311 Primate Research Methods (4)**

Prerequisites: ANTHRO 1006, SOC 3220 or equivalent, or consent of instructor. Course material based on primate behavior, demographics, and morphology, Research techniques for ethological and primatological studies, including the design of research protocols, development of data collection methodologies, analysis of morphological and behavioral data and the scientific description of findings. Students are required to conduct observations of primates at the St. Louis Zoo and participate in the Undergraduate Research Symposium.

### **4312 Cultural Resource Management and Historic Preservation (3)**

Prerequisites: ANTHRO 1019 or Consent of the Instructor. This course will introduce proper practices of cultural resource management and historic preservation. It provides a technical and theoretical bridge between anthropological archaeology and its application to the management of resources. Among the issues covered will be relevant legislation, the phased approach to archaeological and



historical research, state and federal review procedures, proposal writing, interacting with clients, consulting with native peoples, and public and professional ethics and standards. This course will provide hands-on experience. Because one of the skills most sought by project managers and employers is writing competence, it will be writing intensive.

**4315 Senior Seminar in Anthropology (3)**

Prerequisite: ANTHRO 4301 and one of the following: ANTHRO 4308, 4310, or 4311. 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 ANTHRO 4316.

**4316 Senior Seminar Tutorial (1)**

Prerequisites: ANTHRO 4308 or 4310, or 4311 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 ANTHRO 4315. Must be taken concurrently with ANTHRO 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: ANTHRO 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.

**5312 Cultural Resource Management and Historic Preservation (3)**

Prerequisites: Graduate standing or consent of instructor. This course will introduce proper practices of cultural resource management and historic preservation. It provides a technical and theoretical bridge between anthropological archaeology and its application to the management of resources. Among the issues covered will be relevant legislation, the phased approach to archaeological and historical research, state and federal review procedures, proposal writing, interacting with clients, helping with native peoples, and public and professional ethics and standards. This course will provide hands-on experience. Because one of the skills most sought by project managers and employers is writing competence, it will be writing intensive.

**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 GERON 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.

**6136 Foundations of Museology II (3)**

Prerequisite: ANTHRO 6135 and consent of Director of Museum Studies Program. Same as ART HS 6036 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.

**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

**George Gokel**, Distinguished Professor of Chemistry & Biochemistry

Ph.D., University of Southern California

**Xuemin Wang**, E. Desmond Lee and Family Fund Endowed Professor of Plant Sciences

Ph.D., University of Kentucky

**Teresa Thiel**, Professor of Biology; Interim Dean, College of Arts and Sciences

Ph.D., Case Western Reserve University

**Cynthia M. Dupureur**, Associate Professor of Chemistry and Biochemistry

Ph.D., Ohio State University

**Wendy M. Olivas**, Associate Professor of Biology

Ph.D., University of Nebraska Medical Center

**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

**Lisa Schechter**, Assistant Professor of Biology

Ph.D., Harvard University

**Marc Spingola**, Assistant Teaching 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

### 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

The emerging Biotechnology sector is increasing the regional and national 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 national hub for life sciences research and development activity. 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) basis. 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 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

#### 2) Chemistry Core Courses

**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

#### 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  
PHYSICS 1011, Basic Physics  
PHYSICS 1012, Basic Physics

#### 4) Biochemistry and Biotechnology Core Courses

BIOL 4602, Molecular Biology OR  
BIOL 4612, Molecular Genetics of Bacteria (if both courses  
are taken, one can be used as an elective)  
BIOL 4614, Biotechnology Laboratory I OR  
BIOL 4615, Biotechnology Laboratory II (if both courses  
are taken, one can be used as an elective)  
BIOL/CHEM 4712, Biochemistry  
BIOL 4713, Techniques in Biochemistry OR  
CHEM 4733, Biochemistry Laboratory

#### 5) Biochemistry and Biotechnology Elective Courses- 9 credit hours chosen from the following courses:

BIOL 4602, Molecular Biology  
BIOL 4612, Molecular Genetics of Bacteria  
BIOL 4614, Biotechnology Laboratory I  
BIOL 4615, Biotechnology Laboratory II  
BIOL 4622, Molecular Cell Biology  
BIOL 4632, Nuclei Acid Structure and Function  
BIOL 4642, Plant Molecular Biology and Genetic  
Engineering  
BIOL 4652, Virology  
BIOL 4842, Immunobiology  
BIOL 4905, Research (up to 3 credit hours)  
BIOL 4920, Selected Topics (when relevant)  
CHEM 3643, Advanced Organic Chemistry Laboratory  
CHEM 3905, Chemical Research (up to 3 credit hours)  
CHEM 4722, Advanced 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 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 final research report.

#### Minor in Biology

Students who complete the B.S. degree in Biochemistry and  
Biotechnology may also obtain a minor in biology by  
completing BIOL 1821, Introductory Biology: Organisms  
and the Environment. The minor must be approved by the  
chair of the Department of Biology. At least 9 hours of the  
biology course credits must be taken in residence at  
University of Missouri-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 UMSL.

#### Learning Outcomes

Students often think of the physical and life sciences as areas  
in which one masters a collection of "scientific facts."  
However, an education in Biochemistry & Biotechnology  
involves much more than memorizing facts. Students in this  
program will develop a well-rounded set of competencies in  
several critical areas. These include:

- (1) **Discipline-Specific Knowledge.** Graduates from  
this program will have a solid foundation in the  
content areas of chemistry, biology, and  
biochemistry. A certain emphasis on specific,  
descriptive data is necessary. But the larger  
emphasis is on a clear understanding of the  
overriding principles and theorems of these areas  
that allow students to evaluate specific data within  
a larger context.
- (2) **Laboratory Skills.** Scientists not only learn the  
results of others, they work in the lab to generate  
new knowledge. Graduates will learn the basic  
skills associated with performing laboratory  
experiments in chemistry, biology, and  
biochemistry, and they will learn how to critically  
evaluate their data. This includes an appreciation  
of the potential sources of error associated within  
laboratory measurements.
- (3) **Problem Solving Skills.** Graduates will develop the  
ability to solve problems in their discipline. In part,  
this expands on laboratory skills, as students learn  
how to interpret and evaluate their data. These  
skills also include learning how to take general  
principles from various areas of chemistry,  
biochemistry, and biology and apply them to the  
solution of specific problems.
- (4) **Communication Skills.** Graduates must not only be  
able to solve problems, they must also be able to  
communicate those solutions to others. Graduates  
will learn how to write scientific reports and papers  
and will be able to make effective oral  
presentations of their results and ideas.
- (5) **Scientific Literacy.** Scientists must be able to build  
on the previous work of others and to put their new  
results into the larger context of the field. This  
requires the ability to work effectively with the

scientific literature. Graduates will be able to use the specialized search engines associated with the vast literature in chemistry, biology and biochemistry to find and retrieve information. Graduates will also have the knowledge background necessary to read papers from the literature with good comprehension.

- (6) Professional Ethics. Graduates will understand and respect the accepted standards of conduct associated with the scientific profession. This will include honestly and objectively evaluating and reporting data and demonstrating the proper respect for the published work of others.

## 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 laboratory-based research under the supervision of one of the program faculty members leading to a written thesis. All students admitted to the graduate program are considered to be in the non-thesis program. They may transfer into the thesis program after they have been accepted as a thesis student by one of the faculty.

#### M.S. Admission Requirements

Applicants to the M.S. program must submit completed application and personal data forms, two letters of recommendation from faculty at previously-attended colleges or universities, and transcripts of all previous postsecondary academic work. Applicants whose undergraduate degree is from a university outside of the United States must submit GRE scores (verbal, quantitative, and analytical). For students with a degree from a U.S. university, submission of Graduate Record Examination scores, although not required, is highly recommended. Admission as a regular graduate student requires graduation from an accredited college with a minimum grade point 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). Successful applicants will typically have completed courses in organic chemistry, cell biology, and genetics. Applicants may be asked to make up any deficiencies in these areas as a condition of enrollment.

All international 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 80 on the internet-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.

Undergraduate 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, 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.

#### 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 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, 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 PHYSICS 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**

**Peter F. Stevens**, Professor, Chairperson  
Ph.D., University of Edinburgh  
**Charles R. Granger**, Curators' Distinguished Teaching Professor  
Ph.D., University of Iowa  
**Elizabeth A. Kellogg**, E. Desmond Lee Professor of Botanical Studies  
Ph.D., Harvard University  
**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  
**Xuemin Wang**, E. Desmond Lee Professor of Plant Science  
Ph.D., University of Kentucky  
**Robert Bader**, Professor Emeritus  
Ph.D., University of Chicago  
**John G. Blake**, Professor  
Ph.D., University of Illinois  
**Arnold B. Grobman**, Professor Emeritus  
Ph.D., University of Rochester  
**James H. Hunt**, Professor Emeritus  
Ph.D., University of California-Berkeley  
**Bette A. Loiselle**, Professor  
Ph.D., University of Wisconsin  
**Robert J. Marquis**, Professor  
Ph.D., University of Iowa  
**Martin Sage**, Professor Emeritus  
Ph.D., Nottingham University  
**Monroe Strickberger**, Professor Emeritus  
Ph.D., Columbia University, NY  
**Zuleyma Tang-Martinez**, Professor  
Ph.D., University of California-Berkeley  
**Teresa Thiel**, Professor; Interim Dean of Arts and Sciences  
Ph.D., Case Western Reserve University  
**Lon A. Wilkens**, Professor  
Ph.D., Florida State University  
**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  
**Wendy M. Olivas**, Associate Professor  
Ph.D., University of Nebraska Medical Center  
**Jane A. Starling**, Associate Professor Emerita  
Ph.D., The William Marsh Rice University  
**Colin MacDiarmid**, Assistant Professor  
Ph.D., University of Auckland  
**Lisa M. Schechter**, Assistant Professor  
Ph.D., Harvard University

**Amy E. Zanne**, Assistant Professor  
Ph.D., University of Florida  
**Bethany K. Zolman**, Assistant Professor  
Ph.D., Rice University  
**Joseph Kamalay**, Assistant Teaching Professor  
Ph.D., University of California, Los Angeles  
**Lori L. Paul**, Assistant Teaching Professor  
Ph.D., Washington University  
**Marc Spingola**, Assistant Teaching Professor  
Ph.D., University of New Mexico  
**Shawn A. Cummings**, Lecturer  
M.S. Washington State University  
**Kenneth R. Mares**, Lecturer  
Ph.D., University of Missouri, Kansas City

**Affiliated Faculty**

**Terry L. Erwin**, Research Professor  
Ph.D., University of Alberta  
**Claude M. Fauquet**, Research Professor  
Ph.D., University of Strasbourg  
**Peter H. Raven**, Research Professor  
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  
**David B. Clark**, Research Associate Professor  
Ph.D., University of Wisconsin  
**Deborah A. Clark**, Research Associate Professor  
Ph.D., University of Wisconsin  
**Thomas B. Croat**, Research Associate Professor  
Ph.D., University of Kansas  
**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 University  
**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  
**George A. Yatskievych**, Research Associate Professor  
Ph.D., Indiana University  
**James L. Zarucchi**, Research Associate Professor  
Ph.D., Harvard University  
**Cheryl S. Asa**, Research Assistant Professor  
Ph.D., University of Wisconsin-Madison  
**Stanton Braude**, Research Assistant Professor  
Ph.D., University of Michigan  
**Peter M. Richardson**, Research Assistant Professor  
Ph.D., University of London

**George E. Schatz**, Research Assistant Professor  
Ph.D., University of Wisconsin-Madison  
**Christopher G. Taylor**, Research Assistant Professor  
Ph.D., North Carolina State University  
**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  
**Patrick L. Osborne**, Adjunct Associate Professor;  
Executive Director, Whitney R. Harris World Ecology  
Center  
Ph.D., University of East Anglia  
**Sean Housmandi**, Adjunct Assistant Teaching Professor  
Ph.D., University of Missouri-St. Louis

### 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 cell and molecular biology to population and community studies.

#### 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.

#### Department Honors

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.

#### Graduate Studies

The Department of Biology offers graduate work leading to the M.S. and Ph.D. degrees in biology. Graduate students will normally 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, the Donald Danforth Plant Science Center or the Saint Louis Zoo through cooperative graduate programs.

#### 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, the Donald Danforth Plant Science Center or the Saint Louis Zoo. Several sites within an hour of campus are suitable for regional field studies, including state parks, wildlife conservation areas, the Shaw Nature Reserve 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 is also a member of 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.

#### Program Objectives and Career Prospects

The degree program at the baccalaureate level is designed to prepare the student for further professional training in areas such as medicine, dentistry, veterinary medicine, optometry, plant science, conservation and related areas or for further graduate training in research in biology.

The Undergraduate Certificates in Biotechnology and Conservation Biology are for majors interested in careers in biotechnology and associated areas and in conservation respectively.

The Master of Science program is an extension of the undergraduate program and provides the research-oriented training and education necessary for students to enter doctoral programs in biology and develops professional biologists qualified to function in responsible technical positions. It also trains students to become effective secondary school and junior college biology teachers.

The Graduate Certificates in Biotechnology and in Tropical Biology and Conservation provide professional training in the areas of biotechnology and conservation.

The Ph.D. program prepares students to be research biologists in academics or other professional fields in ecology, evolution and systematic and cellular and molecular biology. Employment opportunities are available in college or university research and teaching in government and public institutions such as museums, botanical gardens and conservation organizations, and in industry.

#### 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  
1350, Conservation of Diversity

#### **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. Effective fall semester 2009, candidates must also earn a minimum grade of C- in all core 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 Plant Families: Phylogeny and  
Diversification

**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 requirements are 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**

ENGL 3100, Advanced Expository Writing or  
ENGL 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:

**PHYSICS 1011**, Basic Physics  
**PHYSICS 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 addition 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. Effective fall semester 2009, candidates must earn a minimum grade of 2.0 in all core 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 UMSL 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 Plant 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:

#### **Formal Speaking**

**COMM 1040**, Introduction to Public Speaking

#### **Writing**

**ENGL 3100**, Advanced Expository Writing or  
**ENGL 3160**, Writing in the Sciences (strongly preferred)

**2) Associated Science Area:** The following courses or their equivalents must be successfully completed:

**PHYSICS 1011**, Basic Physics  
**PHYSICS 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 Opportunities**

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.

#### **Departmental Honors Thesis**

The Department of Biology offers the more motivated and highly achieving students the opportunity to present primary research in the form of a written Honors Thesis. The first step in conducting an undergraduate thesis is to identify a faculty research mentor; the mentor, along with two UMSL faculty members, will be readers of the thesis. It is highly recommended that students arrange to work full-time on their honors thesis during the summer between the junior and senior years. Some funds are available from university and departmental fellowships, but in more cases support will come from the sponsoring lab.

The thesis will be completed and presented orally in an advertised public forum by the first of the month in which graduation is to occur. The readers of the thesis will decide on the appropriate level of honors, and 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). In addition to fulfilling the coursework required for a B.S. or B.A. in Biology and the Honors Thesis itself, students must: 1) carry at least a 3.3 GPA, 2) complete a minimum 2 credit hours of BIOL 4905 (Research).

#### **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  
**ENGL 3160**, Writing in the Sciences  
**HIST 1001, 1002, or 1003**, American Civilization  
**POL SCI 1100**, Introduction to American Politics  
**PHIL 3380**, Philosophy of Science  
**COMM 1040**, Introduction to Public Speaking  
**THEATR 1210**, Fundamentals of Acting  
**GEOL 1001**, General Geology  
**ATM SCI 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 Experiences 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**  
**BIOL 4985**, Curriculum and Methods of Teaching Life Sciences  
**BIOL 4986**, Laboratory in Teaching Life Sciences  
**SEC ED 3290**, Secondary School Student Teaching  
**BIOL 4999**, Science Teaching Intern Seminar

Because specific biology courses are required for teaching endorsement, students are advised to 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 UMSL.

#### Requirements are:

**BIOL 1811**, Introductory Biology: From Molecules to Organisms, **BIOL 1821**, Introductory Biology: Organisms and the Environment, and **BIOL 2012**, 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 plan an appropriate course of study in consultation with an adviser, and the program must be given prior approval 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.

Candidates must have a cumulative grade point average of 2.0 or better in the minor; **no 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 Biology of the Cell  
**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 Biology of the Cell  
**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 UMSL 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

#### **Pre-professional Graduation**

The Department of Biology sponsors a 3+4 Program for the UMSL 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 UMSL 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 (4<sup>th</sup> year) at Logan, a student will receive a B.S. 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):**

**MATH 1310**, Elementary Statistical Methods; or  
**MATH 1320**, Applied Statistics I or  
**BIOL 4122**, Biometry  
**COMM 1040**, Introduction to Public Speaking (3)  
**ENGL 1100**, Freshman Composition (3)  
**ENGL 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)  
**PHYSICS 1011**, Basic Physics (4)  
**PHYSICS 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**

The graduate program offers both Masters and Ph.D. degrees, as well as Graduate Certificates in biotechnology and Tropical Biology and Conservation.

**Advisers**

All graduate students will have a faculty adviser. In the event that a student's interest changes or the faculty adviser feels the student's direction no longer falls with 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 the other, he/she is encouraged to meet with the director of the graduate program.

**Graduate Assistantships**

Stipends for teaching and research assistantships are awarded on a competitive basis to qualified graduate students in masters or Ph.D. programs. Tuition fees are waived for graduate assistants. Application for assistantships must be sent to the Director for Graduate Studies in the Department of Biology and received by December 1.

**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. Non-thesis students may also elect to take courses in both areas.

**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 or work supervisors, 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, and the student 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 (Genetics) or BIOL 3302 (Evolution), 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.

#### **General Requirements**

All students are required to take at least 4 but not more than 8 hours of BIOL 6889, Graduate Seminar. Thesis students are required, and non-thesis students encouraged, to take BIOL 5089, Ethical Issues in Biology. Students are expected to maintain a GPA of 3.0 or better.

#### **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.

#### **Doctor of Philosophy 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. They 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. All students are required to take BIOL 5089, Ethical Issues in Biology. 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

Students in Ecology, Evolution and Systematics are required to take **BIOL 5192** Community Ecology, **BIOL 5312** Theory of Systematics and **BIOL 4182** Population Biology.

#### **Maintenance of Status**

All students are expected to maintain a GPA of 3.0 or better. Students will normally meet formally with their thesis committee or, if that has not been formed, with their adviser each year to maintain their status in the program.

#### **First-Year Experience**

Ph.D. students are expected to become involved in a research experience during their first-year program, usually by spring semester or summer session.

#### **Qualifying Examination**

All students must pass a qualifying examination consisting of a written and oral component. Students beginning studies in the fall semester will 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.

The examination for Ecology, Evolution and Systematics students evaluates knowledge of fundamental principles presented in formal courses and in papers of special importance in the field. The written exam will be given in December of each year, at the end of the fall semester, and the oral portion at the beginning of the spring semester, in January.

The Qualifying Examination for Cellular and Molecular students is composed of a written portion in which the student prepares a formal research proposal on a topic different from that of her/his doctoral dissertation research, and an oral portion during which the student defends the

research proposal as well as his/her knowledge of the fundamental concepts of molecular biology, cell biology, and biochemistry.

#### **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. The proposal is to be successfully defended by the end of the sixth semester.

#### **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. BIOL 6615, Advanced Biotechnology Laboratory II**

**II. BIOL 6602, Advanced Molecular Biology or BIOL 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
- 6550, Advanced Bacterial Pathogenesis
- 6612, Advanced Molecular Genetics of Bacteria (if not taken as a required course)
- 6622, Advanced Molecular Biology of the Cell
- 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
- 6915, Graduate Seminar Practicum
- 6920, Topics in Biology, when relevant

#### **Chemistry**

- 4722, Advanced Biochemistry
- 4733, Biochemistry Laboratory
- 4772, Physical Biochemistry

### **Graduate Certificate in Tropical Biology and Conservation**

The Graduate Certificate is intended for students who wish to pursue a career in conservation biology or ecology from either a research or a practical standpoint. Cooperating institutions include the Missouri Botanical Garden, St. Louis Zoo, Center for International Studies at UMSL, and the Departments of Chemistry, Economics, History, Political Science, Social Work, and Sociology.

### **Admission**

Students enrolled in UMSL who intend to receive a Graduate Certificate in Tropical Biology and Conservation must complete an application form available from the Graduate School. Students not enrolled in a course of graduate studies at UMSL must apply simultaneously to the University's Graduate Admissions office. Students who have a baccalaureate degree or are enrolled in graduate work elsewhere may apply for admission to the certificate program without regular admission to the graduate program. Due to limited space, admission will be on a competitive basis based on student motivation and academic qualifications. The minimum admissions requirements include: (1) at least a 3.0 GPA for undergraduate coursework; and (2) current enrollment in the graduate program in biology at UMSL having satisfied the prerequisites of the certificate; or completion of a baccalaureate degree and having satisfied the prerequisites of the certificate program. The minimum prerequisites are undergraduate courses in ecology, evolution and genetics.

### **Requirements**

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 at institutions other than UMSL. Students may simultaneously earn a graduate degree and count credits earned in their degree program toward the certificate when appropriate.

### **Required Core Courses:**

- BIOL 6250, Public Policy of Conservation and Sustainable Development**
- BIOL 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:**

- BIOL 6212, Theory and Application of Conservation Biology**
- BIOL 6222, Advanced Tropical Ecology and Conservation**

### **Electives:**

- BIOL 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

#### 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 UMSL 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.

**1350 Conservation of Biodiversity (3)**

Examines the protection and management of the Earth's diverse species, habitats, and ecosystems. Considers the impact of human activity on other species and their environment and reviews efforts to curb those impacts. Students weigh these issues from efforts to curb those impacts. Students weigh these issues from the point of view of the scientist and as citizens of the world. Does not provide credit toward the biology major. Biology majors interested in a course on this topic should register for BIOL 3202.

**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 (2)**

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 of 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 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. 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, and BIOL 3622, or consent of instructor. A study of the structural organization and processes of eukaryotic cells. Topics of discussion will include membrane dynamics, organelle biogenesis and function, signal reception and transduction, cytoskeleton structure and mobility, and the cell cycle. Basic concepts in these areas will be combined, covering complete signal transduction pathways and the cellular basis of disease, including cancer. Three hours of lecture per week. Students may not receive credit for both Biology 6622 and Biology 4622.

**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 Biology and Biotechnology (3)**

Prerequisite: BIOL 4602 or 4612. Topics may include molecular and cellular aspects of plant growth, development, and responses to environmental stress and pathogen attack, using the experimental approaches of genetics, molecular biology, and biochemistry. Plant growth manipulation and genetic engineering, including techniques required for DNA transfer and plant regeneration, as well as current and potential future applications, such as engineered resistance

to stress, developmental engineering, and metabolic engineering, will also be covered. Three hours of lecture per week. Student may not receive credit for both BIOL 4642 and BIOL 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 adviser; generally restricted to junior and senior standing. Research in an area selected by the student in consultation with and under the supervision of an UMSL Biology faculty research adviser. 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 SEC ED 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, SEC ED 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: BIOL 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.

**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.

**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 Biology of the Cell (3)**

Prerequisites: BIOL 4602 and BIOL 3622 or consent of instructor. A study of the structural organization and processes of eukaryotic cells. Topics of discussion may include membrane dynamics, organelle biogenesis and function, signal reception and transduction, cytoskeleton structure and mobility, and the cell cycle. Basic concepts in these areas will be combined, covering complete signal transduction pathways and the cellular basis of disease, including cancer. 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 Biology and Biotechnology (3)**

Prerequisite: BIOL 4602 or 4612. Topics may include molecular and cellular aspects of plant growth, development, and responses to environmental stress and pathogen attack, using the experimental approaches of genetics, molecular biology, and biochemistry. Plant growth manipulation and genetic engineering, including the techniques required for DNA transfer and plant regeneration, as well as current and potential future applications, such as engineered resistance to stress, developmental engineering, and metabolic engineering, also will be covered. Students may not receive credit for both BIOL 4642 and BIOL 6442.

**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  
**George Gokel**, Distinguished Professor, Associate Director  
of the Center for Nanoscience  
Ph.D., University of Southern California  
**Robert W. Murray**, Curators' Professor Emeritus  
Ph.D., Yale University  
**Lawrence Barton**, Professor Emeritus  
Ph.D., University of Liverpool  
**James S. Chickos**, Professor  
Ph.D., Cornell University  
**Joyce Y. Corey**, Professor Emerita  
Ph.D., University of Wisconsin  
**Thomas F. George**, Professor and Chancellor  
Ph.D., Yale University  
**Wesley R. Harris**, Professor  
Ph.D., Texas A. and M. University  
**David W. Larsen**, Professor Emeritus  
Ph.D., Northwestern University  
**Jingyue Liu**, Professor,  
Director of the Center for Nanoscience  
Ph.D., Arizona State University  
**James J. O'Brien**, Professor  
Ph.D., Australian National University  
**Keith J. Stine**, Professor  
Ph.D., Massachusetts Institute of Technology  
**Alicia M Beatty**, Associate Professor  
Ph.D., Washington University  
**Alexei V. Demchenko**, Associate Professor, Director of  
Graduate Studies  
Ph.D., Zelinsky Institute for Organic Chemistry  
**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  
**Stephen M. Holmes**, Associate Professor  
Ph.D., University of Illinois-Urbana-Champaign  
**Jane A. Miller**, Associate Professor Emerita  
Ph.D., Tulane University  
**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  
**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

**Nigam P. Rath**, Research Professor  
Ph.D., Oklahoma State University  
**James Bashkin**, Research Associate Professor  
Oxford University, UK  
**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  
**John Gutweiler**, Lecturer  
Ph.D., Saint Louis University

### Technical Staff

**Joseph Kramer**, Spectrometrist  
**John Tubbesing**, Senior Electronics Technician  
**Donna Kramer**, Coordinator, Laboratory Operations  
**Frank L. May**, Research Investigator  
**Bruce Burkeen**, Senior Research Engineering Technician  
**Joe Flunker**, Glassblower

### 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 awarded to a junior, preferably a first generation college student.

**The Barbara Willis Brown Scholarship** is given annually to a female chemistry major who is at least 25 years of age. The student is encouraged to enroll in undergraduate research (CHEM 3905) however, research is not a requirement for this award. Student financial need is a consideration.

**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 Outstanding Sophomore Chemistry Major award is made to the top sophomore chemistry student, 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 pre dental 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.

### 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
- 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
- 3412, Basic Inorganic Chemistry
- 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 Biology 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, Advanced 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, Advanced Inorganic Chemistry  
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 chemistry major 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*.) There are a few science courses beyond the minimum listed above.

**Chemistry 3412**, 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  
**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>.

Competencies/Expectations/Outcomes that all students must demonstrate to complete the program successfully:

1. Knowledge and comprehension in areas of chemistry – Graduates should have a foundation of knowledge in chemistry as outlined by the American Chemical Society Committee on Professional Training in their guide to *Undergraduate Professional Education in Chemistry*. In order to achieve the goals of any one of our chemistry degrees, knowledge is required from the related areas of introductory physics and calculus.
2. Scientific problem-solving skills – Graduates should understand valid scientific approaches to problem-solving and be able to design experiments to test a hypothesis.
3. Data analysis/quantitative skills – Graduates should be able to draw valid conclusions from experimental data and observations. Graduates should be able to carry out statistical and linear regression analysis of data. Graduates should be able to evaluate the main possible sources of error in laboratory measurements.
4. Laboratory skills – Graduates should be able to carry out the basic techniques of preparative and analytical chemistry. An appreciation of the basic aspects of chemical spectroscopy should be achieved. B.S. degree graduates should have developed an appreciation of the application of advanced/specialized instrumentation to solving chemical problems. Graduates should be able to keep accurate records of experiments. Graduates should be able to work effectively in the laboratory individually or as a part of a small team. Graduates should have an awareness of the basic aspects of safe laboratory practices.
5. Communication skills – Graduates should be able to communicate scientific ideas clearly both orally and in written form. This includes the effective presentation of quantitative data and of scientific concepts or procedures using diagrams and/or figures.
6. Library/Information skills – Graduates should be able to search for and retrieve information from scientific journals, databases, and handbooks, especially those widely used by professional chemists.

7. Computer/software skills – Graduates should be proficient in the use of software widely used by practicing scientists, including word processors, scientific plotting and analysis software, spreadsheets, data acquisitions software interfaced to commercial instruments, and simulation software.

## 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 five areas of chemistry (biochemistry, 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.

### Degree Requirements

Incoming doctoral students must demonstrate proficiency in biochemistry, 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 4<sup>th</sup> 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 6<sup>th</sup> 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, Survey of Physical Chemistry with Application to the Life Sciences
  - CHEM 4343, Physical Chemistry Laboratory II
  - CHEM 4412, Advanced Inorganic Chemistry
  - 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 or cumulative examinations.
- 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

Three 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 UMSL 2001-2002 Bulletin. The following courses fulfill the Natural Sciences and Mathematics breadth of study requirements as described in that Bulletin:

1011, 1111, 1121, 1134, 2223, 2612, 2622, 2633, 3022, 3312, 3322, 3333, 3412, 3643, 3814, 3905, 4212, 4233, 4343, 4412, 4433, 4652, 4712, 4722, 4733, 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.

**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.

**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.

**3412 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.

**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 PHYSICS 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  $^{13}\text{C}$  and  $^1\text{H}$ , 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.

**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.

**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.

**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.

**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.

**5352 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**, Curators' Professor, Chairperson  
Ph.D., University of Cambridge  
**Robert Bursik**, Curators' Professor  
Ph.D., University of Chicago  
**Finn Aage Esbensen**, E. Des Lee Professor of Youth Crime and Violence  
Ph.D., University of Colorado  
**Richard Rosenfeld**, Curators' Professor, Ph.D. Director  
Ph.D., University of Oregon  
**G. David Curry**, Professor  
Ph.D., University of Chicago  
**Janet L. Lauritsen**, Professor  
Ph.D., University of Illinois-Urbana  
**Jody Miller**, Professor  
Ph.D., University of Southern California  
**David Klinger**, Associate Professor, M.A. Director  
Ph.D., University of Washington  
**Allen E. Wagner**, Associate Professor Emeritus  
Ph.D., Washington University  
**Kristin Carbone-Lopez**, Assistant Professor  
Ph.D., University of Minnesota  
**Beth Marie Huebner**, Assistant Professor  
Ph.D., Michigan State University  
**Andres Rengifo**, Assistant Professor  
Ph.D., City University of New York  
**Lee Ann Slocum**, Assistant Professor  
Ph.D., University of Maryland  
**Terrance J. Taylor**, Associate Research Professor  
Ph.D., University of Nebraska  
**Timothy Maher**, Associate Teaching Professor, Undergraduate Director  
Ph.D., University of Missouri - St. Louis

Criminology and criminal justice faculty represent several academic disciplines. By integrating practice with theory, faculty members 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 CRIMIN 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 year, 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 a 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 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 ENGL 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.

Criminology majors may not take course numbers 1100, 2260, or 3345 offered through UM-Independent Studies to fulfill degree requirements in the major.

### **Expected Learning Outcomes**

1. Acquire basic knowledge of the theories, methods and substance of issues in criminology and criminal justice.
2. Develop critical thinking skills through the application of criminological theory and social science research methods.
3. Develop fundamental understanding of interdisciplinary underpinnings (e.g., from sociology, psychology, political science, economics) of criminology and criminal justice issues and policies.
4. Acquire knowledge about the structure and functioning of the fundamental institutions (e.g., legislatures, police, punishment, supervisory) that are part of criminal justice systems.
5. Acquire understanding of the role of research and its application for informing policies about criminal justice issues.

### **Core Curriculum**

Bachelor of Science in Criminology and Criminal Justice candidates must complete the core curriculum listed below:

The following courses in criminology and criminal justice are required:

- 1100, Introduction to Criminology and Criminal Justice
- 1110, Theories of Crime
- 1120, Criminal Law
- 1130, Criminal Justice Policy
- 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 five:

- 2230, Crime Prevention
- 2240, Policing
- 2250, The Courts
- 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

### **Elective Courses**

- 1990, The City
- 2180, Alcohol, Drugs and Society
- 2251, Youth Gangs
- 2265, Capital Punishment
- 3280, Internship in Criminology and Criminal Justice
- 3290, Special Readings

Candidates must also have a cumulative grade point average of 2.0 or better in the major.

### **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 non thesis 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.

### **Expected Learning Outcomes**

1. Develop a comprehensive understanding of the theories, methods and substance of issues in criminology and criminal justice and demonstrate an ability to synthesize knowledge in these areas.
2. Develop a comprehensive understanding of interdisciplinary underpinnings (e.g., from sociology, psychology, political science, economics) of criminology and criminal justice issues and policies.
3. Develop critical thinking and communication skills through the application of criminological theory and social science research methods.
4. Develop a comprehensive understanding of the structure and functioning of the fundamental institutions (e.g., legislatures, police, punishment, supervisory) that are part of criminal justice systems.
5. Develop comprehensive understanding of the role of research and its application for informing policies about criminal justice issues.

### **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. Admission is competitive.

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 (CRIMIN 7499) are required. Students may enroll for dissertation credits (CRIMIN 7499) only when all other degree requirements have been completed.

#### **Required courses for the Ph.D. are:**

**5415**, Foundations of Criminological Theory

**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:**

**6430**, Law and Social Control

**6431**, The Nature of Punishment

6432, Criminal Law  
6435, Law, Courts, and Public Policy  
6436, Comparative Legal Systems  
6441, Juvenile Delinquency  
6442, Communities and Crime  
6443, Violent Crime  
6446, Sex Crime  
6448, Victimization  
6451, Juvenile Justice Systems  
6452, The Police  
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.

Further information about the comprehensive 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 institutions(s) before the start of the fall 2002 semester must meet the general education requirements stipulated in the UMSL 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, 2230, 2240, 2260, 2270, 3043, 3290, 3305, 3310, 4330, 4320, 4325, 3043, 4335, 4340, 3345, 4350, 4380, 4390. The following courses fulfill the Humanities breadth of study requirements: 2252.

#### **1075 Crime and Punishment (3)**

Same as SOC 1075 and INTDSC 1075. 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: CRIMIN 1100. Introduction to major theoretical approaches to the study of crime and justice.

#### **1120 Criminal Law (3)**

Prerequisite: CRIMIN 1100. Analysis of substantive criminal law, evidence and judicial procedure.

#### **1130 Criminal Justice Policy (3)**

Prerequisite: CRIMIN 1100. Introduction to criminal justice policy making, planning, and implementation.

#### **1200 Foundations of Law: An Introduction to Legal Studies (3) [MI, V, SS]**

Same as INTDSC 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 1003. 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: CRIMIN 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: CRIMIN 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.

**2230 Crime Prevention (3)**

Prerequisite: CRIMIN 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: CRIMIN 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.

**2250 The Courts (3)**

Prerequisite: CRIMIN 1100. This course provides an overview of current and historical perspectives on the function of the American courts. Emphasis on the dynamics of courthouse justice, with special attention placed on the roles of the prosecutors, judges, defense attorneys, defendants, victims, and jurors regarding the decisions that impact the adjudication process.

**2251 Youth Gangs (3)**

Prerequisites: CRIMIN 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: CRIMIN 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.

**2270 Juvenile Justice and Delinquency (3)**

Prerequisite: CRIMIN 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, CRIMIN 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.

**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: CRIMIN 1120, 1130, 2220 and ENGL 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: CRIMIN 1120, 1130, 2220 and ENGL 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: CRIMIN 1100. An examination of the history, application, and attitudes toward the death penalty.

**3325 Violence Against Women (3)**

Prerequisites: Junior Standing, CRIMIN 1110, 1120, 1130, 2210, 2220, and Eng 3100, or consent of instructor. Same as WGST 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.

**3345 Rights of the Offender (3)**

Prerequisites: CRIMIN 1120, 1130, 2220 and ENGL 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: CRIMIN 1110, 1120, 1130, 2210, 2220, and ENGL 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: CRIMIN 1110, 1120, 1130, 2210, 2220, and ENGL 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 and WGST 4325. Prerequisites: CRIMIN 1110, 1120, 1130, 2210, 2220, and ENGL 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 Criminology diversity requirement.

**4335 Probation and Parole (3)**

Prerequisites: CRIMIN 1110, 1120, 1130, 2210, 2220, 2260, and ENGL 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: CRIMIN 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: CRIMIN 1110, 1120, 1130, 2210, 2220, and ENGL 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: CRIMIN 1110, 1120, 1130, 2210, 2220, and ENGL 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: CRIMIN 1110, 1120, 1130, 2210, 2220, ENGL 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: CRIMIN 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.

**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 P P ADM 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.

**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.

**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: CRIMIN 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: CRIMIN 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.

**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.

**6435 Gender, Crime and Criminal Justice (3)**

Same as WGST 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.

**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.

**6446 Sex Crime (3)**

Same as WGST 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.

**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 procedures 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.

**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: CRIMIN 6405 and CRIMIN 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: CRIMIN 6405 and CRIMIN 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: CRIMIN 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  
**Sel Dibooglu**, Professor  
Ph.D., Iowa State University  
**Susan K. Feigenbaum**, Professor  
Ph.D., University of Wisconsin  
**Thomas R. Ireland**, Professor Emeritus  
Ph.D., University of Virginia  
**Sharon G. Levin**, Professor Emeritus  
Ph.D., University of Michigan  
**William E. Mitchell**, Professor Emeritus  
Ph.D., Duke University  
**Donald Phares**, Professor Emeritus  
Ph.D., Syracuse University  
**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 E. Winkler**, Professor  
Economics and Public Policy Administration  
Ph.D., University of Illinois at Urbana-Champaign  
**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  
**Shirley L. Porterfield**, Associate Professor,  
Economics and Social Work  
Ph.D., University of Wisconsin-Madison  
**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  
**Donald C. Sweeney II**, Teaching Professor  
Economics and College of Business  
Associate Director, Center for Transportation Studies  
Ph.D., Washington University  
**Michael T. Allison**, Associate Teaching Professor  
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  
**Barbara Flowers**, Lecturer, and  
Director for the Center for Entrepreneurship  
And Economic Education  
M.A., University of Missouri-St. Louis

### 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, property rights, wage discrimination, urban economic development, health economics, economics of science, economics of gender, poverty and welfare, economics of culture 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.

#### 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

Students completing the B.A. and B.S. in Economics are expected to have achieved the following learning outcomes:

1. Use economic reasoning to interpret and evaluate social, political and economic arguments, and policies.
2. Use mathematical models to interpret and analyze economic models to assess their logical validity and to model economic phenomena.
3. Use statistical methods to interpret and analyze economic data and to assess the empirical validity of economic propositions.
4. Employ their understanding of key market institutions such as property rights and contracts and economic organizations such as the Federal Reserve System and the International Monetary Fund to analyze economic behavior and evaluate public policy.

5. Identify the causes and consequences of poverty and prosperity across and within societies.
6. Predict changes in key macroeconomic variables in response to changes in social, political, and economic policy as well as non-economic events such as terrorist attacks, natural disasters, and changes in consumer confidence.
7. Write a research paper that employs sound economic reasoning and, where appropriate, uses data and statistical methods to analyze an economic policy.

### **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, Elementary Linear Algebra
- MATH 4100, Advanced Calculus
- MATH 4200, Mathematical Statistics I

### **General Business Preparation:**

It is recommended that students interested in pursuing careers in business also take:

- BUS AD 2400, Fundamentals of Financial Accounting
- BUS AD 2410, Managerial Accounting
- BUS AD 2900, Legal Environment of Business
- BUS AD 3500, Financial Management
- BUS AD 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**

Students completing the M.A. in Economics are expected to have achieved the following learning outcomes:

1. Interpret and analyze economic models and assess their validity.
2. Use theoretical and empirical tools to design effective business and government policies.
3. Use econometric methods to interpret and analyze economic data, to assess the empirical validity of economic propositions, evaluate business and government policies, and to forecast economic variables.
4. Develop at least one area of expertise through familiarity with the relevant scholarly and professional literatures, policy issues, institutions, and current data trends.
5. Develop at least one methodological area of expertise through the acquisition of the theoretical and empirical tools needed to understand scholarly and professional contributions to the literature to facilitate lifelong professional contributions to the literature to facilitate lifelong professional development and refinement of expertise.
6. Write a professional quality research paper.
7. Develop sufficient proficiency in the use of theoretical and empirical tools and in understanding of economic institutions to excel in a Ph.D. program.

**B.S./M.A. Dual Degree Program in Economics**

The B.S./M.A. (also known as the 2+3 program) is an accelerated program that allows students to complete a B.S. and a M.A. in economics in five years. The program allows students to apply 12 of the M.A. credit hours towards the B.S., reducing the overall required hours for the two degrees from the standard 150 (120 for the B.S. plus 30 for the M.A.) to 138 hours.

Candidates for the M.A. in Economics must complete a 30-hour semester curriculum. The following 3 courses (9 credit hours) are required:

Economics 5001, Microeconomics Analysis

Economics 5002, Macroeconomics Analysis

Economics 5100, Econometric theory and Methods

In addition, 21 credit hours of electives must be completed. At most, six of these credit hours may be economics courses at the 4000 level (excluding Economics 4100 and Economics 4150 which cannot be utilized as part of the M.A. degree); all other electives must be at the 5000 level or higher.

Of the 30 hours taken in the M.A. program, 12 of these hours (per the approval of the Graduate Director) will also count toward the undergraduate B.S. requirements. All other requirements for the B.S. degree remain in effect.

**Admission Requirements**

Applicants will have completed between 60 and 108 credit hours. Applicants must have a minimum G.P.A. of 3.0 (both overall and in economics courses) and must be nominated by a full-time regular economics faculty member. Applicants must have completed all of the general education requirements as well as college algebra (or a higher level mathematics course), introductory microeconomics and introductory macroeconomics. Those accepted with fewer than 90 semester hours credit hours are accepted only on a provisional basis. Once the student has completed 90 semester hours of coursework (typically including ECON 3001, 3002, 3100, 3200, MATH 1800, and preferably ECON 4100) with a satisfactory G.P.A. (minimum G.P.A. of 3.0 overall and in economics courses) the provisional status is dropped.

It is recommended that applicants apply when they have completed 90 credit hours; further, it is recommended that applicants should complete intermediate microeconomics (Economics 3001) and/or introductory econometrics (Economics 4100) before applying.

**Awarding of Degrees**

Both degrees (the B.S. and M.A.) will be awarded when all requirements for the entire program have been completed. In other words, the B.S. and M.A. degrees will be simultaneously awarded at the completion of study.

Students who officially withdraw from the B.S./M.A. 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**

**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 30-hour semester curriculum.

Candidates need not have an undergraduate degree in economics. However, students are expected to have taken intermediate micro- and macro-economics, mathematical economics, and introductory econometrics prior to the beginning of the core curriculum. Students that do not have these courses will take these courses first; credits earned in these courses do not count towards the 30 hours required for the M.A.

#### **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 – 9 hours

**ECON 5001**, Microeconomic Analysis  
**ECON 5002**, Macroeconomic Analysis  
**ECON 5100**, Econometric Theory and Methods

II) Electives – 21 hours

Twelve hours of graduate-level business electives (excluding BUS AD 5000, BUS AD 5001, and BUS AD 5002, IS 6800

and LOG OM 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 BUS AD 5001), Intermediate Macroeconomics (ECON 3002 or BUS AD 5002), Mathematical Economics (ECON 4150), Money and Banking (ECON 3200), Statistical Analysis for Management Decisions (LOG OM 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 5670**, Assessment of Damages in Personal Injury and Wrongful Death

#### **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 Department of Economics Office, 408 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 UMSL 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, 3320, 3400, 3500, 3501, 3600, 3620, 3650, 3700, 3800, 3900, 4030, 4040, 4100, 4110, 4130, 4150, 4160, 4550, 4980, 4990, 5110  
GEOGRAPHY: 1001, 1002, 2900

### 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: MATH 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-with 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.

### **1005 Family Economics and Household Development (3)**

Prerequisites: None. Provides social service professionals that work with low income individuals and families with an understanding of the principles of personal financial management. Case studies are used to apply course content and to develop training strategies for clients to improve household financial management. The role of financial institutions and government policies as well as their impact on low income families is also examined. Resources to use with clients will be identified. Economics 1005 does not count toward a major or minor in Economics.

### **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.

### **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) [MI,SS]**

Prerequisite: ECON 1000 or 1001. Same as WGST 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.

**3003 Game Theory and Strategic Decision Making (3)**

Prerequisites: ECON 1001. When the best course of action depends on the decisions made by others, strategy becomes important. Game theory provides the tools for analyzing such strategic decision making. Strategic behavior is analyzed in the context of business, logistics, biology, war, government, politics, and everyday life. A wide variety of in-class experiments are used to illustrate key concepts.

**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.

**3320 Economic Development (3)**

Prerequisites: ECON 1001, or 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 (3)**

Prerequisite: ECON 1002 and ECON 3001. Analysis of the role of government expenditures and taxation. Topics include: (1) analysis of public goods and externalities, models of collective choice, elements of benefit-cost analysis, the theory of bureaucracy, governments as agents in markets; and (2) 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 different 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.

### **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.

### **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 BUS AD 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.

**4500 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.

**4510 Public Choice (3)**

Prerequisite: ECON 3001 or consent of instructor. Public choice is the analysis of government and governmental institutions through the logic of economics. It assumes the same principles that economists use to analyze actions in the marketplace, and applies them to actions made in collective decision-making. Topics covered include: the efficiency of democracy, voting methods, the incentives of legislators, bureaucrats and lobbyists, political competition, and public institutions and economic growth.

**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.

**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 BUS AD 5001; ECON 3002 or BUS AD 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 BUS AD 5001; ECON 3002 or BUS AD 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 PPAD 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.

**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 BUS AD 5001; ECON 3002 or BUS AD 5002; ECON 4150; ECON 4100 or LOG OM 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 LOG OM 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 macroeconomics, international economics and/or financial markets.

**5130 Advanced Topics in Business and Economic Forecasting (3)**

Prerequisites: ECON 3001 or BUS AD 5001, ECON 3002 or BUS AD 5002, ECON 4150, ECON 4100 or LOG OM 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 BUS AD 5001; ECON 3002 or BUS AD 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 BUS AD 5001; ECON 3002 or BUS AD 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 BUS AD 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 BUS AD 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 Finance (3)**

Prerequisite: ECON3200, ECON 3001 or BUS AD 5002. Application of economic theory to international financial issues and discussion of current financial institutions and developments in the global economy. Topics include the international payments mechanism, the balance of payments, foreign exchange markets, international linkages, world inflation, capital flows, and macroeconomic policy in open economics.

### **5400 Labor Economics: Theory and Public Policy (3)**

Prerequisite: ECON 3001 or BUS AD 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 BUS AD 5001, or PPAD 6080. Same as PPAD 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.

### **5510 Public Choice (3)**

Prerequisites: ECON 3001 or consent of instructor. Public choice is the analysis of government and governmental institutions through the logic of economics. It assumes the same principles that economists use to analyze actions in the marketplace, and applies them to actions made in collective decision-making. Topics covered include: the efficiency of democracy, voting methods, the incentives of legislators, bureaucrats and lobbyists, political competition, and public institutions and economic growth.

### **5600 Structure and Performance of United States Industry (3)**

Prerequisites: ECON 3001 or BUS AD 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, BUS AD 5000 or BUS AD 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 3001 or BUS AD 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.

**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 BUS AD 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) [ML, 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.

**2001 Cultural Geography (3)**

Prerequisite: None. This course examines the effect of geography on culture and cultural groups. Essential to the geographic perspective is identifying the effect on cultures of the current trend toward increasing globalization. Topics include language, religion, attitudes, and the effect of technology. The major goals are to increase awareness of the diversity of human cultures and to prepare students for a world of increasing intercultural communication and conflict. Satisfies cultural diversity requirement.

**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

**Richard M. Cook**, Professor, Chairperson  
Ph.D., University of Michigan  
**Joseph Carroll**, Curators' Professor  
Ph.D., University of California-Berkeley  
**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  
**David Carkeet**, Professor Emeritus, Chairperson  
Ph.D., Indiana University  
**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  
**Francis Grady**, Professor  
Ph.D., University of California-Berkeley  
**Barbara A. Kachur**, Professor  
Ph.D., The Ohio State University  
**Howard Schwartz**, Professor  
M.A., Washington University  
**James E. Tierney**, Professor Emeritus  
Ph.D., New York University  
**Jane Zeni**, Professor Emerita  
Ed.D., University of Missouri-St. Louis  
**Deborah Aldrich-Watson**, Associate Professor  
Ph.D., Columbia University  
**Suelynn Duffey**, Associate Professor  
Ph.D., The Ohio State University  
**Kathy Gentile**, Associate Professor  
Ph.D., University of Oregon  
**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  
**Mary Troy**, Associate Professor  
M.F.A., University of Arkansas  
**Jane Williamson**, Associate Professor Emerita  
Ph.D., Bryn Mawr College  
**John Dalton**, Assistant Professor  
M.F.A., University of Iowa  
**Kurt Schreyer**, Assistant Professor  
Ph.D., University of Pennsylvania  
**Nancy Robb Singer**, Assistant Professor  
Ph.D., University of Missouri-St. Louis  
**Benjamin Torbert**, Assistant Professor  
Ph.D., Duke University  
**Eric Turley**, Assistant Professor  
Ph.D., University of Nebraska  
**Nancy Gleason**, Teaching Professor  
M.A., University of Missouri - St. Louis

**William Klein**, Teaching Professor  
Ph.D., Michigan Technological University  
**Susan Grant**, Associate Teaching Professor  
M.A., Southern Illinois University-Edwardsville  
**David Rota**, Teaching Professor  
Ph.D., Southern Illinois University-Carbondale  
**Jennifer MacKenzie**, Associate Teaching Professor  
M.A., Purdue University  
**William Mayhan**, Associate Teaching Professor  
Ph.D., Washington University  
**Scott McKelvie**, Associate Teaching Professor  
M.A., University of Missouri - St. Louis  
**Barbara Van Voorden**, Associate Teaching Professor  
M.A., Washington University  
**Deborah Maltby**, Assistant Teaching Professor  
Ph.D., University of Missouri-Kansas City  
**Lynn Staley**, Assistant Teaching Professor  
Ph.D., St. Louis University  
**Drucilla Mims Wall**, Assistant Teaching Professor  
Ph.D., University of Nebraska-Lincoln  
**Ellie Chapman**, Senior Lecturer Emerita  
M.A., Murray State University  
**Judy Gurley**, Senior Lecturer Emerita  
M.A., University of Arkansas  
**Thomas Glenn Irwin**, Assistant Teaching Professor  
MFA, University of Missouri-St. Louis  
**Judith Linville**, Senior Lecturer Emerita  
M.A., University of Arkansas  
**Terence Martin**, Senior Lecturer Emeritus  
Ph.D., Southern Illinois University-Carbondale  
**Jeanne Allison**, Lecturer  
M.A., University of Missouri-St. Louis

### 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, professional, 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.

### Learning Outcomes

Recipients of the undergraduate degree will demonstrate the following outcomes:

- Demonstrate advanced skills in reading and analyzing texts and a knowledge of literary and rhetorical terms and concepts.
- Demonstrate mastery of content in at least five specific fields in language, literature, and written literacy.
- Demonstrate knowledge of historical and critical context for these fields and the relevance to them of a variety of critical approaches.
- Understand the role played by gender, race, class, and ethnicity (where appropriate) in language, literature, and literacy.
- Demonstrate the ability to write clear analytical essays incorporating both primary textual evidence and secondary scholarly and critical sources.

### 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 ENGL 1100, Freshman Composition; ENGL 1110, Freshman Composition for International Students; and ENGL 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

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
- 4931, English Women Writers, 1300-1750

**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
- 4934, Austen and the Brontës
- 4935, Women Heroes and Romantic Tales

**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
- 4937, Irish and Irish-American Women Writers
- 4938, American Women Poets of the 20<sup>th</sup>/21<sup>st</sup> Centuries

**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
- 4910, Studies in African/African American Literature Criticism, and Diaspora
- 4920, Major Works of European Fiction
- 4930, Studies in Gender and Literature
- 4932, Female Gothic
- 4933, Female Novel of Development
- 4936, Tales of the Islamic East
- 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 ENGL 2310 or consent of the instructor as a prerequisite for all courses in Areas 1-4 and ENGL 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 ENGL 2710 and ENGL 2720 or consent of the instructor are prerequisites for ENGL 4650. All survey courses (ENGL 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:
  - ENGL 1100, Freshman Composition, may be counted.
  - ENGL 3090, Practical Criticism: Writing about Literature, is required.
  - ENGL 4880/SEC ED 4880, Writing for Teachers, is required.

Recommended courses include creative writing, journalism, and business writing.

- 2) English language requirements
  - a. ENGL 2810, Traditional Grammar students with sufficient background may gain exemption from the ENGL 2810 requirement by passing the English-

Education Test of Basic Grammar. This test may be taken only twice. Certification candidates must pass ENGL 2810 or the Test of Basic Grammar before applying for student teaching.

- b. ENGL 4810, English Grammar
- c. ENGL 4800, Linguistics, or  
ENGL 4820, History of the English Language

#### **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, ENGL 1100, Freshman Composition, and ENGL 1110, Freshman Composition for International Students. ENGL 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 UMSL. No more than 3 hours taken on a satisfactory/unsatisfactory basis may be counted toward the 18-hour minimum.

#### **Professional Writing Certificate**

Students earn the Professional Writing Certificate by completing 18 hours in selected writing courses with a grade point average of 3.0 or better. Twelve of the 18 hours must be taken at the University of Missouri-St. Louis. Courses may not be taken on a satisfactory/unsatisfactory basis.

**MEDIA ST 2212**, Broadcast Writing and Reporting  
**MEDIA ST 2217**, Script Writing for Business and Industry  
**ENGL 2810**, Traditional Grammar  
**ENGL 2030**, Poetry Writing  
**ENGL 2040**, Short Story Writing  
**ENGL 2050**, Play Writing  
**ENGL 2060**, Introduction to the Writing of Poetry and Fiction  
**ENGL 2080** or **MEDIA ST 2080**, Advertising Copywriting  
**ENGL 2120**, Topics in Writing  
**ENGL 3030**, Intermediate Poetry Writing  
**ENGL 3040**, Intermediate Fiction Writing  
**ENGL 3090**, Practical Criticism: Writing About Literature  
**ENGL 3100**, Advanced Expository Writing  
**ENGL 3110**, Advanced Expository Writing for International Students  
**ENGL 3120**, Business Writing  
**ENGL 3130**, Technical Writing  
**ENGL 3140** or **MEDIA ST 3214**, News Writing  
**ENGL 3150**, Feature Writing  
**ENGL 3160**, Writing in the Sciences  
**ENGL 3180**, Reporting  
**ENGL 3280** or **MEDIA ST 2228**, Writing for Public Relations  
**ENGL 4130**, Advanced Poetry Writing  
**ENGL 4140**, Advanced Fiction Writing  
**ENGL 4160**, Special Topics in Writing  
**ENGL 4810**, English Grammar  
**ENGL 4850**, Topics in Teaching Writing  
**ENGL 4860**, Editing  
**ENGL 4870**, Advanced Business and Technical Writing  
**ENGL 4880**, Writing for Teachers  
**ENGL 4890**, Writing Internship (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.)  
**ENGL 4892**, Independent Writing Project  
**ENGL 4985**, Editing Litmag  
**HONORS 3100**, Writing the City

#### **Creative Writing Certificate**

Students earn the Certificate in Writing by completing 18 hours in selected writing courses with a grade point average of 3.0 or better. The creative writing emphasis focuses the students' efforts toward producing original fiction or poetry and can include other literary endeavors such as writing creative nonfiction, editing, feature writing, and copywriting. The specific requirements for the Creative Writing emphasis are listed below.

Courses for the certificate should be chosen with the guidance of the Writing Certificate Coordinator. If the student elects to complete English 4890 as one of the courses for the certificate, he or she should schedule a meeting with the coordinator to make arrangements for the internship.

When the student has completed requirements for the certificate, the coordinator will notify the university registrar



and the college from which the student will graduate. Upon the student's graduation, completion of the Certificate in Writing will be noted on the official transcript and a certificate will be mailed to the student's residence. Students who have graduated before completing the Certificate in Writing will receive the certificate in the mail and will have the certificate entered on their official transcripts.

To receive this certificate, the student must take 18 hours chosen from the courses listed below. Students must take at least two of the following: 3030, 3040, 4130, 4140, 4895, 4890 and at least one must be a 4000-level course.

2000-Level Courses (Students may take no more than two 2000-level courses)

ENGL 2030, Beginning poetry writing workshop (CW)  
ENGL 2040, Beginning fiction writing workshop (CW)  
ENGL 2330, Introduction to poetry (Lit)  
ENGL 2340, Introduction to fiction (Lit)  
ENGL 2350, Introduction to drama (Lit)

#### Creative Writing and Literature Courses

ENGL 3030, Poetry workshop: lyric and form  
ENGL 3040, Fiction workshop: narrative structure  
ENGL 3090, Practical criticism: writing about literature  
ENGL 3100, Advanced expository writing  
ENGL 4130, Advanced poetry writing  
ENGL 4140, Advanced fiction writing  
ENGL 4160, Special topics in writing  
ENGL 4890, Writing Internship  
ENGL 4892, Independent Writing Project  
ENGL 4895, Editing Litmag

Professional Writing Courses (Students are encouraged to take at least one professional writing course, but no more than two.)

ENGL 2080, Advertising Copywriting (or MEDIA ST 2080)  
ENGL 3150, Feature Writing (or MEDIA ST 3150)  
ENGL 4860, Editing

This capstone course may be 4895, 4890, 4140, or 4130. If 4890 is used, it will be an internship in literary publishing, feature writing, or advertising copywriting. To use 4130 or 4140, the student must obtain the teacher's permission and do extra work in the course. The editing Litmag course, 4895, may also be used as the final course for this certificate.

#### 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, Writing Internship

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

To enter the graduate program in English a candidate must satisfy the requirements both of the Graduate School and the Department of English. A candidate should have a bachelor's degree, with at least 18 hours in English above the freshmen level, 12 of which must be in literature.

Normally, only students with a grade point average of 3.0 in undergraduate English courses and an overall undergraduate average of 2.75 will be considered. Though the English department welcomes scores from the Graduate Record Aptitude Exam and letters of recommendation, it does not require either of these. (Students applying for Teaching Assistantships, please see "Financial Aid and Teaching Assistantships.")

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 and a sample of expository prose. 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, 24 hours of which must be in 5000-level courses. Twelve 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 ENGL 5000 and 18 hours in composition courses (including ENGL 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 UMSL. 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:**

- ENGL/SEC ED 4880, "Writing for Teachers" or an equivalent course in teaching writing
- Coursework or competency in basic computer application.

**Required Core Courses (12 semester hours)**

- ENGL 4850/TCH ED 5850, Topics in the Teaching of Writing (designated topics, 3 sem. hrs.)
- ENGL 6880/SEC ED 6880, Gateway Writing Project (6 sem. hrs.)
- TCH ED 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:**

- ENGL 5800, Modern Linguistics
- ENGL 5840, Theories of Writing
- ENGL 5860, Writing/Reading Theory
- ENGL 5870, Composition Research
- ENGL 5890, Teaching College Writing

**Suggested electives applicable to an M.Ed. in Elementary or Secondary Education**

- ELE ED 6387, Literacy Acquisition and Learning for Urban Students
- SEC ED 6430, Problems in Teaching English in Sec. School
- ELE ED 6432, Problems & Research in Language Arts
- ELE 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 UMSL 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.

**ENGL 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. **ENGL 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 UMSL 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, 1150, 1160, 1170, 1200, 1700, 2240, 2250, 2280, 2310, 2320, 2330, 2340, 2350, 2710, 2720, 3800, 4060, 4920, 4260, 4270, 4030, 4050, 4320, 4340, 4350, 4370, 4380, 4420, 4450, 4510, 4520, 4540, 4560, 4580, 4610, 4620, 4640, 4650, 4750, 4770, 4760, 4740, 4930, 4950. SPECIAL OFFERINGS: 3500, 4885, 4888.

**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 ENGL 1100 in all university requirements.

**2030 Beginning Poetry Writing Workshop (3) [C,H]**

Prerequisite: ENGL 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 ENGL 2060 may not take ENGL 2030 for credit. The course counts toward the Certificate in Writing.

**2040 Beginning Fiction Writing (3) [C,H]**

Prerequisite: ENGL 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 ENGL 2060 may not take ENGL 2050 for credit. The course counts toward the Certificate in Writing.

**2080 Advertising Copywriting (3)**

Same as MEDIA ST 2080. To give students a hands-on approach for writing advertising material for print and broadcast against tight deadlines in a professional setting.

**2120 Topics in Writing (3) [C,H]**

Prerequisite: ENGL 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: ENGL 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: ENGL 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: ENGL 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: ENGL 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: ENGL 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: ENGL 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: ENGL 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 MEDIA ST 3214 Prerequisite: ENGL 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)**

Same as MEDIA ST 3150. Prerequisite: ENGL 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: ENGL 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)**

Same as MEDIA ST 3180. Prerequisite: ENGL 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: ENGL 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: ENGL 3100 or equivalent; ENGL 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: ENGL 3100 or equivalent; ENGL 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: ENGL 3100 or equivalent. Special topics in writing that are not covered in other 3000-level English courses. Since the topics of ENGL 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: ENGL 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: ENGL 3100 or equivalent as judged by instructor; ENGL 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: ENGL 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 Writing Internship (3)**

Prerequisite: ENGL 3100 or its equivalent as judged by instructor. Course limited to students who are completing certificates in writing. May be taken concurrently with the final course in the certificate sequence. Students work in a supervised internship to complete professional writing assignments. Special consent form required.

**4892 Independent Writing Project (3)**

Prerequisites: ENGL 3100 or 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

individually with an instructor to complete an extensive creative writing or critical analysis writing project. This course is available on a limited basis only with the approval of the Coordinator and faculty sponsor. Special consent form is required.

**4985 Editing *Litmag* (3)**

Prerequisites: ENGL 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 TCH ED 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: ENGL 3100; majors, ENGL 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: ENGL 3100; majors, ENGL 3090; ENGL 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: ENGL 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 GERON 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 GERON 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 HS 1175, HIST 1175, MUSIC 1175, PHIL 1175, TH DAN 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.

**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.

**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: ENGL 2320; ENGL 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: ENGL 2320; ENGL 3090, prerequisite or co-requisite. 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.

**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) ENGL 3090, (Non-majors) ENGL 3100 or consent of instructor. An examination of the roots of the African American literary tradition with emphasis on 19<sup>th</sup> 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) ENGL 3090 (Non-majors) ENGL 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 19<sup>th</sup> 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.

**4900 Seminar (3)**

Prerequisite: Consent of instructor. Intensive reading, critical discussion, and writing on topics to be announced

each semester. Since the topics of ENGL 4900 may change each semester, the course may be repeated for credit if the topics are substantially different. Enrollment limited to twelve students.

**4910 Studies in African/African American Literature, Criticism, and Diaspora (3)**

Prerequisites: (Majors) ENGL 3090, (Non-majors) ENGL 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 Memoir, 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 Proust, read in translation.

**4930 Studies in Gender and Literature (3)**

Same as WGST 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 WGST 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 WGST 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 18<sup>th</sup> 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 WGST 4933. The course covers the development of the female *Bildungsroman* from the late 18<sup>th</sup> 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 Brontës (3)**

Same as WGST 4934. This course covers the novels of the major 19<sup>th</sup> century British writers Jane Austen and the three Brontë 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 Brontës, along with the biographical, cultural, philosophical, and religious contexts of their work.

**4935 Women Heroes and Romantic Tales (3)**

Same as WGST 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 WGST4936. 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 WGST 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 21<sup>st</sup> century.

**4938 American Women Poets of the 20<sup>th</sup>/21<sup>st</sup> Centuries (3)**

Same as WGST4938. Introduction to American women poets since 1900: anarchists, Imagists, Harlem formalists, white lyricists, modernists (Ridge, H.D., Dunbar-Nelson, Millay, Stein); mid-century giants (Ruckeyser, 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: ENGL 3100 or for English Major, ENGL 2320, ENGL 2720, and ENGL 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 20<sup>th</sup> 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.

**5040 Feminist Critical Theory (3)**

Same as WGST 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.

**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.

**5940 Seminar in Gender and Literature (3)**  
Same as WGS 5940. Gender studies in literature of different periods, types, and genres; satisfies area requirement (1-6) appropriate to its period, national literature, and genre.

**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/ENGL 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 ENGL 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  
**Sheridan Wigginton**, Assistant Professor,  
Spanish and Education  
Ph.D., University of Missouri-Columbia  
**Deborah Baldini**, Teaching Professor, Spanish  
Ph.D., University of Missouri-St. Louis  
**Anne-Sophie Blank**, Associate Teaching Professor  
French  
M.A., Washington University  
**Martha Caeiro**, Associate Teaching Professor,  
Spanish  
M.A., Washington University  
**Donna Cays**, Associate Teaching Professor,  
Spanish  
M.A., Saint Louis University  
**Elizabeth Eckelkamp**, Associate Teaching Professor,  
Japanese  
M.A., Washington University  
**Nancy Mayer**, Associate Teaching Professor, ESL  
M.A.T., Webster University  
**Denise Mussman**, Associate Teaching Professor, ESL  
M.A., University of Illinois-Chicago  
**Margaret B. Phillips**, Associate Teaching Professor, Latin  
Ph.D., Saint Louis University  
**Kimberley Sallee**, Associate Teaching Professor, Spanish  
M.A., University of New Mexico  
**Sandra Trapani**, Associate Teaching Professor, French  
M.A., University of Missouri-Columbia  
**Susan Yoder-Kreger**, Associate Teaching Professor,  
Spanish  
M.A., University of Virginia, Charlottesville  
**Maria Teresa Balogh**, Assistant Teaching Professor,  
Spanish  
M.A., Southern Illinois University, Carbondale, MFA,  
University of Missouri - St. Louis  
**Suzanne Hendrickson**, Assistant Teaching Professor,  
French  
Ph.D., Washington University

**Elizabeth Landers**, Assistant Teaching Professor,  
French, Director of Language Programs  
M.A., Washington University  
**Maria Snyder**, Assistant Teaching Professor, French and  
German  
Ph.D., Washington University  
**Luis Castafieda**, Lecturer  
M.A., University of Colorado  
**Kersten Horn**, Lecturer, German  
M.A., University of Texas, Austin  
**Fushun Le**, Lecturer, Chinese  
M.A., Iowa State University  
**Rosalina Mariles**, Lecturer, Spanish  
M.S., Southern Illinois University, Edwardsville

### 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 courses in English as a Second Language, Ancient Greek, Arabic, Chinese, 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 appear later in this section.

The department maintains a language resource center where books, journals, magazines, and other foreign language regalia are available to students, along with audiovisual and computer materials.

#### Cooperative Study

Courses in other languages are available to University of Missouri-St. Louis students through Washington University, Saint Louis University, Harris-Stowe State College, and SIU-Edwardsville. For information, consult the UMSSL 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 UMSL 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 UMSL Summer Abroad scholarships that will partially finance their summer studies abroad. Other scholarship money is available for students with advanced standing in the language. 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 UMSL 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:

**SPANISH 2110**, Spanish Literature in Translation

**HIST 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

#### One of the following two:

**2171**, Spanish Conversation and Pronunciation or

**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

**HIST 4355**, History of Spain

**HIST 4371**, History of Latin America: to 1808

**HIST 4372**, History of Latin America: Since 1808

**POL SCI 3253**, Political Systems of South America

**POL SCI 3254**, Political Systems of Mexico, Central America, and the Caribbean

### Learning outcomes for Majors

The Bachelor of Arts in French and Bachelor of Arts in Spanish prepare students to become knowledgeable about the cultures and cultural patterns that identify the speakers of these languages, and to study the literatures that have been

recorded by these peoples as their reflections on values and views of the human condition.

Upon completion of the lower division courses, students will:

- Speak, understand, read, and write the foreign language well enough to function competently in everyday situations.
- Appreciate foreign cultures and cultural diversity
- Improve understanding of their own language and culture by comparing it to the target language and culture
- Be able to interact appropriately with native speakers of the target language

Upon completion of the upper division courses, students will:

- Communicate effectively in the target language
- Reflect critically on the literature and values of other cultures
- Have knowledge about social, political, and philosophical ideas in their cultural context
- Demonstrate a solid foundation for graduate study in the foreign language or a professional career in applied or related fields

### 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 University of Missouri-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 UMSL abroad. The Center for International Studies and the Department of Foreign Languages and Literatures cooperate in offering the Certificate.

1) Foreign language study at UMSL

Students must select one of the following languages and complete the required courses at UMSL. 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 UMSL 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 their 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 UMSL. 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

**3215**, 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 institutions(s) before the start of the fall 2002 semester must meet the general education requirements stipulated in the UMSL 2001-2002 Bulletin. The following courses fulfill the Humanities breadth of study requirements as described in that Bulletin

FRENCH: 2101, 2102, 2150, 2180, 3211, 3280, 3281, 4342, 4390. GERMAN: 2101, 2150, 2180, 3201, 3202, 3210, 4311, 4315, 4320, 4345, 4397, 4398, 4399.

ANCIENT GREEK: 2101. MODERN GREEK: 2101.

JAPANESE: 2101. LATIN: 2101. SPANISH: 2101, 2150, 2180, 3210, 3211, 3280, 3281, 4310, 4315, 4320, 4321, 4325, 4330, 4331, 4351, 4399.

**2192 Service Learning in Foreign Languages (1-3)**

Prerequisites: Permission of course instructor and concurrent enrollment in a Foreign Language course (Arabic, Chinese, English as a Second Language, French, German, Greek, Japanese, Latin or Spanish) at the 2000-level or higher. Taken concurrently with a qualifying foreign language course, students will participate in a community service experience that is academically integrated into the students' course of study. Community service in a local or international community organization, as approved by the course instructor, is required. Determination of the type of community service to be conducted and the number of hours required will be made in consultation with the instructor. May be repeated for a maximum of 6 credit hours.

**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.

**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: TCH ED 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.

**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 FGN LANG 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.

**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 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 1002 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.

**1005 Chinese Calligraphy and Writing in East Asia (1.0)**

Same as JAPAN 1005. This course is an introduction to the art of Chinese calligraphy and the history and basic features of the writing systems in East Asia (Chinese, Japanese, Korean, Mongolian, Tibetan, etc.). Emphasis is placed on the Chinese script and writing Chinese characters correctly with a calligraphy brush and ink. Students practice writing basic strokes and characters and creating their own calligraphic works.

**2101 Intermediate Chinese I (5)**

Prerequisite: CHINESE 1002 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.

**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 and integrated use; and other grammatical structures.

**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.

**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.

**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 ENGL 1100 or ENGL 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.

**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. 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.

**4390 Special Readings (1-3)**

Prerequisites: Consent of instructor. Independent study through readings, reports and conferences.

**4603 Research Paper Writing Workshop for International Students (2)**

Prerequisites: ESL 4303 or ESL Placement Exam. Minimum TOEFL score of 500. Organized as a workshop, this class focuses on the process of research paper writing, from choosing a topic to the final research paper. Class activities include library resources for research, applying critical thinking skills to synthesizing source material, avoiding plagiarism, and using appropriate MLA or APA format. Editing for grammatical accuracy and word choice is included as necessary. Class enrollment is limited to 12 students.

**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.

**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.

**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)**

This course analyzes and discusses major figures, works, or movements in the literature of Europe and their relevance to our own age. The department announces topic in advance. This course 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 2102 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 2102 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 2102 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. Analyses 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.

**1002 German II (5)**

Prerequisite: GERMAN 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.

**2101 Intermediate German Language and Culture (3)**

Prerequisite: GERMAN 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.

**2150 European Literature in Translation: Special Topics (3)**

This course analyzes major figures, works, or movements in the literature of Europe and their relevance to our own age. Topic announced in advance by the department. This course does not count toward major in German.

**2170 Composition and Conversation (3) [C, H]**

Prerequisite: GERMAN 2101 or equivalent. Emphasis will be placed on the development of speaking and writing skills in German.

**2175 Business German (3)**

Prerequisites: GERMAN 2101 or equivalent. Students will continue to expand their German skills for realistic use in the context of the German language business world. Particular emphasis is placed on business-related vocabulary, speaking skills and correspondence. No previous business experience necessary.

**2180 Readings in German (3) [C, H]**

Prerequisite: GERMAN 2101 or equivalent. May be taken concurrently. Further development of language skills through readings and discussions of literary texts.

**2190 Special Readings (1-3)**

Prerequisites: GERMAN 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: GERMAN 3201 or equivalent. Reading and critical analysis of selected German Novellen and dramas.

**3208 Intermediate Composition and Conversation (3)**

Prerequisite: GERMAN 2170 or equivalent. Emphasis on speaking and writing German.

**3210 German Culture and Civilization (3)**

Prerequisite: GERMAN 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.

**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.

**4390 Special Readings (1-3)**

Prerequisite: Consent of instructor. Independent study through readings, reports, and conferences.

**Ancient Greek**

**1001 Ancient Greek I (5)**

Study of grammar, syntax, and vocabulary, accompanied by readings of simple prose selections.

**1002 Ancient Greek II (5)**

Prerequisite: GRK ANC 1001 or equivalent. The study of vocabulary, grammar, and syntax is continued from Ancient Greek 1001, including readings and discussion from selected classical authors.

**2101 Intermediate Ancient Greek Language and Culture (3)**

Prerequisite: GRK ANC 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: GRK ANC 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: GRK MOD 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: GRK MOD 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: GRK MOD 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.

**2152 A Brief Introduction to Greek and Latin in English Today (1)**

Same as LATIN 2152. This outline course is designed to enrich the student's general liberal arts vocabulary as well as to improve mastery of terms used in law, medicine, and science. The emphasis is 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 (particular English). This course is not to be taken in addition to GRK ANC 2151.

**2190 Special Readings (1-3)**

Prerequisite: GRK MOD 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: JAPAN 1001 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: JAPAN 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.

**1005 Chinese Calligraphy and Writing in East Asia (1.0)**

Same as Chinese 1005. This course is an introduction to the art of Chinese calligraphy and the history and basic features of the writing systems in East Asia (Chinese, Japanese, Korean, Mongolian, Tibetan, etc.). Emphasis is placed on the Chinese script and writing Chinese characters correctly with a calligraphy brush and ink. Students practice writing basic strokes and characters and creating their own calligraphic works.

**2101 Intermediate Japanese I (5)**

Prerequisite: JAPAN 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: JAPAN 2101 or equivalent. Continuation of JAPAN 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: JAPAN 2102 or consent of the department. Independent study through readings, reports, and conferences.

**3201 Intermediate Japanese III (3)**

Prerequisites: JAPAN 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: JAPAN 3201 or equivalent. Continuation of JAPAN 3201.

**3290 Special Readings (1-3)**

Prerequisites: JAPAN 2190 or consent of instructor. Independent study through readings, reports and conferences.

**Latin**

**1001 Latin I (5)**

A study of Latin grammar, syntax, and vocabulary, accompanied by reading selections from literary texts.

**1002 Latin II (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 GRK ANC 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.

**2152 A Brief Introduction to Greek and Latin in English Today (1)**

Same as GREEK 2152. This online course is designed to enrich the student's general liberal arts vocabulary as well as to improve mastery of terms used in law, medicine, and science. The emphasis is 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). This course is not to be taken in addition to GRK ANC 2151.

**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.

**1002 Spanish II (5)**

Prerequisite: SPANISH 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.

**2101 Intermediate Spanish Language and Culture (3)**

Prerequisite: SPANISH 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.

**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 SPANISH 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)**

This course analyzes and discusses major figures, works, or movements in the literature of Europe and their relevance to our own age. The department announces topic in advance. This course does not count toward major in Spanish.

**2171 Spanish Conversation and Pronunciation (3) [C, H]**

Prerequisite: SPANISH 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: SPANISH 2101 or equivalent. Emphasis in developing the capacity and the ability to write in Spanish.

**2175 Commercial Spanish (3)**

Prerequisite: SPANISH 2101 or equivalent. Students will continue to expand their skills in Spanish within a real-world framework related to business with an emphasis placed on business-related vocabulary and improved public speaking skills in Spanish. No previous business experience is necessary, although this course is perfect for those students pursuing a major or minor in Business, International Business, Marketing, Communication or any other business-related field. This course may not be taken for credit toward a major, but will count toward a minor in Spanish.

**2180 Readings in Spanish (3) [C, H]**

Prerequisite: SPANISH 2101 or equivalent. Development of language skills through reading and discussion of a variety of texts.

**2190 Special Readings (1-3)**

Prerequisites: SPANISH 2101 and consent of department. Independent study through readings, reports, and conferences.

**3200 Syntax of the Spanish Language (3)**

Prerequisite: SPANISH 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.

**3210 Hispanic Culture and Civilization: Spain (3)**

Prerequisite: SPANISH 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.

**3215 Practicum in Spanish (3)**

Prerequisites: 2 of the following: SPANISH 2171, 2172, 2180 or equivalent, or consent of the instructor. This course introduces students to the Hispanic/Latino cultures in the US through community service and academic work. Students will perform a minimum of 20 hours per semester of supervised fieldwork in local organizations that serve area Hispanics. Students will study several issues related to the community they serve, will reflect on their field experience, and will connect their field experience with class readings and discussions. Required weekly seminar accompanies the field experience. Designed for majors of various disciplines. Placement at the agencies is relevant to the enrolled student's major, dependent upon availability of resources. To ensure proper placement, students are required to contact the instructor at least one month before the beginning of the semester.

**3260 Spanish for Business (3)**

Prerequisites: SPANISH 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: SPANISH 2171 or consent of department. Emphasis will be placed upon the further development of oral skills in Spanish.

**3280 Introduction to Hispanic Literature: Spain (3)**

Prerequisite: SPANISH 2171, 2172, 2180 (2 of the 3 courses) or equivalent and SPANISH 3200. Study of selected texts of Spanish writers from the Middle Ages to the present and the historical, cultural, and political factors, which influenced their writing. Required of Spanish majors. SPANISH 2180 is recommended for prerequisite.

**3281 Introduction to Hispanic Literature: Spanish America (3)**

Prerequisite: SPANISH 2171, 2172, 2180 (2 of the 3 courses) or equivalent and SPANISH 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. Spanish 2180 is recommended for prerequisite.

**3290 Special Readings: Spanish (1-3)**

Prerequisite: Consent of department. Independent study through readings, reports, and conferences.

**4172 Introduction to Creative Writing in Spanish (3)**

Prerequisites: SPANISH 3200 plus two additional 3000 level courses or consent of instructor. This course will be presented in two parts. First, students will read literature samples and receive theory for creative writing; and second, they will explore their own creativity by writing poetry, essays and short stories through exercises and examples given by instructors.

**4300 Advanced Spanish Grammar (3)**

Prerequisite: SPANISH 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: SPANISH 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 SPANISH 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: SPANISH 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: SPANISH 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: SPANISH 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: SPANISH 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: SPANISH 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: SPANISH 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: SPANISH 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 or other works of Cervantes.

**4331 Picaresque and Satirical Prose (1550-1650) (3)**

Prerequisite: SPANISH 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: SPANISH 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: SPANISH 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: SPANISH 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: SPANISH 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: SPANISH 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: SPANISH 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

**Andrew J. Hurley**, Professor, Chairperson  
Ph.D., Northwestern University  
**John R. Gillingham**, Curators' Professor  
Ph.D., University of California, Berkeley  
**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  
Ph.D., Duke University  
**Jerry M. Cooper**, Professor Emeritus  
Ph.D., University of Wisconsin  
**Paul Corby Finney**, Professor Emeritus  
Ph.D., Harvard University  
**Louis Gerteis**, Professor  
Ph.D., University of Wisconsin  
**John R. Gillingham**, Professor  
Ph.D., University of California, Berkeley  
**Steven C. Hause**, Professor Emeritus  
Ph.D., Washington 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-White**, 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**, Associate Professor  
Ph.D., Washington University  
**Peter Acsay**, Associate Teaching Professor  
Ph.D., Saint Louis University  
**Robert Archibald**, Adjunct Professor  
President, Missouri Historical Society  
Ph.D., University of New Mexico  
**John Hoover**, Adjunct Professor  
Director of St. Louis Mercantile Library  
M.A., University of Missouri-Columbia  
**Robert D. Ubriaco**, Adjunct Assistant Professor  
Ph.D., University of Illinois

### 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 Metropolitan, Regional, National, and Transnational 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:

**HIST 1001**, American Civilization  
**HIST 1002**, American Civilization  
**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

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

**HIST 1001**, American Civilization to 1865  
**HIST 1002**, American Civilization 1865 to present  
**HIST 1003**, African-American History  
**HIST 1004**, The History of Women in the United States

#### Plus two of the following:

**HIST 1030**, The Ancient World  
**HIST 1031**, Topics in European Civilization: The Emergence of Western Europe to 1715  
**HIST 1032**, Topics in European Civilization: 1715 to the Present

#### Plus:

**Non-Euro/American survey**: One 3-hour course

#### Courses 2000-3999

One course in United States history  
One course in European history  
One course in Non-Euro-American history  
**HIST 4001**, Special Readings (one credit hour)  
**HIST 4004**, Senior Seminar

Three additional 2000 or 3000 level courses

#### Courses 4000-4004

**HIST 4001**, Special Readings (one credit hour)  
**HIST 4004**, Senior Seminar

#### 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.

### Learning Outcomes

The following learning outcomes are anticipated in the successful completion of a Bachelor of Arts in History

**Communication**: Write clearly and coherently and listen to oral presentations, summarize the arguments made and discuss them in the context of other oral presentations or conversations.

**Valuing/Ethics/Integrity**: Understand and articulate the diversity of identities and political and social systems that have shaped human behavior over time. Understand and articulate one's own identity in terms of race, gender and class, and to locate that identity in the wider world, both past and present.

**Critical Thinking**: Listen to oral presentations, summarize the arguments made and discuss them in the context of other oral presentations or conversations. Accurately summarize an argument and discuss it in the context of other arguments.

**Content Knowledge**: Embedded in Other Outcomes

### Minor in History

Students may minor in history by taking 18 hours of history courses as follows:

- 1) One course numbered 1001-1004 in each of the following areas: United States history, European history, and Non-Euro-American history
- 2) One course numbered 2000- 3999 in each of the following areas: United States history, European history (including World 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 HIST/Sec/Ed 4014,

United States and/or state government, 6 hours including Pol Sc 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 (HIST 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:

**HIST 1001**, American Civilization

**HIST 1002**, American Civilization

**HIST 1003**, African American History

**HIST 1004**, The History of Women in the United States

Plus two of the following:

**HIST 1030**, The Ancient World

**HIST 1031**, Topics in European Civilization: Emergence of Western Europe to 1715

**HIST 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

**HIST 4001**, Special Readings (1)

**HIST 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

Three courses in three of the following four fields:

Metropolitan History; Regional History; National History; Transnational History (9 hours)

**Courses 6000 level** (selected from the four 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 5000-5999 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 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 separate Master of Arts degree programs for graduate study, the Master of Arts in History and the Master of Arts in History with Concentration in Museum Studies. These programs 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 (see "Thesis Option", below); the second emphasizes breadth of historical knowledge acquired through graduate course work and the writing of research papers (see "Research Option" below). Both paths include a core of substantive courses in history (see "Core" below) to which the student adds either the 6 credits of the Thesis Seminar or additional two five credit courses of research.

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.

For students enrolled in the History M.A. program throughout the Academic Year 2006-07, the department offers study in European history, United States history, East Asian history, Latin American history, African history and African American History. Beginning in Academic Year 2007-08 the History M.A. program offers study in Metropolitan History, Regional History, National History and Transnational History. Students should consult with the Director of Graduate Studies to be sure that they have properly selected their fields of study.

#### 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 supervising professor, who serves as the Thesis committee chair. 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. The candidate who failed the translation test, has the option to repeat the test until he or she passes the test. 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 the above mentioned 2 credit hours of supplementary work on a substantial research paper), in addition to the 26 Core credits. 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 ANTHRO 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 ANTHRO or ART HS 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 ANTHRO 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, 1061, 1062, 1064, 2007, 2008, 2219, 2800, 3000, 3001, 3003, 3004, 3005, 3006, 3011, 3012, 3021, 3022, 3031, 3032, 3041, 3043, 3045, 3050, 3071, 3073, 3081, 3083, 3084, 3085, 3086, 3092, 3093, 3094, 3101, 3102, 3103, 3201, 3202, 3301, 3302, 3303, 3304, 3322, 4001, 4004.

The following courses fulfill the Cultural Diversity [CD] requirement; 1041, 1042, 1051, 1061, 1062, 1064, 3032, 3101, 3102, 3103, 3201, 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 WGST 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.

#### **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.

**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 HS 1175, ENGL 1175, MUSIC 1175, PHIL 1175, TH DAN 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 WGST 2012, SOC WK 2102, and SOC 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 ANTHRO 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.

**2291 War in Ancient Greece and Today: From the Trojan War to the War in Iraq (3)**

Lectures and discussions on selected topics from the Trojan War to the War in Iraq.

**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.

**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.

**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 19<sup>th</sup> and 20<sup>th</sup> 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 WGST 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 WGST 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 WGST 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.

**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.

**3043 History of Crime and Justice (3)**

Prerequisite: Junior standing or consent of the instructor. Same as CRIMIN 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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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 19<sup>th</sup> and 20<sup>th</sup> 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 WGST 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 WGST 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 WGST 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.

**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.

**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.

**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.

**5061 Advanced Mexican American (3)**

Prerequisites: Graduate Standing. This course explores Mexican American and Chicano history from the 17<sup>th</sup> 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.

**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.

**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.

**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.

**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.

**5096 Advanced Modern Britain (3)**

Prerequisites: Graduate standing. An advanced study of the economic, social, and political development of modern Britain, 1750 to present.

**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 20<sup>th</sup>-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.

**5140 Topics in Metropolitan History (3)**

Prerequisites: Graduate Standing. Lectures and discussions on selected topics in metropolitan history.

**5141 Topics in Regional History (3)**

Graduate standing. Lectures and discussions on selected topics in regional history.

**5142 Topics in National History (3)**

Prerequisites: Graduate standing. Lectures and discussions on selected topics in national history.

**5143 Topics in Transnational History (3-5)**

Prerequisites: Graduate standing and consent number. Lectures and discussion on selected topics and areas in transnational history.

**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.

**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.

**5772 Advanced Studies of Aviation in American Life**

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, films, advertising, and literature, the significance of the space race, and the role of aerial weapons of war.

**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. HIST 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 (3-5)**  
Prerequisites: Graduate standing and consent number. 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 number. Directed readings and writing on selected topics and areas in European history since 1715.

**6113 Readings in East Asian History (3-5)**  
Prerequisites: Graduate standing and consent number. Directed readings and writing on selected topics and areas in East Asian history.

**6114 Readings in Latin American History (3-5)**  
Prerequisites: Graduate standing and consent number. Directed readings and writing on selected topics and areas in Latin American history.

**6115 Readings in African History (3-5)**  
Prerequisites: Graduate standing and consent number. 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.

**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 ANTHRO 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 ANTHRO 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 ANTHRO 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 ANTHRO 6138. Research and writing/exhibit development on a selected topic.

**6140 Readings in Metropolitan History (3-5)**

Prerequisites: Graduate standing and consent number. Directed readings and writing on selected topics and areas in metropolitan history.

**6141 Readings in Regional History (3-5)**

Prerequisites: Graduate standing and consent number. Directed readings and writing on selected topics and areas in regional history.

**6142 Readings in National History (3-5)**

Prerequisites: Graduate standing and consent number. Directed readings and writing in selected topics and areas in national history.

**6143 Readings in Transnational History (3-5)**

Prerequisites: Graduate standing and consent number. Directed readings and writing on selected topics and areas in transnational history.

**7110 Doctoral Proseminar in Regional History (3)**

Prerequisites: Consent of instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

**7112 Doctoral Research Seminar in Regional History (3)**

Prerequisites: Consent of instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

**7120 Doctoral Proseminar in National History (3)**

Prerequisites: Consent of instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

**7121 Doctoral Research Seminar in National History (3)**

Prerequisites: Consent of instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

**7130 Doctoral Proseminar in Transnational History (3)**

Prerequisites: Consent of instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

**7131 Doctoral Research Seminar in Transnational History (3)**

Prerequisites: Consent of instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

**7201 Doctoral Research Methods Seminar (3)**

Prerequisites: Consent of instructor and advanced graduate standing. Theory based approach to the methods of historical research.

**7202 Dissertation Research Seminar (3)**

Prerequisites: Consent of instructor and advanced graduate standing. Dissertation research and writing on a selected topic in history.

## Department of Mathematics and Computer Science

### Faculty

**Haiyan Cai**, Associate Professor, Chairperson  
Ph.D., University of Maryland  
**Raymond Balbes**, Professor Emeritus  
Ph.D., University of California, Los Angeles  
**Charles Chui**, Curators' Professor  
Ph.D., University of Wisconsin  
**William Connett**, Professor Emeritus  
Ph.D., University of Chicago  
**Richard Friedlander**, Professor, Associate Chairperson  
Ph.D., University of California, Los Angeles  
**Qingtang Jiang**, Professor  
Ph.D., Peking University  
**Wayne L. McDaniel**, Professor Emeritus  
Ph.D., Saint Louis University  
**A. Prabhakar Rao**, Professor  
Ph.D., University of California, Berkeley  
**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  
**Sanjiv K. Bhatia**, Associate Professor  
Ph.D., University of Nebraska-Lincoln  
**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  
**Frederick Wilke**, Associate Professor Emeritus  
Ph.D., University of Missouri-Columbia  
**Shiying Zhao**, Associate Professor  
Ph.D., University of South Carolina  
**Adrian Clingher**, Assistant Professor  
Ph.D., Columbia University  
**Hyung Woo Kang**, Assistant Professor  
Ph.D., KAIST  
**Martin Pelikan**, Associate Professor  
Ph.D., University of Illinois at Urbana-Champaign  
**John Antognoli**, Teaching Professor  
M.S., University of Missouri-St. Louis  
**Shahla Peterman**, Teaching Professor  
M.S., University of Wisconsin-Madison  
**Galina N. Piatnikskaia**, Teaching Professor  
Ph.D., Moscow Physical-Technical Institute  
**Donald E. Gayou**, Associate Teaching Professor  
Ph.D., Iowa State University  
**Michael Schulte**, Associate Teaching Professor  
M.S., Florida Institute of Technology  
**Qiang Sun Dotzel**, Assistant Teaching Professor  
M.A., University of Missouri - St. Louis

**Nazire Koc**, Assistant Teaching Professor  
M.S., Southern Illinois University, Carbondale  
**Emily Ross**, Assistant Teaching Professor  
M.A., Saint Louis University  
**Jennifer Shrensker**, Lecturer  
M.A., Washington University  
**Albert Stanger**, Academic Coordinator and Lecturer  
M.A., University of Missouri - St. Louis  
**Joyce Langguth**, Teaching Associate  
B.S. Ed., Southeast Missouri State University

### 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 (with options in mathematics and in computer science).

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. Students pursuing the B.A. or the B.S. in mathematics will graduate with analytic and writing skills in mathematics and will have knowledge of content in core areas of the subject. They will have been exposed to applications of mathematics and they will possess critical thinking and quantitative skills.

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 this degree will learn current programming practices and paradigms. They will learn the fundamentals of the supporting areas of mathematics and statistics and they will learn how computer

hardware interacts with software. Students will study software development technologies like operating systems and compilers, and will gain knowledge of the theory behind applications like databases and networks.

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. Our graduates will have abilities in the basic areas of algebra and analysis, and a breadth of knowledge in core subjects at the graduate level. They will study at least one area of mathematics or statistics in depth and will understand some of the contemporary research in applied mathematics and statistics. They will develop the ability to prepare and deliver oral and written presentations and the ability to pursue mathematical knowledge independently.

The M.S. degree in computer science emphasizes practical aspects of the field. Our graduates develop expertise in at least one modern programming language. They will possess a breadth of knowledge of core areas in computer science, and will develop depth of knowledge in one area of the subject. They will be prepared to independently learn and adapt new technology and they will develop the ability to read current research in some areas. They will have the capability to prepare and deliver oral and written presentations on topics in computer science.

The Ph.D. in applied mathematics prepares students for a leadership role involving research and development in both industrial and academic settings. Students in this program will develop abilities in the basic areas of algebra and analysis and will possess breadth of knowledge in core subjects at the graduate level. They will study at least one area of mathematics or statistics in depth and will understand contemporary research in applied mathematics and statistics. They will develop the ability to prepare and deliver oral and written presentations, and they will possess the ability to pursue and produce mathematical knowledge independently.

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 the University of Missouri-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. **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 UMSL, and show superior achievement in courses in the mathematical sciences.

**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. **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 UMSL 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 on the department's website. 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 CMP SC 2250, Programming and Data Structures, will be granted credit for CMP SC 1250, Introduction to Computing, once they complete CMP SC 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, Real Analysis 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, Complex Analysis I
- 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, Real Analysis I

4160, Complex Analysis I

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:

1001, Principles of Microeconomics

1002, Principles of Macroeconomics

4100, Introduction to Econometrics

#### 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 computer science courses numbered above 2700 with the exception of CS 3000.

A minimum of two computer science courses numbered above 2700 must be taken in residence in the Department of Mathematics and Computer Science at UMSL.

### 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, excluding 2510. A minimum of two mathematics courses numbered 2000 or above must be taken in residence in the Department of Mathematics and Computer Science at UMSL.

### 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 UMSL.

### 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 University of Missouri.-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 (CMP SC 1250 and CMP SC 2250).
- An object oriented programming language (C++ or Java) (CMP SC 2260).
- A course in data structures (CMP SC 2250).
- A course in assembly language programming, computer architecture, or computer organization (CMP SC 2700).
- A course in design and analysis of algorithms (CMP SC 3130).
- Programming with Unix, including shell scripts and tools (CMP SC 2750).

Students must also have satisfactorily completed mathematics courses equivalent to the following UMSL 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, Real Analysis I
- 4160, Complex Analysis I
- 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 real analysis, complex analysis, 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 (CMP SC 4250, 4760, 5130, 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, CMP SC 4760
- Programming Languages, CMP SC 4250
- Computer Systems, CMP SC 5700
- Software Engineering, CMP SC 5500
- Advanced Data Structures and Algorithms, CMP SC 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 CMP SC 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, 1100, 1102, 1105, \*1150, 1800, 1900, 2000, 2020, 2450, \*2510, 3000, \*\*3520, 4030, 4060, 4100, 4110, 4160, 4230, 4350, 4400, 4450, 4500, 4550, 4620, 4640, 4660, 4670, 4800.

COMPUTER SCIENCE: 1010, 1050, 1250, 2010, 2210, 2250, 2260, 2700, 2710, 2750, 3130, 4010, 4020, 4140, 4250, 4280, 4300, 4410, 4500, 4520, 4610, 4730, 4760, 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.

### 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.

**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 CMP SC 1250 or equivalent. Same as CMP SC 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 CMP SC 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 CMP SC/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.

**4350 Theory of Numbers (3)**

Prerequisite: CMP SC/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: CMP SC/MATH 3000 and MATH 2000 or consent of the department. Introduction to groups, rings, and fields, with emphasis on groups and rings.

**4450 Linear Algebra (3)**

Prerequisites: CMP SC/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: CMP SC/MATH 3000, MATH 2000 and consent of instructor.

**4550 Combinatorics (3)**

Prerequisite: CMP SC/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.

**4620 Projective Geometry (3)**

Prerequisites: CMP SC/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: CMP SC/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: CMP SC/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: CMP SC/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: CMP SC/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.

**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.

**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 4450. 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.

**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 metrization 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.

**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.

**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.

**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.

**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.

**2250 Programming and Data Structures (3)**

Prerequisite: CMP SC 1250. A continuation of CMP SC 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: CMP SC 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: CMP SC 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: CMP SC 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: CMP SC 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.

**3010 Web Programming Techniques (3)**

Prerequisites: CMP SC 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: CMP SC 2250, CMP SC/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: CMP SC 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.

**4140 Theory of Computation (3)**

Prerequisites: CMP SC 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: CMP SC 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: CMP SC 2700, CMP SC/MATH 3000, CMP SC 4250 and 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: CMP SC 2260, CMP SC 2750 and CMP SC 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: CMP SC 2260, CMP SC 2750 and CMP SC 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.

**4500 Software Engineering (3)**

Prerequisites: CMP SC 2260 and CMP SC 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: CMP SC 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.

**4610 Database Management Systems (3)**

Prerequisites: CMP SC 2750 and CMP SC 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.

**4730 Computer Networks and Communications (3)**

Prerequisite: CMP SC 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.

**4760 Operating Systems (3)**

Prerequisites: CMP SC 2750, CMP SC 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.

**4780 Systems Administration and Computer Security (3)**

Prerequisites: CMP SC 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: CMP SC 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: CMP SC 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: CMP SC 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.

**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 CMP SC 4500 and CMP SC 5500.

### **5520 Object Oriented Analysis and Design (3)**

Prerequisites: CMP SC 4500, CMP SC 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 CMP SC 4520 but material is covered at a greater depth and additional projects are required. Credit not granted for both CMP SC 4520 and CMP SC 5520.

### **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.

### **5780 Systems Administration (3)**

Prerequisite: CMP SC 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.

### **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 CMP SC 5880 and CMP SC 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: CMP SC 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: CMP SC 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: CMP SC 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: CMP SC 5400, CMP SC 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.

### **6740 High Performance Computing (3)**

Prerequisites: CMP SC 5740, or Graduate standing and consent of instructor. Looks at the current state of the art in parallel and distributed computing, with emphasis on programming in such environments. Introduction to the state of the art in code optimization and grid computing environments.

### **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 CMP SC 5880 and CMP SC 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 STAT1320, 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 repeated by the interests of the instructor. May be repeated for credit provided different topics are studied.



## Department of Philosophy

### Faculty

**Stephanie Ross**, Professor, Chairperson  
Ph.D., Harvard University  
**Ronald Munson**, Professor  
Ph.D., Columbia University  
**Berit Brogaard**, Associate Professor  
Ph.D., SUNY-Buffalo  
**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  
**Anna Alexandrova**, Assistant Professor  
Ph.D., University of California-San Diego  
**John Brunero**, Assistant Professor  
Ph.D., Columbia University  
**Robert Northcott**, Assistant Professor  
Ph.D., The London School of Economics  
and Political Science  
**Gualtiero Piccinini**, Assistant Professor  
Ph.D., University of Pittsburgh  
**Henry L. Shapiro**, Assistant Professor Emeritus  
Ph.D., Columbia University  
**Andrew Black**, Teaching Professor  
Ph.D., University of Massachusetts-Amherst  
**David J. Griesedieck**, Teaching Professor  
M.A. Princeton University  
**Donald Mertz**, Teaching Professor  
Ph.D., Saint Louis University  
**Waldemar Rohloff**, Assistant Teaching Professor  
Ph.D., University of California-Irvine  
**Irem Kurtsal Steen**, Assistant Teaching Professor  
Ph.D., Syracuse University  
**John E. Clifford**, Associate Professor Emeritus  
Ph.D., University of California-Los Angeles  
**Peter Fuss**, Professor Emeritus  
Ph.D., Harvard University  
**Robert M. Gordon**, Research Professor  
Ph.D., Columbia University

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.

#### Expected Learning Outcomes

1. Acquire basic knowledge of traditional philosophical issues in the western tradition.
2. Develop critical thinking skills based on knowledge of the standards governing logical reasoning.
3. Acquire familiarity with philosophical issues that arise in some other disciplines (e.g., biology, art, education, etc.)
4. Acquire a basic understanding of ethical and social-political principles and their role in resolving

ethical disputes and in evaluating social practices and institutions.

5. Become acquainted with current philosophical debates in the areas of epistemology, metaphysics, and value theory and with the arguments and proposals made to resolve them.

### **Degree Requirements**

#### **Bachelor of Arts in Philosophy**

Students must complete one of the following programs. At least 36, 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**

36 hours of course work are required:

- 1) **PHIL 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, PHIL 4401-4422.

- 3) **Normative Philosophy**

One course from the following:

**PHIL 4430**, Social and Political Philosophy  
**PHIL 4435**, Classical Ethical Theories  
**PHIL 4438**, Recent Ethical Theory  
**PHIL 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:

**PHIL 4440**, Theories of Knowledge  
**PHIL 4445**, Metaphysics

- 5) **Philosophy and Other Disciplines**

Choose one course from the **PHIL 4470 – 4490** sequence.

- 6) **Phil 4491**, Senior Seminar

- 7) Other than the courses specified above, not more than SIX credits at the 1000 level may be used to satisfy the remaining nine hours of coursework requirements 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**

The Double Major is intended for students who plan to complete a major in another discipline as well as in philosophy. Thirty hours of course work in philosophy are required:

- 1) **Logic**

**Phil 3360**, Formal Logic

- 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

- 3) **Core Requirement**

One course from the following:

**PHIL 4440**: Theories of Knowledge  
**PHIL 4445**: Metaphysics

- 4) **4000-level Courses**

A total of nine hours or more at the 4000 level other than courses used to satisfy 2), 3) and 5). *Video courses cannot be used to satisfy course requirements for this program.*

- 5) **PHIL 4491**: Senior Seminar

- 6) **Electives**

Other than the courses above, courses at any level may be used to satisfy the remaining six hours of course requirements for the double major.

#### **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) **PHIL 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 University of Missouri-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

#### Expected Learning Outcomes

1. Acquire advanced knowledge of traditional philosophical issues in the western tradition.
2. Develop critical thinking skills based on knowledge of the standards governing logical reasoning.
3. Acquire familiarity with philosophical issues that arise in some other disciplines (e.g., biology, art, education, etc.)
4. Acquire a basic understanding of ethical principles and their role in resolving ethical disputes
5. Acquire the knowledge and skills required to write a paper identifying a philosophical issue and presenting arguments supporting a thesis for resolving it.

#### Master of Arts in Philosophy

To earn an M.A. in philosophy, students must complete at least 30 hours of graduate-level course work. In addition, students must write a thesis, for which they must take three to six credit hours of Thesis Research. Entering students must demonstrate a competence in logic, either by having passed a relevant course prior to admission or by taking PHIL 5561, Graduate Formal Logic here at UMSL. Students should take PHIL 5400, Proseminar in Philosophy in the first year of residency. At least two thirds of the course work must be completed in residence at UMSL. 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) Two courses (6 credit hours) must be chosen from each of the following four subject areas:
  - Value Theory
  - History of Philosophy
  - Logic/Philosophy of Science
  - Epistemology/Metaphysics/Language

#### 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 30 must be at the upper division level course numbers in the 4000-5999 range (excluding 5495 and 5595). 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 30 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 PHIL 5400, Proseminar in Philosophy: Up to 12 graduate credit hours may be applied simultaneously to both the B.A. and M.A. requirements. In addition to the above coursework, students must also write a thesis, in which case at least three hours must be taken in PHIL 5495 and/or 5595. 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**

#### **A. To be taken in the junior year:**

Choose four courses (12 credit hours) from the following:

- 1) **PHIL 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

**PHIL 4445**, Metaphysics or

**PHIL 4440**, Theories of Knowledge

Two History courses, each at the upper division

One course from the sequence 4470-4490

Choose one of the following:

**PHIL 4430**, Social and Political Philosophy

**PHIL 4435**, Classical Ethical Theory

**PHIL 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) **PHIL 5400**, Proseminar in Philosophy

#### **Cooperative arrangement with Saint Louis University**

The strengths of the University of Missouri-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, UMSL 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 UMSL 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 University of Missouri - 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, 2280, 2281, 3301, 3302, 3303, 3304, 3305, 3307, 3360, 3369, 3374, 3379, 3380, 4401, 4402, 4406, 4407, 4408, 4410, 4420, 4421, 4430, 4435, 4438, 4439, 4440, 4445, 4450, 4457, 4458, 4460, 4469, 4470, 4474, 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-9<sup>th</sup> through 12<sup>th</sup> 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 HS 1175, ENGL 1175, HIST 1175, MUSIC 1175, TH DAN 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 CRIMIN 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 WGST 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 GERON 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.

**2259 Engineering Ethics (3)**

An examination of ethical issues in engineering using professional engineering codes as a starting point. The course will have a problem solving orientation, focusing on the analysis of particular cases. Actual high-profile cases

such as the Challenger disaster will be considered, as well as hypothetical cases illustrating the more commonly encountered moral problems in engineering (such as accepting gifts from vendors). Topics include the engineer/manager relationship, engineers and the environment, honest in engineering, and risk, safety, and liability.

**2274 Philosophy and Literature (3)**

Critical reading and discussion of selected literary works in terms of the philosophical problems they present.

**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 Darwinism and the Philosophy of Biology (3)**

Prerequisites: Six hours in philosophy,, graduate standing, or consent of instructor. Examines Darwin's theory of evolution by natural selection and its philosophical consequences. Besides the theory itself, topics may include (but are not limited to): how we can test evolution and what the evidence is for it; the design argument; adaptationism; evolutionary psychology; evolution and morality; the fact-value distinction; nature versus nurture; differences between humans and other animals; evolution and human history; genetic engineering and possible futures.

**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 INTDSC 3690. Study of Marx and leading Marxists. Designed to evaluate their influence on recent political, economic, and social thought and institutions.

**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.

**3378 Philosophy of Mind (3)**

Prerequisites: Three hours of philosophy or consent of instructor. An introduction to philosophical issues pertaining to the mind. Topics may include how the mind relates to the body, how the mind represents the world, how the mind works, consciousness, and free will.

**3380 Philosophy of Science (3)**

An examination of science: what makes science special? Topics may include (but are not limited to): empiricism and scientific method; confirmation and the problem of induction; paradigms and revolutions; explanation, causation and laws; realism versus instrumentalism; critiques of science such as those of feminism or postmodernism; and reductionism – ultimately is it all just physics?

**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 work..

**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.

**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.

**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.

**4357 Media Ethics (3)**

Same as MEDIA ST 4357. 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.

**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.

**4478 Topics in Philosophy of Mind (3)**

Prerequisite: PHIL 3378 or six hours of other philosophy courses 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 3378 or PHIL 4478 or nine hours of other philosophy courses 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, strongly recommended), graduate standing, or consent of instructor. Examines in depth a particular topic or topics from either the history or philosophy of science. This is a variable content course and may be taken again for credit with the consent of the instructor and 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 CRIMIN 4487. Prerequisite: CRIMIN 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.

**5521 Seminar in Analytic Philosophy (3)**

Prerequisites: Graduate standing or consent of instructor. Intensive study of selected topics, texts, or individuals in historical or contemporary analytic philosophy. Topics may include, but are not limited to, Frege semantics, Russell's theory of definite descriptions, logical positivism, Wittgenstein's philosophy of language, Quine on the analytic/synthetic distinction, Kripke possible-world semantics, theories of propositions, the analysis of knowledge, contextualism in epistemology and language, relativistic semantics, epistemic two-dimensionalism, conceivability vs. possibility, three-dimensionalism vs. four-dimensionalism, presentism vs. eternalism, and 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.

**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 CRIMIN 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 CRIMIN 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.

**5546 Seminar in Modality (3)**

Prerequisites: Graduate standing or consent of instructor. Intensive study of selected topics, texts, or individuals in modality. Topics may include (but are not limited to): Kripke semantics, Lewis' genuine modal realism about possible worlds, linguistic ersatzism, epistemic two-dimensionalism, conceivability vs. possibility, theories of epistemic modals, theories of propositional attitude reports, theories of knowability, provability, and computability, modal paradoxes, and 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.

**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.

**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, such as the nature of explanation in social science, rationality, value-freedom and objectivity, 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.

**6421 Philosophy of Education (3)**

Prerequisites: Graduate standing or consent of instructor. Same as ED FND 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 Emeritus  
Ph.D., University of Virginia

**Ta-Pei Cheng**, Professor Emeritus  
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

**Jingvue Liu**, Professor  
Ph.D., Arizona State University

**Richard Dean Schwartz**, Professor Emeritus  
Ph.D., University of Washington

**Philip Fraundorf**, Associate Professor  
Ph.D., Washington University

**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

**Eric Majzoub**, Assistant Professor  
Ph.D., Washington University

**Mary Jane Kernan**, Associate Teaching Professor  
Ph.D., Washington University

**Charles E. Burkhardt**, Adjunct Professor  
Ph.D. Washington University

**Udo Erdman**, Adjunct Assistant Professor  
Ph.D., Humboldt University

**Lu Fei**, Adjunct Associate Professor  
Ph.D., University of Missouri-St. Louis

**J. Daniel Kelley**, Adjunct Professor  
Ph.D., Georgetown University

**Mary M. Leopold**, Adjunct Associate Professor  
Ph.D., Washington University

**László Nánai**, Adjunct Professor  
Ph.D., Lebedeff Institute Physics, Russia

**Alexander Neiman**, Adjunct Assistant Professor  
Ph.D., Dr. Sc., Saratov State University, Russia

**Chung-In Um**, Adjunct Professor  
Ph.D., SUNY Buffalo

**Dan Zhou**, Associate Research Professor  
Ph. D., University of Arizona

### 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. Students successfully completing this program will obtain an understanding of basic physics concepts, mathematical and problem-solving skills needed to solve basic physics problems, experimental skills in physics, astrophysics, or biophysics, and the ability to analyze and interpret scientific data and write scientific papers or reports.

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. Students receiving a M.S. in physics will obtain an understanding of advanced physics concepts and mathematical and problem-solving skills needed to solve advanced physics problems. Students are strongly encouraged to be involved with faculty research programs that will develop experimental skills in physics, astrophysics, or biophysics as well as experience in analyzing and interpreting scientific data and the writing of scientific papers, reports, or theses.

The department offers the Ph.D. degree in cooperation with Missouri University of Science and Technology Physics Department. Students must satisfy the MUST admission standards, and the MUST Qualifying Exam in Physics is required of University of Missouri-St. Louis Ph.D. students. However, all course work and dissertation research may be completed while the student is in residence at UMSL. In addition to obtaining an understanding of advanced physics concepts and mathematical and problem-solving skills needed to solve advanced physics problems, Ph.D., students are expected to conduct independent scientific research in physics, astrophysics, or biophysics while learning to analyze and interpret scientific data and write scientific papers, reports, and a dissertation.

#### 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, 1001A, 1011, 1012, 1050, 1051,  
**Atmospheric Science:** 1001, 1001A  
**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  
CMP SC 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 levels must be completed. The Department of Physics and Astronomy will accept the three-course sequence in American Sign Language as a substitution for the foreign language requirement for the degree. 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

**and one elective in math at or above the 3000 level, or in computer science at or above the 2000 level.**

#### Chemistry

1121, Introductory Chemistry II, or equivalent

### 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, 1001A, 1011 or 1012 for 1050 or 1051.

Also required are:

**Math**

2450, Elementary Linear Algebra  
And either  
4030, Applied Mathematics I OR  
4320, 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  
2450, Elementary Linear Algebra

Also required is one elective in math at or above the 3000 level, or in computer science at or above the 2000 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 UMSL. 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 55 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  
8140, Physics Optics and Photometry

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 Services and the Pre-Optometry Advisor in the UMSL 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 UMSL College of Optometry and arrange to take the Optometry Admissions Test (OAT) during the Fall semester 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**

#### **Chemistry**

**1111, Introductory Chemistry I**

**Geology 1001, General Geology OR**  
**Atmospheric Science 1001, Elementary Meteorology OR**  
**Astronomy 1001, 1011, 1012 or 1050**

#### **Environmental science**

**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, Curriculum and Methods of Teaching Physical Sciences 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:

**1099, Windows on Physics**  
**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 University of Missouri-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 UMSL and/or cooperating Missouri University of Science and Technology campus. Ph.D. qualifying exam, dissertation, and dissertation exam are administered in cooperation with MUST. 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 Nanoscience*, which opened in 1996, is an interdisciplinary 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 Microscope Image and Spectroscopy Tech 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 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/LINUX/OSX workstations with standard software packages for word and image processing. 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, atmospheric science, biomedical engineering, medical physics, and patent law 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, MEMC Electronic Materials, Motorola, 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 UMSL 2001-2002 Bulletin. The following courses fulfill the Natural Sciences and Mathematics breadth of study requirements as described in that Bulletin:

ASTRONOMY: 1001, 1001A, 1011, 1012, 1050, 1051.

ATMOSPHERIC SCIENCE: 1001, 1001A

GEOLOGY: 1001, 1002, 1001A, 1002A.

PHYSICS: 1001, 1011, 1012, 2111, 2112.

#### Astronomy

##### 1001 Cosmic Evolution/Introductory Astronomy (4) [MI, MS]

Overview of astronomy, from the planets to the Big Bang. Topics include the celestial motions, planets and the formation of the solar system, stars and stellar evolution, galaxies, and cosmology. Students will be introduced to the latest discoveries and how they affect our understanding of the universe. The format is three classroom hours and one 2-hour laboratory session per week to enhance lecture material.

##### 1001A Cosmic Evolution/Introductory Astronomy (3) [MS]

Overview of astronomy, from the planets to the Big Bang. Topics include the celestial motions, planets and the

formation of the solar system, stars and stellar evolution, galaxies, and cosmology. Students will be introduced to the latest discoveries and how they affect our understanding of the universe. The format is three classroom hours per week. Same as Astronomy 1001 without the laboratory.

**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.

**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.

**4301 Astrophysics (3)**

Prerequisite: PHYSICS 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.

**1001A Elementary Meteorology (3)**

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. Same as Atmospheric Science 1001 without the learning enhancement session.

**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 GEOL 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 GEOL 1002 without the laboratory.

**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) [ML,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: PHYSICS 1011. A continuation of PHYSICS 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.

**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]. PHYSICS 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) [ML,MS]**

Prerequisites: PHYSICS 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: PHYSICS 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: PHYSICS 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: PHYSICS 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: PHYSICS 2111, 2112, and MATH 2020 may be taken concurrently and PHYSICS 3200 strongly recommended. Photons and the wave nature of particles, wave mechanics, Schrödinger 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.

**4306 Nanoscience Practicals (1-3)**

Prerequisite: Consent of Instructor (1.0 credit hour per module with a maximum of 3 credit hours) Studies of nanoscience characterization, synthesis, and modeling techniques designed for clients of these tools, as well as for technical users interested in a current overview. Course consists of a set of 1/3 semester modules. Check with the instructor on more specialized modules (e.g. on materials microscopy) if interested. Each module will cover instrumentation, current applications, weaknesses, and will involve lab visits for hands-on experience, weekly web interaction and classroom hours.

**4308 Transmission Electron Microscopy (3)**

Prerequisite: PHYSICS 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.

**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: PHYSICS 3223. A study of modern optics including diffraction theory, polarization, light propagation in solids, quantum optics, and coherence. Three classroom hours per week.

**4331 Introduction to Quantum Mechanics (3)**

Prerequisites: PHYSICS 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.

**4341 Thermal and Statistical Physics (3)**

Prerequisites: MATH 2000 and PHYSICS 3231. Introduction to statistical mechanics, classical thermodynamics and kinetic theory. Three classroom hours per week.

**4343 Selected Topics in Physics I (3)**

Prerequisites: PHYSICS 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.

**4347 Biophysics of Imaging (4)**

Prerequisites: PHYSICS 3231, BIOL 1811, BIOL 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.

**4351 Elementary Solid State Physics (3)**

Prerequisite: PHYSICS 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.

**4354 Atmospheric Physics (3)**

Prerequisite: PHYSICS 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.

**4357 Subatomic Physics (3)**

Prerequisites: PHYSICS 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.

**4370 Relativity and Cosmology (3)**

Prerequisites: PHYSICS 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 PHYSICS 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.

**5307 Advanced Scanning Electron Microscopy (3)**

Prerequisite: Consent of instructor. This course introduces students to advanced scanning electron microscopy techniques and their applications to solving challenging materials and biological problems. The course includes electron optics, electron-specimen interactions, image formation and interpretation, compositional analysis by energy dispersive X-ray spectroscopy, and sample preparation of both biological and non-biological systems. Laboratory experiments will provide students "hands-on" experience with SEM operations and problem-solving skills. Successful completion of the course enables students to independently operate scanning electron microscopes to perform research experiments. Two classroom hours and two hours of laboratory per week.

**5345 Nonlinear Dynamics and Stochastic Processes (3)**

Prerequisites: PHYSICS 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.

**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.

**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.

**6409 Theoretical Mechanics I (3)**

Prerequisite: PHYSICS 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: PHYSICS 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: PHYSICS 4331 and 4341. A study of statistical ensembles; Maxwell-Boltzmann, Fermi-Dirac, and Einstein-Bose distribution laws, application to some simple physical systems.

**6423 Electrodynamics II (3)**

Prerequisite: PHYSICS 6411. A continuation of PHYSICS 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.

**6461 Quantum Mechanics I (3)**

Prerequisite: PHYSICS 4331. A study of the Schrödinger wave equation, operators and matrices, perturbation theory, collision, and scattering problems.

**6463 Quantum Mechanics II (3)**

Prerequisite: PHYSICS 6461. Continuation of PHYSICS 6461 to include such topics as Pauli spin-operator theory, classification of atomic states, introduction to field quantization. Dirac electron theory.

**6481 Physics of the Solid State (3)**

Prerequisite: PHYSICS 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.

**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.

**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

**G. Eduardo Silva**, Professor, Chairperson  
Ph.D., University of California-San Diego

**David B. Robertson**, Curators' Teaching Professor  
Ph.D., Indiana University

**J. Martin Rochester**, Curators' Teaching Professor  
Ph.D., Syracuse University

**Glen Hahn Cope**, Professor, Provost and Vice Chancellor  
Ph. D., Ohio 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

**Lyman Tower Sargent**, Professor Emeritus  
Ph.D., University of Minnesota

**J. Fred Springer**, Professor Emeritus  
Ph.D., University of California-Davis

**Lana Stein**, Professor Emerita  
Ph.D., Michigan State University

**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  
Graduate Director  
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

**Nancy T. Kinney**, Associate Professor  
Ph.D., University of Colorado at Denver

**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

**Richard Middleton IV**, Assistant Professor  
Ph.D., University of Missouri-Columbia

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 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 B.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 University of Missouri-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:

#### Political Science

**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, Politics and Society
- 2280, Judicial Politics and Policy
- 2290, Gender 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:

- 2280, Judicial Politics and Policy
- 2300, State Politics
- 2320, African Americans and the Political System
- 2350, Introduction to Urban Politics
- 2380, The Politics of Gender in the United States
- 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
- 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)
- 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
- 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
- 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
- CRIMIN 2220, Statistical Analysis in Criminology and Criminal Justice or
- SOC 3220, Sociological Statistics or
- ECON 3100, Economic Statistics

In addition, students must provide a demonstration of computer proficiency through one of the following: BUS AD 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; ACCTG 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.

**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, The Politics of Gender in the United States
- 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**

POL SCI 1500, Introduction to Comparative Politics, plus 12 hours from the following political science courses:

- 2500, Comparing Different Worlds
- 2510, The Politics of European Union
- 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
- 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)  
4460, 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, Politics and Society  
2280, Judicial Politics and Policy  
2290, Gender 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)  
4460, 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)  
4460, Urban Planning and Politics

#### Minor in Women and Politics

POL SCI 1550, Women and Politics in the Developing World and 12 hours from among the following political science courses:

POL SCI 2290, Gender and the Law  
POL SCI 2380, The Politics of Gender in the United States  
POL SCI 3439, Studies in Policy Formation (consent of instructor required)  
POL SCI 3460, The Politics of Poverty and Welfare  
POL SCI 3570, Gender, Race, and Public Policy (Comparative)  
POL SCI 3590, Politics, Leadership and the Global Gender Gap  
POL SCI 3680, Feminist Political Theory  
POL SCI 3900, Special Readings (consent of instructor required)  
POL SCI 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**  
**POL SCI 1100**, Introduction to American Politics  
**POL SCI 1500**, Introduction to Comparative Politics
- 2) PLUS two of the following  
**POL SCI 1600**, Contemporary Political Theory  
**POL SCI 1800**, World Politics  
**POL SCI 2300**, State Politics  
**POL SCI 2350**, Introduction to Urban Politics  
**POL SCI 2400**, Introduction to Public Administration  
**POL SCI 2650**, American Political Thought

B. Undergraduate Requirements within the 2+3 Program

- 1) Two of the following  
**POL SCI 2280**, Judicial Politics and Policy  
**POL SCI 2620**, Modern Political Thought  
**POL SCI 3200**, Constitutional Law  
**POL SCI 3210**, Civil Liberties  
**POL SCI 3300**, The American Presidency  
**POL SCI 3331**, Congressional Politics  
**POL SCI 3350**, Political Parties and Elections  
**POL SCI 3470**, Gender, Race and Public Policy  
**POL SCI 3480**, Environmental Politics
- 2) Two of the following:  
**POL SCI 2510**, The Politics of European Union  
**POL SCI 2520**, Middle Eastern Politics  
**POL SCI 2530**, Political Systems of South America  
**POL SCI 2540**, Political Systems of Mexico, Central American & the Caribbean  
**POL SCI 2580**, African Politics

**POL SCI 3690**, The Marxist Heritage (PHIL 3369; ID 3690)

**POL SCI 3830**, International Political Economy  
**POL SCI 4850**, International Law

3) Plus one additional course from B-1 or B-2

#### **C. Graduate Requirements**

- 1) **POL SCI 6401**, Introduction to Policy Research (3 credits)
- 2) PLUS 3 of the following (9 credits)  
**POL SCI 6420**, Proseminar in Public Law  
**POL SCI 6430**, Proseminar in American Politics  
**POL SCI 6440**, Proseminar in Public Policy Administration  
**POL SCI 6450**, Proseminar in Comparative Politics  
**POL SCI 6460**, Proseminar in Political Theory  
**POL SCI 6470**, Proseminar in Urban Politics  
**POL SCI 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 (18 credit hours)**

18 credit hours will be required in the areas of research methods, 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 as they apply to major subfields in political science.

#### **Policy Concentration (24 credit hours)**

Students, in consultation with the program director, will develop expertise in a substantive policy area. Policy concentrations (many interdisciplinary) include but not limited to:

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.

### **Learning Outcomes**

Majors in the B.A. learn about power, conflict and cooperation in society, within and outside government.

Students understand the fundamentals of scientific-based inquiry, the postulating of cause-effect relationships, and the marshalling of evidence using quantitative or qualitative methods to draw conclusions about problems in politics.

We train students to communicate information effectively.

The BSPPA program provides knowledge and skills for real world application in the context of American institutions and structures.

Students learn the fundamentals of administration and policymaking in the United States by acquiring skills in budgeting, personnel management, accounting, and expertise in a specific policy area.

The M.A. in political science provides a firm grounding in scientific-based inquiry into problems in politics.

Students learn how institutional design and economic and cultural factors shape the distribution of power and patterns of cooperation and conflict in society within and outside of government.

Students master the postulating of cause-effect relationships, and the marshalling of evidence using quantitative or qualitative methods to test hypotheses about problems in politics.

The Ph.D. in political science trains students to become independent researchers who may apply their skills in the academic, government, non-profit, and business worlds.

Students master skills to frame researchable questions that make original contributions to empirical and theoretical knowledge about problems in politics.

Students learn to rigorously specify cause-effect relationships, and to master techniques for marshalling evidence using quantitative and qualitative methods to test competing hypotheses about problems in politics.

### **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 University of Missouri-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, 2000, 2260, 2280, 2290, 2300, 2320, 2350, 2380, 2400, 2420, 2500, 2510, 2520\*, 2530\*, 2540\*, 2580\*, 2610, 2620, 2650, 2820, 2900, 3200, 3210, 3220, 3260, 3290, 3300, 3331, 3330, 3340, 3350, 3390, 3400, 3410, 3420, 3430, 3439, 3440, 3450, 3460, 3470, 3480, 3570, 3590, 3680, 3690, 3695, 3830, 3850, 3860, 3890, 3900, 3950, 4060, 4460, 4500, 4550, 4850, 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, 3400, 3450.

**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 CRIMIN 1200 and INTDSC 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 INTDSC 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) [ML,V, SS, CD]**

This course introduces students to western and non-western systems. It examines similarities and differences in the basic political ideologies, structures, economics, 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 SOC 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, Politics and Society (3) [ST]**

Same as CRIMIN 2226. Prerequisite: POL SCI 1100, or 1200, or consent of instructor. This course examines the ways in which law in America connects with politics and society. The course will cover the litigation process, access to the courts, how and why individuals and groups bring litigation to pursue political and policy goals, and how lawyers, judges and other political actors use law to solve policy problems. Attention will be placed on current legal policy issues facing American society.

**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 Gender and the Law (3) [ST]**

Same as WGST 2290. This course examines the ways in which laws and interpretations of laws affect gender equality in the United States. Emphasizing how traditional roles impact both women and men historically and currently, the course highlights major pieces of legislation and court rulings related to employment, economics, education, sexual harassment, pornography, rape, reproductive rights, and

domestic relations. The course stresses the impact of federal and state institutions and non-governmental influences on equality. It also addresses gender representation in the legal profession and its effect on judicial decisions. (This course satisfies State requirements in American History and Government)

**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 The Politics of Gender in the United States (3) [ST]**

Same as WGST 2380. Prerequisite: POL SCI 1100 or consent of instructor. This course examines the role of gender in political institutions, practices and policy in the United States, past and present. It focuses on various movements for political equality, the relationship between gender and political participation, vote choice, and public opinion, and how legislative, executive, and judicial offices are gendered at the national, state, and local levels. (This course satisfies State requirements in American History and Government.)

**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 The Politics of European Union (3)**

Prerequisite: POL SCI 1500 or consent of instructor. The European Union has become the driving force in European economic and social development. This course assesses the changing nature of national identity and national sovereignty in Europe. It compares and contrasts key public policies (single market, welfare, migration, gender mainstreaming, "democratic deficits"), along with core EU actors and institutions, and includes participation in the annual Midwest Model EU.

**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.

**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.

**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.

**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: POL SCI 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 INTDSC 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.

**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 SOC 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.

**4090 American Government for the Secondary Classroom (3)**

Prerequisites: POL SCI 4090/SEC ED 4090 must be taken concurrently with HIST/SEC ED 4011 except with special consent of the School Studies Coordinator. (Same as SEC ED 4090) 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 methods of inquiry for use in an interactive classroom. Can be counted

towards the Political Science major requirement, but not the American Politics subgroup. Counts toward social Studies certification. Not available for graduate credit.

**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.

**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 SOC WK 4911 and P P ADM 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 SOC WK 4912 and PP ADM 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 SOC WK 4913 and P P ADM 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 P P ADM 4940, SOC WK 4940, and SOC 4540. 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 SOC WK 4960 and P P ADM 4960. 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 P P ADM 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 P P ADM 6000. Systematic development of a critical/analytic base for dealing with public policy.

**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 P P ADM 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: SOC WK 5200 or equivalent or consent of instructor and graduate standing. Same as SOC WK 5200 and SOC 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 intended 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 GERON 6417 and P P ADM 6170 and SOC WK 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: SOC WK 5200 or equivalent or consent of instructor and graduate standing. Same as Soc Wk 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. Same as CRIMIN 6422.  
An analysis of the role of courts as policymaking institutions and the law as policy. We will explore the role of judges as policymakers, consider the attributes of courts (both trial and appellate) that make them appropriate yet limited targets for advocates of reform and the implementation and impact of court decisions We will consider recent examples of judicial involvement in state and national policymaking. In addition, we will examine the role of lawyers and interest groups in selecting litigation rather than alternative political processes for policy change.

**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.

**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 P P ADM 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 P P ADM 6430 GERON 6443, SOC 6443 and SOC WK 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 P P ADM 6444, GERON 6444 and SOC 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 P P ADM 6460 and SOC 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: P P ADM 6600 or consent of instructor. Same as SOC WK 6449 and P P ADM 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.

**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 P P ADM 6550 and SOC WK 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  
**James A. Breaugh**, Professor  
Ph.D., Ohio State University  
**Michael Harris**, Professor  
Ph.D., University of Illinois-Chicago  
**Miles L. Patterson**, Professor,  
Ph.D., Northwestern University  
**Robert H. Paul**, Professor  
Ph.D., University of Oklahoma Health Sciences Center  
**George T. Taylor**, Professor, Director,  
Doctoral Program in Behavioral Neuroscience  
Ph.D., University of New Mexico  
**Brian Vandenberg**, Professor  
Ph.D., University of Rochester  
**Carl Bassi**, Associate Professor  
Ph.D., Vanderbilt University  
**Steven E. Bruce**, Associate Professor,  
Ph.D., Virginia Commonwealth University  
**Michael G. Griffin**, Associate Professor  
Director, Center for Trauma Recovery  
Ph.D., University of Missouri-St. Louis  
**Therese M. Macan**, Associate Professor  
Director, Doctoral Program in Industrial/  
Organizational Psychology  
Ph.D., Rice University  
**Thomas Meuser**, Associate Professor and  
Director of Gerontology  
Ph.D., University of Missouri-St. Louis  
**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  
**Tara Galovski**, Assistant Professor  
Ph.D., University of Albany-State University  
Of New York  
**Laurie A. Greco**, Assistant Professor  
Ph.D., West Virginia University  
**Brenda A. Kirchhoff**, Assistant Professor  
Ph.D., Boston University  
**John P. Meriac**, Assistant Professor  
Ph.D., University of Tennessee  
**Stephanie Merritt**, Assistant Professor  
Ph.D., Michigan State University  
**Zoë Peterson**, Assistant Professor  
Ph.D., University of Kansas  
**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**, Teaching Professor  
Ph.D., Northern Illinois University

**Robert N. Harris**, Clinical Professor  
Ph.D., University of Kansas  
**Jennifer Siciliani**, Associate Teaching Professor, Director,  
Undergraduate Advising  
Ph.D., University of Tennessee-Knoxville  
**Jerry H. Dunn**, Assistant Clinical Professor#  
Ph.D., University of Missouri - St. Louis  
**Deana L. Jefferson**, Assistant Clinical Professor#  
Ph.D., University of Missouri - St. Louis  
**Matthew Kliethermes**, Assistant Clinical Professor#  
Ph.D., St. Louis University  
**Megan Schacht**, Assistant Clinical Professor#  
Ph.D., University of Missouri - St. Louis  
**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

\*Primary appointment in the School of Social Work  
+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 (314) 516-4561 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](mailto: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 advisor in the Psychology Undergraduate Advising Office (Room 110 Stadler, [psy\\_advising@umsl.edu](mailto: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](http://www.apa.org) website at [www.apa.org](http://www.apa.org).

## Facilities

The department has several animal and human experimental laboratories, equipped with a wide range of psychophysiological equipment. The department also operates three facilities (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 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 bachelor's 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, with specialization in either Industrial/Organizational Psychology or Behavioral Neuroscience.

## 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 (16 credit hours) are required:

PSYCH 1000, Careers in Psychology  
PSYCH 1003, General Psychology  
PSYCH 2201, Psychological Statistics  
PSYCH 2211, Introduction to Biological Psychology  
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 two core areas of psychology.

### 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  
PSYCH 2270, Developmental: Infant, Child Adolescent  
Or  
PSYCH 2272, Developmental: Adulthood & Aging



Finally, at least three other courses totaling a minimum of nine credit hours must be taken at the 3000-4000 level.

Note: Students must satisfy the current University mathematical skills requirement before taking PSYCH 2201, Psychological Statistics. PSYCH 2201 is a prerequisite for PSYCH 2219, and hence, PSYCH 2201 must be completed with a grade of C- or higher prior to enrollment in PSYCH 2219.

Also, multiple enrollments in PSYCH 3390, Directed Studies, count as no more than one advanced course. No more than six hours of independent study courses (PSYCH 3295, Selected Projects in Field Placement; and PSYCH 3390, Directed Studies) may be counted toward the 31- hour minimum needed for graduation.

### Graduate School Preparation

In addition to the required courses listed above, students interested in applying to graduate school in Psychology are strongly encouraged to become involved in a research project with a psychology faculty member by enrolling in PSYCH 3390, Directed Studies. These positions are available on a limited and competitive basis. See the Psychology Undergraduate Advising office for more information on such positions.

Students who plan to apply to graduate school in clinical psychology, counseling, or social work should also enroll in PSYCH 3295, Field Placement, to gain experience in a "helping role" before applying to graduate programs in one of the human services professions.

### Undergraduate Learning Outcomes

The Undergraduate Psychology Learning Goals and Outcomes represent reasonable departmental expectations for the psychology major at the University of Missouri - St. Louis. They have been modified from the undergraduate learning goals recommended by the American Psychological Association.

#### Goal 1. Knowledge Base of Psychology

Students will demonstrate familiarity with the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology.

Psychology 1003 introduces these concepts; all other psychology courses expand on these issues in more depth.

#### Goal 2. Research Methods in Psychology

Students will understand basic research methods in psychology, including the development and refinement of theory, hypothesis generation and testing, research design, data analysis and interpretation.

All courses touch on these issues, but two required courses, Psychology 2201 and 2219 specifically address these issues in depth. In

addition, students may take elective courses to strengthen their skills in this area.

#### Goal 3. Biological and Cognitive Approaches to Understanding Behavior

Students will have a basic understanding of the biological basis of behavior and cognitive theory and research in psychology.

The following courses specifically address this goal: Psychology 2000, 2211, 3000, 4349, and 4356.

#### Goal 4. Application of Psychology to Personal Development and Mental Health.

Students will understand and apply psychological principles to personal development and mental health.

Many psychology courses have a specific application to the personal development and mental health of students and their families, including Psychology 2216, 2232, 2245, 1268, 2270, 2272, 2280, 4305, 4306, 3340, 3346, 4376.

#### Goal 5. Application of Psychology to Social and Organizational Issues

Students will understand and apply psychology principles to social and organizational issues, including understanding and respect for cultural diversity.

The following courses address this goal: Psychology 2160, 2222, 2230, 3256, 4310, 4311, 4312, and 3318.

#### Goal 6. Values in Psychology and Critical Thinking

Students will be able to weigh evidence, tolerate ambiguity, act ethically, and reflect other values that are the underpinnings of psychology as a discipline. Students will also learn to use critical thinking in evaluating research and other types of information.

All courses are relevant to this goal.

#### Goal 7. Information and Technological Literacy

Students will demonstrate information competence and the ability to use computers and other technology for many purposes.

Psychology 2219 addresses these topics in considerable detail.

#### Goal 8. Communication Skills

Students will be able to communicate effectively in a variety of formats.

All courses provide some training in communication skills, with initial skills reinforced in upper division courses.

#### Goal 9. Career Planning and Development

Students will emerge from the major with realistic ideas about how to implement their psychological knowledge, skills, and values in occupational pursuits in a variety of settings.

Psychology 1000 addresses this goal directly.

## Graduate Programs in Depth

### Admission Requirements

In addition to meeting the general admission requirements of the Graduate School, applicants should have completed undergraduate courses in general psychology, psychological statistics, and research methods. Each doctoral program has additional admission requirements specific to the program.

### Applications:

Each program has independent deadlines for completed applications. They are as follows:

**M.A. in General Psychology**-- January 15

### Ph.D. in Psychology:

Clinical Psychology--December 15

Industrial/Organizational Psychology--January 15

Behavioral Neuroscience--January 15

### Teaching Assistantships

Stipends for teaching and research assistantships are available for the doctoral programs only.

### Description of Master of Arts in Psychology

The psychology department at the University of Missouri-St. Louis devotes most of its graduate level training to its three doctoral programs. However, the department does offer a flexible program of studies leading to the Master of Arts degree in general psychology. Only a few students are admitted to this program each year. Course work is possible, depending on student demand and course availability in Behavioral Neuroscience and in Industrial/Organizational Psychology. The M.A. degree does not constitute a license to practice in Missouri or elsewhere as a professional psychologist. The M.A. program does not offer course work in Counseling or Clinical Psychology.

There is no thesis or language requirement. Part-time or full-time enrollment is permissible. The M.A. degree is a terminal degree and is separate from the Ph.D. program in Psychology.

The M.A. in Psychology requires a total of 32 semester hours of course work in Behavioral neuroscience or 45 semester hours of course work in Industrial/Organizational Psychology, depending on the option chosen. Before applying for admission to the Masters Program, interested applicants are encouraged to discuss their interest with either the Director of the Behavioral Neuroscience program or the Director of the Industrial/Organizational Psychology program.

All students in the masters program must take the course work prescribed by their emphasis area. All programs of study for M.A. students require the approval of the director of the Behavioral Neuroscience program or director of the Industrial/Organization program.

## Description of Ph.D. Programs/Options

There are three distinct programs: Clinical Psychology, Behavioral Neuroscience, and Industrial/Organizational Psychology. Each has its own specific curricular and research requirements. Handouts describing these requirements are available from the department on request. The following briefly describes each program.

### Clinical Psychology

The Clinical Psychology program has been fully accredited by the American Psychological Association since 1977 and is patterned upon the scientist-practitioner model of clinical training. The Clinical Psychology program requires five years of full-time study. Students are not considered for admission on a part-time basis. Through the medium of courses, practicum, and research experiences, this emphasis area prepares clinical psychologists for careers in research, teaching, and clinical practice.

Students in the Clinical Psychology program participate for three years in the Psychology Department's Community Psychological Service. This facility provides psychological services to the public and consultation to outside agencies. Students also receive clinical experience in clerkships and during a full-time year-long internship. Research requirements include an initial independent research project, a major critical review of research in a specialty area, and a dissertation.

### Learning Outcomes for the Ph.D. in Clinical Psychology

The Ph. D. in Clinical Psychology has the following goals and outcomes:

1. Students will gain a broad-based foundation of knowledge and conceptual skills necessary for psychological research and practice. The following courses address this goal: Psychology 5465, 5468, 6466, 7403, 7405, 7412.
2. Students will be prepared in multiple approaches to assessment and treatment that are theory-based and research-supported. The following courses address this goal directly: Psychology 7404, 7406, 7430, 7431, 7434, 7439, 7450, 7451.
3. Students will develop the ability to evaluate and conduct methodologically sound research of potential benefit to the practice of psychology. The following courses address this goal directly: Psychology 7421, 7422, 7474, 7485, 7486, 7487, 7488, 7492.
4. Students will develop a firm basis for ethical decision-making and adherence to professional standards of conduct in research and practice. Most courses provide some training in this area, and Psychology 7432 addresses this goal directly as a required course.

5. Students will develop and display sensitivity and adaptability in their applications of research, assessment and treatment approaches to diverse populations. Most courses provide some training in this area, and Psychology 6448 addresses this goal directly as a required course.
  6. Students will continue to develop a commitment to the goals of life-long learning, and an awareness of clinical psychology as an evolving science. All courses are relevant to this goal.
5. As they progress through the program, students will show increasing self-reliance to initiate a research project and carry it to its completion. Outcome measures are numbers and quality of self initiated research projects.
  6. At the end of their graduate studies, the students will have grown into full colleagues of the faculty and be ready for careers in research and teaching. Outcome measures are a quality dissertation that is successfully defended before peers and being hired for a suitable position (post-doc, assistant professor, junior-level researcher) in the field.

### **Behavioral Neuroscience**

The Behavioral Neuroscience program provides opportunities for study, research, and training in various areas including psychophysiology, psychopharmacology, neuroendocrinology, cognitive neuroscience, and neuropsychology. This program prepares students for research careers in academia or industry, such as pharmaceutical firms and medical schools. Full-time enrollment is required.

### **Learning Outcomes for the Ph.D. in Behavioral Neuroscience:**

The graduate program in Behavioral Neuroscience has the following goals. Included is a set of outcome measures for each goal that allow the faculty to assess the students.

1. Students will gain a broad-based foundation of terminology and basic and conceptual knowledge necessary for teaching and research in the BN field. Outcome measures include grades in coursework, performance on both the written and oral segments of the qualifying exam, as well as active participation in our journal reading groups.
2. Beginning early in their studies, students will learn the basic skills to conduct research in a variety of different paradigms. Outcome measures include successful accomplishments in the laboratories of mentor professors.
3. Also from early in their studies, students will come to recognize the key to success in the BN field is publishing and seeking grant support. Outcome measures include an easily observable mindset that assesses all scholarly activities in regard to possible publication and/or a suitable idea for submission to a grant agency. Also, regular attendance is expected at all relevant colloquia on campus and at the grant writing seminar offered by the BN faculty.
4. Students will come to recognize importance of writing and will be constantly developing their writing skills as applied to manuscript preparations and grant applications. Outcome measures are the numbers of manuscripts written and submitted to journals or grant agencies each year.

### **Industrial/Organizational Psychology**

The industrial/organizational psychology program is offered in cooperation with selected faculty from the College of Business to prepare students for careers in industry or academia. This program embraces the scientist practitioner model and provides a balanced training in I/O. This emphasis provides "industrial" training in areas such as personnel selection, training, and test development/validation, as well as "organizational" training in areas such as work motivation, leadership, and group processes. Research and other training experiences in various settings are also incorporated.

### **Learning Outcomes for the Ph.D. in Industrial/Organizational Psychology:**

The Ph.D. in Industrial/Organizational Psychology has the following goals:

1. Students will gain a broad-based foundation of knowledge and conceptual skills necessary for applied psychological research and practice.
2. Students will develop the ability to evaluate and conduct methodologically sound research of potential benefit to the theory and practice of psychology.
3. Students will develop the ability to apply psychological principles that are theory-based and research-supported to individuals and groups in organizational settings.
4. Students will develop a firm basis for ethical decision-making in research and practice.
5. Students will display adaptability in their applications of research, assessment and practical psychological approaches to individuals and groups in organizational settings.

### **Graduate Certificate Programs**

#### **Clinical Psychology Respecialization-Advanced Graduate Certificate Program**

This program is designed for graduates of accredited doctoral programs in psychology who wish to receive training in the specialty field of clinical psychology.

Respecialization students are trained within the context of the UMSL Clinical Psychology Doctoral Program, which is accredited by the American Psychological Association. The program provides an integrated sequence of training experiences, including didactic course work and practicum placements. Core graduate-level psychology educational requirements not completed elsewhere are included in the respecialization student's course of study.

#### **Graduate Certificate in Trauma Studies**

The graduate certificate is awarded upon the completion of 18 credit hours of coursework on the topic of trauma studies. No more than nine hours of graduate level independent research or fieldwork may be used for the certificate. The coursework for the certificate must be taken in at least two departments and may include no more than three hours at the undergraduate 3000 or 4000 level.

#### **Course Descriptions**

##### **1000 Careers in Psychology (1)**

Prerequisite: Psychology major or consent of instructor. This course is an orientation to the field of psychology for majors and for students who are considering declaring the major. Students will be engaged in activities that will help them to develop and identify their professional goals, learn about the various specialties and careers available within the field of psychology, understand the education and skills necessary for various careers, learn the requirements for a psychology major, become familiar with minors that are available at UMSL, encourage them to think about a possible choice of minor, and acquaint them with some of the UMSL Psychology faculty and specialties.

##### **1003 General Psychology (3) [SS]**

A broad introductory survey of the general principles of human behavior.

##### **1268 Human Growth and Behavior (3) [SS]**

Prerequisite: PSYCH 1003. A survey course, designed for non-majors, of development over the lifespan, with an emphasis on the developmental tasks and hazards of each age period. Majors in psychology and students planning to pursue a career in psychology research, teaching, or practice are strongly encouraged to take PSYCH 2270 and/or PSYCH 2272 instead of this course.

##### **2160 Social Psychology (3)**

Same as SOC 2160. Prerequisite: PSYCH 1003 or SOC 1010. Study of interaction between individuals and their social environment. Examination of basic principles, concepts, and methods.

##### **2170 Aging in America: Concepts and Controversies (3)**

Same as GERON 2170, INTDSC 2170, SOC WK 2170, and SOC 2170. This course examines the major theoretical and service issues connected to the study of older adults and their families, using multidisciplinary perspectives. Students

are provided with an introduction to the field of aging through an examination of current social issues and controversies. This course emphasizes student involvement through class discussion, and is appropriate for students in the arts and sciences, business, communication, education, and nursing.

##### **2200 Drugs and Behavior (3)**

Prerequisites: PSYCH 1003 and three other hours in psychology or biology. The course is designed to provide an introduction to the relationship between drugs and behavior. The emphasis will be on psychoactive drugs, alcohol, nicotine, as well as drug-like substances produced naturally in the body.

##### **2201 Psychological Statistics (4)**

(With Laboratory) Prerequisites: PSYCH 1003 and satisfaction of the university's mathematical skills requirement. Statistical methods in psychological measurement and analysis of psychological data. Frequency distribution analysis, sampling, test of significance, and correlation methods.

##### **2205 Human Sexuality: Psychological Perspectives (3)**

Prerequisites: Psychology 1003: General Psychology. This course is a comprehensive overview of human sexuality from the standpoint of the behavioral science of psychology. This course includes a study of sexual anatomy and physiology, sex differences, sexual orientation, interpersonal and intrapersonal aspects of human sexuality, classification and treatment of sexual dysfunction and sexual disorders, and the methods employed for the scientific examination of human sexual behavior.

##### **2211 Introduction to Biological Psychology (3)**

Prerequisites: PSYCH 1003, BIOL 1012 and 3 additional hours in Psychology or Biology. A fundamental course designed to introduce psychology students to the new findings for the biological bases of human behavior.

##### **2212 Principles of Learning (3)**

Prerequisite: PSYCH 1003. A consideration of critical findings in learning.

##### **2216 Personality Theory (3)**

Prerequisite: Six hours of psychology. Structural and dynamic aspects of the human personality considered in the context of selected theoretical systems.

##### **2219 Research Methods (3)**

(With laboratory.) Prerequisite: grade of C- or higher in PSYCH 2201. Research methods and analysis techniques used in psychological inquiry. Special emphasis placed on the logic of research design. Includes laboratory study and analysis of selected methods.

##### **2230 Psychology of Women (3)**

Same as WGST 2230. Prerequisite: PSYCH 1003. Evaluation of psychological theories and research regarding

physiological, cognitive, and personality sex differences, female problems in adjustment, and clinical interventions for women.

**2232 Psychology of Victims (3)**

Same as WGST 2232. Prerequisite: Psych 1003. A review of the effects of crime, violence, natural disasters, and other traumas on psychological functioning with attention to the relationship between gender and victimization. Prevention and therapy techniques will also be discussed.

**2245 Abnormal Psychology (3)**

Prerequisite: PSYCH 1003. Introduction to major symptom complexes, theories of etiology, and treatment of behavior disorders.

**2270 Developmental Psychology: Infancy, Childhood & Adolescence (3)**

Prerequisite: PSYCH 1003. The theory and research surrounding cognitive, social, emotional, and physical development from conception through adolescence. Intended for students with career interests in the study, education, and/or treatment of children.

**2272 Developmental Psychology: Adulthood and Aging (3)**

Same as GERON 4280. Prerequisite: PSYCH 1003. Personality, social, and physiological development from the onset of early adulthood through maturity and old age.

**2280 Psychology of Death and Dying (3)**

Same as GERON 2280. Prerequisites: PSYCH 1003. A beginning exploration of end-of-life issues.

**2285 American Culture & Minority Mental Health (3)**

Prerequisites: PSYCH 1003. Provides an examination of the relationship between American culture and mental health. The focus is on the lives of American minority groups, with specific attention given to how racism, prejudice, and minority status currently reveal themselves within a mental health framework. An eclectic, multidisciplinary approach that draws from clinical and social psychology will be utilized.

**3256 Environmental Psychology (3)**

Prerequisite: PSYCH 2160 or SOC 2160. Analysis of environmental influences on behavior and man's influence, in turn, on the environment. Topics will include a consideration of both individual processes relating to the environment (such as the perception, evaluation, and adaptation to the environment) and social processes relating to the environment (such as privacy, territoriality, and crowding).

**3295 Selected Projects in Field Placement (3)**

Prerequisites: Junior standing, fifteen hours of psychology, and departmental approval. Selected options in field work placement experiences in various local agencies with

training and supervision by faculty. May be repeated once for credit.

**3316 Fundamentals of Leadership (3)**

Prerequisites: 9 hours of Psychology or consent of instructor. This course addresses concepts and methods for developing leadership skills in work and everyday settings. Contemporary approaches to leadership development are reviewed in relation to psychological and organizational theory. This course is designed to be relevant to the wide range of leadership opportunities that arise in work and daily life. Experiential exercises are used to help students discover and develop new leadership skills.

**3317 Social Psychology of Conflict and Negotiation (3)**

Same as SOC 3317. Prerequisite: nine hours of psychology or nine (9) hours of sociology, including PSYCH 2160 or SOC 2160. The purpose of this course is to understand how social psychological phenomena affect the processes and outcomes of negotiation and other forms of social conflict. The course is designed to be relevant to the broad spectrum of conflict situations people face in their work and daily lives. A basic premise of this course is that while analytical skills are needed to discover solutions to social problems, negotiation skills are needed in order for these solutions to be accepted and implemented.

**3318 Industrial and Organizational Psychology (3)**

Same as MGMT 3623. Prerequisites: PSYCH 2201 or MGMT 3600. This course introduces the student to psychological research and theories pertaining to human behavior in the work setting. Topics covered include: selection, performance appraisal, training, leadership, motivation, job satisfaction, and organizational design.

**3320 Personnel Assessment (3)**

Prerequisite: PSYCH 3318 or BA 3621. This course will provide an in-depth study of several topics in the area of personnel psychology. Consideration will be given to issues such as assessment centers, employment interviewing, personnel appraisal, employment test validity, and legal issues relevant to personnel assessment.

**3340 Clinical Problems of Childhood (3)**

Prerequisites: A total of twelve hours of psychology including PSYCH 1003 and PSYCH 2270. This course will address the clinical disorders and difficulties of children and the treatment of these disorders. Topics that will be addressed include autism, childhood schizophrenia, behavior disorders, drug abuse, enuresis, encopresis, and childhood compulsive and phobic reactions. Treatments designed for specific use with children, including behavioral, drug, and community mental health approaches will be addressed.

**3346 Introduction to Clinical Psychology (3)**

Prerequisites: Nine hours of Psychology, including PSYCH 2216 or PSYCH 2245. A conceptual framework for research, description, and understanding of clinical

phenomena. Assessment, interviewing, the clinical use of tests, and psychological approaches to treatment.

**3390 Directed Studies (1-5)**

Prerequisite: Consent of instructor. Directed reading and research. May be repeated for a maximum total of six hours.

**3500 Health Psychology (3)**

Prerequisites : PSYCH 1003. Health psychology involves the disciplines and principles of psychology and behavior in understanding how the mind, body, and behavior interact in health and disease. Class topics include theoretical foundations of health and illness, health promotion and primary prevention of illness, health enhancing and health damaging behaviors, psychosomatic illness, stress and coping, pain management, and a variety of specific behavior-related medical illnesses (e.g., heart disease, eating disorders, cancer, AIDS).

**4235 Community Psychology (3)**

Prerequisite: PSYCH 1003. The analysis of psychological problems in terms of the social and situational forces that produce them. Community psychology analyzes the situational problems in living. Epidemiology of mental illness; group, family, and crisis intervention; mental health-care delivery; program evaluation and demonstration project research; role of psychologist as consultant and change agent; and utilization of nonprofessional manpower

**4300 Introduction to Psychopharmacology: Drugs and Mental Illness (3)**

Prerequisites: PSYCH 2211 or PSYCH 2200, and PSYCH 2240. The course is designed to provide an introduction to drugs used to treat anxiety disorders, major depression, schizophrenia, and other psychopathologies. The emphasis will be on understanding neural mechanisms related to psychological disorders and to the effectiveness of current drug treatments.

**4305 Cognitive Development (3)**

Prerequisites: Junior standing and PSYCH 2270, or consent of instructor. Data and theory concerned with how children's thinking changes over time. Discussion will include domain-general versus domain-specific theories, social and cultural influences on cognition, gains in memory, attention, problem solving, and metacognition, conceptual development, children's naïve theories, schooling, and various definitions and measures of intelligence.

**4306 Social Development (3)**

Prerequisites: Junior standing and PSYCH 2270, or consent of instructor. Data and theory concerned with social behavior in infants, preschoolers, and school-aged children. Discussion will include emotional regulation, measurement and nature of temperament, formation and maintenance of attachment relationships, sex-role development, theories of aggression and the effects of socializing agents such as family, peers, media, and culture on development.

**4308 African American Psychology (3)**

Prerequisites: 9 hours of Psychology or 6 hours of Black Studies minor, or consent of instructor. Provides an overview of the emergence of contemporary African American Psychology. It explores the implications of a psychological perspective specific to African Americans. Traditional research theories are explored from a historical perspective. African American identity, socialization, personality, cognitive development, and mental health are discussed. Contemporary issues which impact African American behaviors and attitudes are also addressed.

**4310 Motivation Theory (3)**

Prerequisites: Junior standing and twelve hours of Psychology, or consent of instructor. Survey of current theoretical material in the area of motivation.

**4311 Psychology of Nonverbal Behavior (3)**

Prerequisite: PSYCH 2160 or SOC 2160. Psychological perspective on the role of nonverbal behavior in social settings. Primary concerns of the course will include a) analysis of a) functions of nonverbal behavior (e.g., communication, intimacy exchange, control), b) factors influencing nonverbal expression (e.g., culture, personality, relationships), and c) various theoretical views on nonverbal behavior and communication. Applications to various problems and settings in everyday life will also be pursued.

**4330 Hormones, the Brain and Behavior (3)**

Prerequisites: 9 hours of Psychology or Biology, including at least one of the following: either PSYCH. 2200, PSYCH. 2211, PSYCH. 4300 or PSYCH 4314 or permission of instructor. Can be taken for graduate credit. It is now clear that the endocrine system influences a notable range of reproductive and non-reproductive behaviors including mood, stress responses, cognition, memory, violence, attachment, aging, weight control and athletic prowess. Emphasis of the class is on hormonal contribution to reproductive and non-reproductive behaviors and sex steroids influences on the brain from prenatal life to old age as well as their contribution to gender behavioral differences.

**4349 Human Learning and Memory (3)**

Prerequisites: Nine hours of psychology or consent of instructor. A survey of contemporary research, theory, and facts pertaining to the acquisition, retention, and forgetting of information.

**4356 Thinking and Cognition (3)**

Prerequisites: Nine hours of psychology or consent of instructor. An introduction to modern analytical approaches to the psychology of thinking: problem solving, reasoning, categorizing, judgment, attention, and consciousness. Particular attention is paid to the mental structures and operations involved in the encoding, abstraction, representation, transformation, and retrieval of knowledge.

**4361 History and Systems of Psychology (3)**

Prerequisites: At least fifteen hours of psychology. The course should be taken no sooner than the winter term of the junior year. Historical antecedents of contemporary psychology, including a survey of systems and schools of psychology.

**4365 Psychological Tests and Measurements (3)**

Prerequisites: PSYCH 2201 and PSYCH 2219, or consent of instructor. Survey of psychological tests and principles of reliability, validity, test construction, and test evaluation.

**4374 Introduction to Clinical NeuroPsychology (3)**

Prerequisite: Nine hours of psychology. A survey of neuropsychological findings concerning relationships between brain and behavior. Topics will include brain function, neuroanatomy, neurological syndromes, and methods of neuropsychological assessment.

**4376 Mental Health and Aging (3)**

Prerequisites: 9 hours of psychology, graduate standing, or consent of instructor. (Same as GERON 4376 and SOC WK 4376). (MSW students normally take all foundation courses prior to enrolling in this course.) A survey of recent theory and research in mental health issues for older populations. The primary focus is on major psychological disorders prevalent among the elderly and on treatment approaches for elders.

**4392 Selected Topics in Psychology (1-3)**

Prerequisites: Twelve hours of psychology and consent of instructor. A seminar of selected issues and methods in psychology. May be repeated once for credit.

**4398 Child Maltreatment: A Multidisciplinary Approach (3)**

Same as SOC WK 4398. Focuses on clinical aspects of child abuse with attention to identification, reporting, intervention, and prevention. Perspectives from the disciplines of psychology and social work are provided.

**4999 Integrated Psychology (2)**

Prerequisites: This course is restricted to psychology majors who plan to graduate during the current semester or the next. This capstone course serves as a review of the primary fields of psychology. It will be taken typically during the last semester prior to graduation. An advanced general psychology textbook will guide the class through important contemporary topics in behavioral neuroscience, learning & memory, cognition, psychopathologies & their treatments, developmental and social psychology. Students will take the required major field test in psychology that will serve as the final exam for the course.

**5001 Neuropsychological Assessment (3)**

Prerequisites: Admission to Psychology graduate program, or consent of instructor. This graduate level course will review neuroanatomical systems that mediate primary cognitive networks and methods of assessments and

interpretation of data. The course will also review common neurological and psychiatric conditions that result in neuropsychological compromise.

**5400 Seminar: Special Topics in Behavioral Neuroscience (1)**

Prerequisites: Admission to the graduate program in behavioral neuroscience or consent of instructor. A seminar of selected contemporary topics in behavioral neuroscience. The class will meet weekly to discuss a journal article in the field with special focus on the methodologies used in neuroscience research. May be repeated for a total of 3 credit hours, provided the subject matter is different.

**5407 Psychopharmacology (3)**

Prerequisite: 12 units of graduate-level psychology courses and consent of instructor. An examination of the effects of drugs on the brain and on behavior. Primary emphasis is on those drugs used in the treatment of affective disorders, schizophrenia, and anxiety.

**5465 Seminar: Physiological Psychology (3)**

A critical examination of contemporary problems in physiological psychology.

**5468 Seminar: Cognitive Processes (3)**

Prerequisite: Admittance to doctoral program in psychology or consent of instructor. A critical examination of contemporary problems in cognitive processes

**5610 Mechanisms of Aging I: The Aging Body (1)**

Prerequisite: Admission to Clinical Psychology program or permission of the instructor.. A critical examination of the clinical-experimental literature on psychopathology. Etiologies of cognitive/affective functions and Prerequisites: Graduate standing and BIOL 1102 or equivalent. (Same as SOC WK 5610 and GERON 5610). (MSW students normally take all foundation courses prior to enrolling in this course). Introduces students with a social sciences/humanities background to the normal changes in the biology and chemistry of the aging human body and how these changes affect behavior.

**5611 Mechanisms of Aging II: The Aging Brain (1)**

Prerequisites: GERON 5610 or SOC WK 5610 or PSYCH 5610 or equivalent or consent of instructor. (Same as SOC WK 5611 and GERON 5611. (MSW students normally take all foundation courses prior to enrolling in this course.) Provides students with a social sciences/humanities background a basic introduction to the biology and chemistry of the aging human brain and nervous system and how these systems impact behavior.

**5612 Mechanisms of Aging III: Diseases of Aging (1)**

Prerequisites: GERON 5610 and GERON 5611 or SOC WK 5610 and 5611 or PSYCH 5610 and PSYCH 5611 or equivalent or consent of instructor. Same as SOC WK 5612 and GERON 5612. (MSW students normally take all foundation courses prior to enrolling in this course.)

Provides students with a social sciences/humanities background with information on how diseases associated with aging exacerbate the effects of aging on the human body, mind, and behavior.

**6441 Aging and Health Behavior (3)**

Same as GERON 644. Prerequisites: Graduate standing. This course examines sociocultural influences on health care practices of older adults. The role of social support and other social resources in the health behavior of older adults is emphasized. Topics include self care decisions, formal service utilization, family caregiving, and planned interventions for older adults.

**6444 Clinical Geropsychology (3)**

Prerequisite: Graduate standing or consent of instructor. This course examines major predictors of Psychosocial functioning in older adults. The emphasis is on assessment and research methods appropriate to studying developmental issues in late life. Topics include interpersonal relationships, mental health, and a critique of interventions designed to increase life satisfaction.

**6448 Multicultural Issues in Clinical Psychology (3)**

Prerequisite: Admission to the doctoral program in Clinical Psychology or consent of instructor. A survey of theoretical perspectives utilized in the treatment of various cultural groups. Their relationship to and implications for the treatment of members of various cultural groups will be explored. Strategies and ethical concerns in diagnosis, test interpretation, and treatment are considered.

**6466 Seminar: Developmental Psychology (3)**

A critical examination of contemporary problems in developmental psychology.

**7403 Psychopathology (3)**

Prerequisite: Admission to Clinical Psychology program or permission of the instructor. A critical examination of the clinical-experimental literature on psychopathology. Etiologies of cognitive/affective functions and dysfunctions are explored, and implications for therapeutic intervention are considered.

**7404 Introduction to Clinical Assessment I (4)**

Prerequisite: Admission to Clinical Psychology program. Fundamentals of clinical assessment with emphasis on interviewing and the measurement of cognitive functioning. This course includes a laboratory.

**7405 History and Systems in Psychology (3)**

Prerequisite: Admission to Clinical Psychology program or consent of the instructor. A comprehensive overview of the history of psychology with an emphasis on the systems of thought that have shaped contemporary psychological theory and research.

**7406 Introduction to Clinical Assessment II (4)**

Prerequisite: PSYCH 7404. Theory and techniques of personality assessment with emphasis on projective personality tests. This course includes a laboratory.

**7410 Women and Mental Health (3)**

Prerequisite: Admission to the doctoral program in Clinical Psychology or consent of instructor. Same as WGST 6410. This course will focus on contemporary research on the psychology of women pertaining to mental health issues. Etiology and treatment of disorders disproportionately affecting women will be emphasized.

**7412 Social Psychology (3)**

Prerequisite: Admittance to psychology doctoral program or consent of instructor. A review of key areas in contemporary theory and research in social psychology.

**7415 Seminar in Health Psychology & Behavioral Medicine (3)**

Prerequisites: Admission to doctoral program in clinical psychology or consent of instructor. This course analyzes research, theory, and clinical applications in the interrelationships of behavior, psychological states, physical health and disease. Discussion includes theoretical foundations of health and illness, biopsychosocial factors affecting health and public policy, and research issues. Critical evaluation of theory and empirical support for clinical applications in health psychology will be discussed.

**7421 Quantitative Methods I (4)**

(With laboratory) A comprehensive study of the use of analysis of variance procedures in analyzing data. Topics include completely randomized designs, randomized blocks, factorial designs, and the analysis of covariance.

**7422 Quantitative Methods II (4)**

Prerequisites : PSYCH 7421 and consent of instructor. (With laboratory) A comprehensive study of the use of multivariate statistics in data analysis. Topics include the general linear model, multiple regression, factor analysis, and multivariate analysis of variance.

**7423 Quantitative Methods III (3)**

Prerequisites: PSYCH 7422 and PSYCH 7429 and consent of instructor. A selective study of the use of multivariate statistics in data analysis. Topics include structural equation modeling, multilevel modeling, and analysis of longitudinal data.

**7429 Psychometric Theory (3)**

Prerequisite: PSYCH 7421, PSYCH 7422 and consent of instructor. A consideration of classical and modern theories of psychological testing. Topics include test reliability, validity and construction.



**7430 Introduction to Clinical Skills (1)**

Prerequisites: Admission to doctoral program in clinical psychology. An introduction to processes and procedures involved in psychotherapy.

**7431 Clinical Supervision (1-3)**

Prerequisite: Admission to Clinical Psychology program. Supervised experience in clinical practice. Maybe repeated six times for credit.

**7432 Ethics and Professional Issues (3)**

A study of issues in professional development, clinical supervision, risk management, and ethical standards as they relate to teaching, research, and professional practice.

**7434 Seminar: Introduction to Psychotherapy (3)**

Prerequisite: Admittance to Clinical Psychology program and PSYCH 7406. This course considers theories of personal change and their practical application in psychotherapy. Topics include the development of the therapist-client relationship, case management, process and outcome research, and ethical principles for the psychotherapist.

**7439 Summer Supervision (1)**

Prerequisite: PSYCH 7431. Supervision experience in clinical practice at all graduate year levels during the summer months. Can be repeated for credit.

**7442 Seminar: Cognitive and Behavior Therapy (3)**

Prerequisites: PSYCH 7434. The practice of behavior therapy. Students will learn to implement behavioral assessment and therapy strategies in clinical settings.

**7445 Seminar: Special Topics in Clinical Psychology (1)**

Prerequisites: Admission to doctoral program in clinical psychology or consent of instructor. A seminar of selected issues and methods in clinical psychology. May be repeated for a total of 3 credit hours, provided the subject matter is different.

**7447 Trauma and Recovery (3)**

Prerequisites: Graduate Trauma Studies Certificate. A comprehensive seminar on the psychological effects associated with exposure to potentially traumatic events. The course will include information on the history of trauma studies; definitions of stressful and traumatic events; common responses to these events; theoretical models for conceptualizing traumatic responses; information on specific types of traumatic events; and issues in treatment.

**7449 Research Methods in Applied Psychology (3)**

Prerequisite: One graduate course in statistics. This course focuses on the basics of conducting research in applied psychology. Topics include: philosophy of science; reliability and validity; experimental, quasi-experimental, and nonexperimental designs; power; and meta-analysis.

**7450 Clinical Internship I (1)**

Prerequisite: Consent of adviser. Supervised training in an affiliated agency or organization following completion of two years of course work.

**7451 Clinical Internship II (1)**

Prerequisites: PSYCH 7450 and consent of adviser. Supervised training in an affiliated agency or organization following completion of two years of course work.

**7454 Seminar: Personnel Psychology (3)**

An analysis of theories and research in personnel and industrial psychology. Topics include testing, assessment centers, performance appraisal, and interviewing.

**7455 Seminar: Organizational Psychology (3)**

An analysis of theories and research in organizational psychology. Topics include theories of motivation, leadership, job design, group process decision making, organizational effectiveness, and the relation between organizations and their environment.

**7457 Seminar: Special Topics in Industrial Psychology (3)**

A seminar of selected issues and methods in personnel psychology.

**7458 Seminar: Special Topics in Organizational Psychology (3)**

A seminar of selected issues and methods in organizational psychology.

**7459 Practicum in Industrial/Organizational Psychology (1-4)**

Supervised experience in personnel or human resource management.

**7461 Summer Research in I/O Psychology (1)**

Prerequisites: Admission to I/O program. Supervised experience on research topics in I/O psychology at all graduate year levels during the summer months. Can be repeated for credit.

**7469 I/O Professional Issues & Ethics (3)**

Prerequisites: Consent of instructor. In this course, students learn the ethical standards as they relate to teaching, research, and professional practice in industrial/organizational psychology. Other professional and career issues are also discussed.

**7472 Special Topics in Psychology (3)**

A seminar of selected issues and methods in psychology.

**7474 Clinical Research in Applied Settings (3)**

Prerequisite: PSYCH 7421 and 7422. This course provides information on the design and implementation of research in applied settings (e.g., human service agencies). Topics include program evaluation, consultation models, risk factor

analysis, presentation and health promotion, and quality control.

**7476 Seminar in Clinical Child Psychology (3)**

Prerequisite: Admission to the doctoral program in Clinical Psychology or consent of instructor. Introduction to principles, theory, and methods of study in the field of clinical child psychology. Emotional and behavioral dysfunctions are considered from developmental and socialization perspectives.

**7477 Principles of Child Psychotherapy (3)**

Prerequisites: PSYCH 7434 and 7476. The course will focus on treatments for children with clinical problems. Play therapy, family therapy, and behavioral therapy techniques will be reviewed. Special attention will be given to differentiating when to use each modality, as well as how they can be effectively combined.

**7478 Directed Research in Industrial/Organizational Psychology (1-4)**

Independent study of an issue in industrial/ organizational psychology through the application of research techniques.

**7479 Directed Readings in Industrial/Organizational Psychology (1-4)**

Independent literature review of a topic in industrial/ organizational psychology.

**7480 Research Methods in Clinical Psychology (3)**

Prerequisite: PSYCH 7421 or equivalent. An overview of research methods that are appropriate for clinical and other nonlaboratory settings.

**7483 Directed Research (1-10)**

**7484 Directed Readings (1-10)**

**7485 Research Team I (2)**

Prerequisite: Admittance to doctoral program in Clinical Psychology. Group supervision of beginning research leading to the Independent Research Project.

**7486 Research Team II (1)**

Prerequisite: Completion of Independent Research Project or Third Year standing in doctoral program in Clinical Psychology. Group supervision of advanced research leading to the dissertation proposal.

**7487 Independent Research Project (1-6)**

Prerequisites: Admission to the doctoral program in Clinical Psychology. Supervised original research project of a clinically-related topic.

**7488 Specialty Examination Research (1-6)**

Prerequisites: Admission to the doctoral program in Clinical Psychology. Supervised original review and analysis of a clinically-related topic.

**7491 M.A. Thesis Research (1-10)**

**7492 Ph.D. Thesis Research (1-10)**

## School of Social Work

### Faculty

**Lois Pierce**, Professor, Director  
Ph.D., Washington University  
**Uma Segal**, Professor  
Ph.D., Washington University  
**Margaret Sherraden**, Professor  
Ph.D., Washington University  
**Norman Flax**, Associate Professor Emeritus  
Ph.D., Saint Louis University  
**Joan Hashimi**, Associate Professor Emeritus  
Ph.D., Washington University  
**Sharon Johnson**, Associate Professor  
Ph.D., Washington University  
**Thomas Meuser**, Associate Professor  
Ph.D., University of Missouri-St. Louis  
**Shirley Porterfield**, Associate Professor  
Ph.D., University of Wisconsin - Madison  
**Baorong Guo**, Assistant Professor  
Ph.D., Washington University  
**M. Denise King**, Assistant Professor  
Ph.D., University of Maryland  
**Joseph Pickard**, Assistant Professor  
Ph.D., Washington University  
**Patricia Saleeby**, Assistant Professor  
Ph.D., Washington University  
**Lori Curtis**, Associate Teaching Professor  
M.S.W., Washington University  
**Linda Vawter**, Associate Teaching Professor  
M.S.W., Washington University  
**Linda Wells-Glover**, Associate Teaching Professor  
M.S.W., Washington University  
**Patricia Rosenthal**, Associate Clinical Professor  
M.S.W., Washington University  
**Beverly Sporleder**, Assistant Clinical Professor  
M.S.W., Washington University

### General Information

The School of Social Work at the University of Missouri-St. Louis includes the Social Work and Gerontology programs. The faculty are distinguished scholars committed to excellence in teaching and research in a wide range of specialties. These include child welfare, gerontology, community organization, addictions, social service policy, and international social work. The School's programs work closely with the agencies in the St. Louis region, and students are able to select internships from more than 400 area social service agencies.

Gerontology is an interdisciplinary program with faculty from anthropology, biology, education, economics, nursing, optometry, psychology, social work and sociology. Students may also take courses in Business Administration or Nonprofit Management .

## Degrees and Areas of Concentration

Bachelor of Social Work (BSW)

Masters in Social Work (MSW) with concentrations in:

Family Practice

Social Work Leadership and Management

Gerontology

Master of Science in Gerontology (MSG)

Undergraduate Certificate in Gerontological Studies

Graduate Certificates in Gerontology and Long-Term  
Care Administration

Courses may be completed through day or evening coursework (BSW) or through evening courses (MSW, MSG). Credit courses are also offered off-campus through the Division of Continuing Education.

## Undergraduate Studies

### Objectives of the BSW Program

The BSW program has the following educational outcomes. Students who graduate with a BSW will be generalist practitioners who:

- Have acquired basic theoretical knowledge of individual, family, group, organizational, community, and social systems dynamics and processes.
- Understand that oppression and injustice are endemic to human societies, recognize the forms they take and the mechanisms used to perpetrate them, and become cognizant of strategies of change that advance social and economic justice.
- Are knowledgeable about the roots, origins and history, of social work and about its current structures and issues it faces.
- Can conduct an initial assessment that identifies strengths/resources and problems with individuals, families, groups, organizations and communities.
- Can identify the appropriate level(s) of intervention, including social policy, and conduct entry level intervention(s) at the individual, family, group, organization, and community levels—based on assessments of the relevant problems, strengths, and resources.
- Have developed critical thinking skills and the skills of problem solving with individuals, families, groups, organizations and communities.
- Have acquired a realistic understanding of self and impact of self in social work practice, including the ability to use research to critically examine their impact on client systems.
- Have developed theoretical and practical understanding and sensitivity to experiences of diverse population groups (e.g. ethnic, racial, class, gender, sexual orientation, age, ability, and religious) and acquired foundation skills in working with different systems.

- Understand the social work Code of Ethics and are able to apply these guidelines in entry-level social work practice.
- Self identify as social work professionals.
- Gain skills, tools, and resourcefulness to continue developing analytical and substantive abilities as lifelong learners.

### **General Education Requirements**

Majors must satisfy the university and college general education requirements, except that proficiency in a foreign language is recommended but not required.

Courses required for the B.S.W. degree may not be taken on a satisfactory/unsatisfactory basis except SOC WK 4800 and SOC WK 4850.

### **Admission Requirements**

Students entering University of Missouri-St. Louis as freshman and as transfer students should indicate a pre-social work major. Students must apply to the program concurrently with SOC WK 3100. Admission to the program is conditional upon the successful completion of all necessary requirements.

### **Requirements for Admission to the Social Work program:**

Junior standing

Submission of:

Application for admission to social work program

Transcripts of all university work

Three letters of reference – One from a professor in your major field of study, and one from a work or volunteer supervisor or other professional reference. Letters from employees/supervisees, friends, and family may not be used.

Completion of SOC WK 2000, 2200, and 2201 or their equivalents or completion of an A.A. in Human Services.

Satisfactory completion of all courses listed as prerequisites for SOC WK 3100, 3510, and 3210.

Applicants may be asked to meet with the social work Admissions Committee.

### **Undergraduate Studies**

#### **Bachelor of Social Work**

Students must have a minimum GPA of 2.5 in social work and related-area requirement courses to enter field practicum. Candidates for this degree program must complete the core requirements including the following social work courses:

**2000**, Social Work and Social Problems

**2200**, Social Welfare as a Social Institution

**2201**, Social Welfare as a Social Institution Laboratory

**3100**, Introduction to Interventive Strategies for Social Work Practices

**3210**, Social Issues and Social Policy Development

**3410**, Research Design in Social Work (or 3230 SOC, 2219 PSYCH, or 2210 CRIMIN)

**3510**, Human Behavior in the Social Environment

**3700**, Diversity and Social Justice

**4110**, Interventive Strategies for Social Work with Individuals, Families, and Groups

**4300**, Interventive Strategies for Social Work with Organizations and Communities

**4800 and 4850**, Supervised Field Experience in Social Work I and II

**4801 and 4851**, Integrative Field Experience Semina: I and II

A minimum of 37 hours or a maximum of 50 hours must be taken in social work. A minimum of 30 hours is required in related area departments.

Evaluation of social work transfer credits will be done by a social work adviser on an individual basis.

### **Related Area Requirements**

The following courses, or their alternatives, are required:

#### **Biology:**

One course from the following:

**1102**, Human Biology

**1131**, Human Physiology and Anatomy I

**1141**, Human Physiology and Anatomy II

**1202**, Environmental Biology

**ECON 1000**, Introduction to the American Economy

**POL SCI 1100**, Introduction to American Politics

**PSYCH 1003**, General Psychology

#### **Sociology:**

**1010**, Introduction to Sociology

**2160**, Social Psychology

**3220** Sociological Statistics (or 2201 PSYCH or 2220 CRIMIN)

At least 9 additional hours must be taken in social work, sociology, political science, psychology, women's and gender studies, anthropology, criminology and criminal justice, or economics at the 2000 level or above. Hours taken in social work will apply toward the maximum of 50 hours that may be taken in social work courses. The School of Social Work may require students to pass a placement test to enroll in the next level course, provided this test or its equivalent is administered to all students seeking to enroll in that course.

Social work majors must have a cumulative grade point average of 2.5 or better in all course work specifically required for the major, with satisfactory grades in practicum.

**Note:** Taking anthropology, biological sciences, economics, and Spanish courses is strongly recommended by graduate schools of social work.

### **Requirements for the Minor in Social Work**

Candidates must complete the following social work courses:

**2000**, Social Work and Social Problems

**2200**, Social Welfare as a Social Institution

**3100**, Interventive Strategies in Social Work Practice

**3210, Social Issues and Social Policy Development and one additional social work course at the 3000 level or above.**

### Graduate Studies

#### Objectives of The Department and The Masters of Social Work

The goals of the M.S.W. program of the University of Missouri-St. Louis are consistent with the land-grant public service mission of the University, the MSW feasibility study, and the educational mission of CSWE and are to:

- Prepare professional social workers to engage in ethical professional practice.
- Prepare social work students with a commitment to public or non-profit service.
- Provide a professional public university social work education to a diverse body of students, many of whom are non-traditional and place-bound.
- Prepare graduate level professional social workers with an appreciation for and ability to pursue life-long learning.
- Provide educational opportunities and diverse learning environments in partnership with public and private graduate social work and related programs.
- Contribute to solving local, regional and global problems and to promoting social change through teaching, research, and service.

#### Master of Social Work

##### Admission Requirements

Admission to the M.S.W. Program requires admission to the University of Missouri-St. Louis Graduate School and acceptance by the School of Social Work. Applicants to the program must meet the following requirements to be considered for admission:

Completion of a bachelor's degree from a college or university accredited by a recognized regional accrediting organization.

Completion of a liberal arts education including courses in the humanities, the social and behavioral sciences, and the physical sciences. These courses must include one in human biology and one course in statistics.

Attainment of a cumulative grade point average of at least 3.0 on a 4.0 scale for all undergraduate course work and a grade point average of 3.0 on a 4.0 scale in the major field. Submission of the following documents by the admission deadline:

A completed application to the UMSL Graduate School and a completed M.S.W. supplement application.

Three written essays.

Three professional letters of reference. – One from a professor in your major field of study, and one from a work or volunteer supervisor or other professional reference.

Letters from employees/supervisees, friends, and family may not be used.

Official transcripts from all colleges and university attended.

Applicable fees.

##### Application Deadline

The deadline for application to the MSW program is February 15 for admission in the following fall semester. See <http://www.ums.edu/~socialwk>, for more details on additional deadlines.

##### Admissions to the Advanced Standing Program

Applicants with a B.S.W., B.A.S.W., or B.S.S.W., from an accredited social work program may be given up to 24 credit hours of advanced standing for foundation social work courses. Admission to the advanced standing program is available to applicants who meet the general admission requirements and who: (1) have earned a bachelor's degree in social work accredited by the Council on Social Work Education within five years of applying to the M.S.W. Program, and (2) have earned a grade point average of at least 3.0 on a 4.0 scale in the social work foundation curriculum, and no less than a B in all courses that are applicable.

##### Course Waivers

A student who does not have a bachelor's degree in social work but who can document successful completion (with at least a B) of foundation courses from an accredited B.S.W. program within the last five years will be given course waivers and be allowed to replace these courses with electives.

Students from nonaccredited B.S.W. programs or students who have taken comparable course work in other undergraduate programs may take place-out examinations for select foundation courses; waivers will be given if students successfully pass place-out examinations. The waiver does not provide graduate credit; it is a mechanism for allowing elective courses to be substituted for required foundation courses.

Academic credit cannot be given for life experience and previous work experience, in whole or in part, in lieu of field practicum or foundation year courses.

##### Degree Requirements

The M.S.W. is a two-year program comprising a foundation year and a concentration year. All students are required to take the foundation year courses. These provide a common base of knowledge across all practice settings and populations. Beyond the general requirements of the Graduate School, the department requires a minimum of 60

semester hours of course work, of which 45 must be at the 4000 or 5000 level and 45 must be in social work or crosslisted with social work, including the following foundation courses:

- 5100**, Generalist Social Work Practice
- 5200**, Social Policy and Social Services
- 5300**, Community Practice and Social Change
- 5350**, Social Work and Human Service Organizations
- 5410**, Research Methods and Analysis I
- 5450**, Research Methods and Analysis II
- 5500**, Foundations of Human Behavior in the Social Environment
- 5700**, Diversity, Social Justice & Social Work Practice
- 5800**, Graduate Field Practicum I
- 5801**, Graduate Field Practicum Seminar

Upon completion of the 30 credits of foundation year requirements, students move into a year of specialization, called the concentration. The concentration year requires 30 hours of course work that includes 12 hours of elective graduate-level courses approved by the adviser. Students plan their degree program to reflect their career interests in the following concentration areas:

#### **Family Practice Social Work Leadership and Management Gerontology**

To remain in good standing, students must maintain a cumulative GPA of 3.0 or better.

The field practicum is an integral part of the concentration year. Students will complete 300 hours (two days of full-time work each week) of M.S.W. supervised practice in an agency during the winter semester of the foundation year, and 660 hours total (three days of full-time work per week) in the concentration year.

A student must receive a grade of B or better in the first-year field practicum course in order to be eligible to enter the second year field practicum. S/U grades are given for the concentration practicum.

#### **Part Time Status**

Students who enter the program as part-time students complete the foundation year in two years and the concentration course work in an additional two years. All students must complete the M.S.W. in four years.

#### **Career Outlook**

The bachelor of social work program prepares persons for entry-level employment in social welfare agencies, schools, hospitals, correctional institutions, social action and community organizations, and day care, geriatric, or rehabilitation and residential centers. The master of social work program prepares professionals for advanced social work practice with individuals, families, groups, organizations, and communities. Individuals currently working in social welfare can develop skills and increase

employment and job advancement opportunities with the B.S.W. and M.S.W. degrees.

#### **Course Descriptions**

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 University of Missouri-St Louis 2001-2002 Bulletin. The following social work courses fulfill the Social Sciences breadth of study requirements as described in that Bulletin: 2000, 2200, 3100, 3510, 3210, 4602, 3900, 3700, 4600, 4900, 4950, 5700

#### **2000 Social Work and Social Problems (3)**

Prerequisites: SOC 1010 or PSYCH 1003. Examination of the network of social programs and services developed in response to social problems in modern urban communities and the various roles and functions performed by helping professions. Introduction to basic values, skills, and training involved in a helping relationship, as well as characteristics of clients seeking help and professional engaged in the helping process.

#### **2102 Introduction to Women's and Gender Studies (3)**

Same as HIST 2102, SOC 2102 and WGST 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 diverse female and male experiences and gendered power relationships.

#### **2200 Social Welfare as a Social Institution (3)**

Prerequisite: SOC WK 2000 or consent of instructor. A study of the: 1) development of social welfare services and the philosophy underlying the present practices and systems; 2) present social welfare programs with particular emphasis given to public income-maintenance provisions; 3) special welfare needs of blacks, aged, women, Hispanics, and Native Americans; and 4) the development of social work as a profession. This course may be taken by non-social work majors.

#### **2201 Social Welfare as a Social Institution Laboratory (1)**

Prerequisites: Simultaneous with SOC WK 2200. The lab session will be used for field trips to social agencies. This course is required for all Social Work majors.

#### **2330 Asians in Migration (3)**

Prerequisites: None. This course is a comparative analysis of the social and cultural diversity of the peoples of East, South, and Southeast Asia. Study focuses on their reasons for migration and the extent and quality of the social and cultural connections they maintain to their homeland. Implications of these cultures for students in a variety of disciplines are explored. This course satisfies the cultural diversity requirement.

**3100 Introduction to Interventive Strategies for Social Work Practice (3)**

Prerequisites: SOC WK 2200, SOC 1010 and PSYCH 1003, or permission of instructor. A presentation of basic knowledge, skills, and theory used for entry-level professional practice, such as problem assessment, interviewing skills, crisis intervention, and referral procedures. The course objectives also will be to teach students how to help clients negotiate systems effectively, and to use resources, services, and opportunities.

**3210 Social Issues and Social Policy Development (3)**

Prerequisites: SOC WK 2200, POL SCI 1100, and ECON 1000. The identification of issues concerning governmental provisions to meet contemporary social needs, with analysis of the principles and values underlying alternative solutions. A study of the processes by which citizen opinions and public policies evolve and are implemented in areas such as income maintenance, crime and delinquency, employment, family and child welfare, and public mental health.

**3410 Research Design in Social Work (3)**

Prerequisites: Satisfaction of Math Proficiency requirement and either SOC 3220, CRIMIN 2220, or PSYCH 2201. Students explore research concepts and procedures (hypothesis testing, sampling, measurement, and design) emphasizing issues in social work research. Students learn to collect, analyze and present data.

**3510 Human Behavior in the Social Environment (3)**

Prerequisite: BIOL 1012 and SOC 2160 or PSYCH 2160 or permission of instructor. This course will focus on the normative stages in the life span, specifically how human development is affected by the physical environment and social status characteristics. Empirical information and theoretical views on human development will be included. Human development will be viewed as a complex interaction of individual developmental stages with family, social, and community systems.

**3700 Diversity and Social Justice (3)**

Same as WGST 3700. Prerequisite: SOC 1010 or equivalent. Analyzes the structure, dynamics, and consequences of social and economic injustice, and the impact on diverse groups in American society. Examines theoretical models and practice principles for work with diverse groups.

**4110 Interventive Strategies for Social Work with Individuals, Families, and Groups (3)**

Prerequisites: SOC WK 3100, and SOC WK 3510. This course continues the presentation of basic knowledge and practice skills for entry level professional practice begun in SOC WK 3100. It builds on the generalized helping model, incorporating specialized skills for working with specific groups of clients (e.g., children, aged, mentally ill, and physically handicapped), with families and small groups.

**4300 Interventive Strategies for Social Work with Organizations and Communities (3)**

Prerequisites: SOC WK 3210 taken prior to or concurrently, senior standing. Continuation of basic practice skills with emphasis given to analysis and intervention at the organization and community levels. Includes assessment of available services, organization of client groups, efforts to modify resources for a client group unable to intervene effectively on its own behalf. Also emphasis on helping the practitioner evaluate the impact of intervention.

**4376 Mental Health and Aging (3)**

Same as GERON and PSYCH 4376. Prerequisites: 9 hours of psychology, graduate standing, or consent of instructor (MSW students normally take all foundation courses prior to enrolling in this course.) A survey of recent theory and research in mental health issues for older populations. The primary focus is on major Psychological disorders prevalent among the elderly and in treatment approaches for elders.

**4398 Child Maltreatment: A Multidisciplinary Approach (3)**

Same as PSYCH 4398. Focuses on clinical aspects of child abuse with attention to identification, reporting, intervention, and prevention. Perspectives from the disciplines of Psychology and social work are provided.

**4399 Seminar: Child Sexual Abuse (1)**

Same as PSYCH 4399. Provides intensive study in interviewing, legal issues, assessment, medical issues, and therapeutic intervention in cases of child sexual abuse.

**4601 Abused and Neglected Children (3)**

Prerequisite: SOC WK 3510 or equivalent. This course explores the major concepts necessary for understanding abused and neglected children and their families. Emphasis is placed on (1) defining the problem, including societal stresses which contribute to the abuse and neglect; (2) examining existing practice methods; and (3) understanding the role of the social worker on interdisciplinary teams.

**4602 Child Welfare Practicum Seminar (3)**

Prerequisites: SOC WK 4800, and consent of instructor. This seminar allows students to integrate previous course work with their experience in child welfare agencies. Classroom discussion will emphasize core competencies needed for child welfare practice.

**4610 Domestic Violence: Theory, Problems & Practice (3)**

Same as WGST 4610. Prerequisites: SOC WK 3510. Focuses on theoretical and empirical understanding of domestic violence in US society and social work practice with battered women and their families. This course addresses direct services, community organizing, and public policy changes to help end violence against women. Relationships between violence against women and other forms of oppression (e.g., racism, economic exploitation, heterosexism and social class) are explored.

**4620 Addictions: Assessment and Intervention in Social Work Practice (3)**

Prerequisites: SOC WK 4110 or SOC WK 5100 or equivalent (or are taking concurrently), or consent of instructor. This class examines the interface of psychological, physical, social, and spiritual aspects of addiction. This practice class is designed to deepen students' abilities to address clients' issues related to addictions and addictive behaviors, including: prevention, assessment, and intervention. It builds on the generalized helping model within a systems perspective, and it introduces specialized skills for working with individuals, with specific groups of clients, with families, and with small groups.

**4650 Forensic Issues in Mental Health (3)**

Same as CRIMIN 4650. This is an intensive 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.

**4655 Health and Mental Health of Racial and Ethnic Minorities (3)**

Prerequisites: SOC WK 3700 or equivalent and graduate standing or approval of the instructor. This course explores the major health and mental health conditions that adversely affect the well-being and social functioning of racial and ethnic minorities. The course will explore the assessment of health and mental health conditions among varying minority groups, the availability of services to treat these conditions, the accessibility of services, and the quality of care provided to these groups. Traditional barriers to care will be explored including cost of care, societal stigma, client fears, and language differences. The course will also help students develop culturally competent approaches to working with racial and ethnic minorities that are individualized to a target population.

**4670 Cross Cultural Perspectives on Social Policy (3)**

Prerequisites: SOC WK 3210 or equivalent. This course examines social policies in different countries, which may include social insurance, social assistance, health care, and social services. Using a comparative framework, the course examines the nature of government involvement, and public and private sector relations. It examines adequacy, equity, inclusiveness, comprehensiveness, effectiveness, and efficiency of social policies in the countries being studied.

**4800 Supervised Field Experience in Social Work I (4)**

Prerequisites: SOC WK 4110 must be taken prior to or concurrently, SOC WK 4801 must be taken concurrently, consent of instructor. This course provides students practice experience in social service agencies. Students work at the

agencies approximately 20 hours per week. The purpose of this experience is to familiarize students with agency operations. Selection of the agency is based on student education needs.

**4801 Integrative Field Experience Seminar I (2)**

Prerequisites: Consent of instructor and concurrent registration in SOC WK 4800. This seminar provides an opportunity for students to integrate previous course work with their experience in social work agencies. Classroom discussion will emphasize direct practice issues.

**4850 Supervised Field Experience in Social Work II (4)**

Prerequisites: SOC WK 4800, SOC WK 4801, and consent of instructor. This is a continuation of agency practice experience. Students work at the agency approximately 20 hours per week and may continue at the same agency as SOC WK 4801, or change agencies with the consent of the instructor.

**4851 Integrative Field Experience Seminar II (2)**

Prerequisites: Consent of instructor and concurrent registration in SOC WK 4850. This seminar is a continuation of SOC WK 4801. Classroom discussion will emphasize administration and community organization issues.

**4900 Special Study (1-10)**

Prerequisite: Consent of instructor. Independent study through advanced readings in method and philosophy on a topic of particular interest, or field research in an agency.

**4911 Management Issues in Nonprofit Organizations: Staff Management Issues (1)**

Prerequisite: Junior Standing. Same as POL SCI 4911 and PP ADM 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; 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 POL SCI 4912 and P P ADM 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 POL SCI 4913 and P P ADM 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)**

Prerequisite: Junior standing. Same as P P ADM 4940, POL SCI 4940, SOC 4940. Addresses the role and scope of the independent sector in the United States, as well as the leadership and management of nonprofit organizations within that sector. Topics include the economic and political scope of the independent sector, the role of volunteerism in a democratic society, and the role and scope of philanthropy. Topics in voluntary organization management and leadership include: the dynamics, functions and membership structure of NPOs, especially staff-board and other volunteer relations; governance and management of NPOs; resource mobilization; and program development management and evaluation.

**4950 Seminar in Social Work Issues (1-3)**

Prerequisite: Consent of instructor. A variable-credit course examining current and future considerations in designing and implementing social work service and delivery arrangements. Issues will be selected according to interests of the class. Course may be taken more than once for credit as different topics are offered.

**4960 American Philanthropy and Nonprofit Resources Development (3)**

Prerequisite: Junior standing or consent of instructor. Same as POL SCI 4960 and P P ADM 4960. 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.

**5100 Generalist Social Work Practice (3)**

Prerequisite: SOC WK 4110 or equivalent or admission to the MSW program. Using a problem-solving approach, students develop theoretical and empirical understanding and practical application of generalist social work methods. Students gain knowledge and skills that include interviewing, assessment, crisis and short-term intervention, contracting, resource development, and case documentation needed for competent direct practice with diverse populations.

**5200 Social Policy and Social Services (3)**

Prerequisite: SOC WK 3210 or POL SCI 2420 or POL SCI 3460 or equivalent or admission to the MSW program.

Covers the history and development of social welfare policies, legislative processes, and existing social welfare programs. Examines frameworks for social policy analysis, analyzes how social and economic conditions impact the process of social policy development and implementation, and introduces policy practice in social work.

**5300 Community Practice and Social Change (3)**

Prerequisites: SOC WK 4300 or SOC 4344 or equivalent or admission to the MSW program. Focuses on economic, social, and political theory and research on communities and social change. Examines conceptual models of community practice within the generalist model and develops skills in organizing, advocacy, and planning.

**5350 Social Work and Human Service Organizations (3)**

Prerequisites: SOC WK 3510 and 4300 or PSYCH 3318 or BA 3611 or equivalent or admission to the MSW program. Students develop theoretical and empirical understanding of groups and organizations, including concepts such as power and authority, structure, goals, membership, leadership, motivation, technology and organizational culture. Using organizations as settings for social work practice and as targets for change, students learn strategies and skills for assessment and intervention.

**5410 Social Work Research Methods and Analysis I (3)**

Prerequisites: SOC WK 3410 or SOC 3230 and 3231 or equivalent and SOC 3220 or equivalent or admission to the MSW program. The first of a two-course sequence designed to provide students with the knowledge base and skills for using scientific method to advance social practice, knowledge and theory. Focuses on research methods at different levels (e.g., individual, group, organization, and community). Covers quantitative and qualitative methods, research design, sampling, measurement, use of results, impact of research, and ethical considerations.

**5450 Social Work Research Methods and Analysis II (3)**

Prerequisites: SOC WK 5410 or equivalent. Advanced course, focusing on analysis of qualitative and quantitative data to advance social work practice, knowledge and theory. Students learn to use and interpret various statistical procedures for analyzing quantitative data, including bivariate and multivariate analysis, and content and statistical analysis for qualitative data. Students apply these analytic techniques to social work case material using computer software applications.

**5500 Foundations of Human Behavior in the Social Environment (3)**

Same as WGST 5500. Prerequisites: SOC WK 3150 or equivalent or admission to the MSW program. Focuses on theoretical and empirical understanding of human behavior in the social environment using a life-span perspective. Introduces biological, behavioral, cognitive, and sociocultural theories of individuals, families, and small groups, and their implications for the professional social

worker's understanding of socioeconomic status, gender, disability, ethnicity, race, and sexual orientation.

**5610 Mechanisms of Aging I: The Aging Body (1)**

Prerequisites: Graduate standing and BIOL 1102 or equivalent. Same as GERON 5610 and PSYCH 5610. (MSW Students normally take all foundation courses prior to enrolling in this course.) Introduces students with a social sciences/humanities background to the normal changes in the biology and chemistry of the aging human body and how these changes affect behavior.

**5611 Mechanisms of Aging II: The Aging Brain (1)**

Prerequisites: SOC WK 5610, GERON 5610, PSYCH 5610 or equivalent or consent of instructor. (Same as GERON 5611 and PSYCH 5611. (MSW students normally take all foundation courses prior to enrolling in this course.) Provides students with a social sciences/humanities background a basic introduction to the biology and chemistry of the aging human brain and nervous system and how these systems impact behavior.

**5612 Mechanisms of Aging III: Diseases of Aging (1)**

Prerequisites: SOC WK 5610 and SOC WK 5611 or GERON 5610 and GERON 5611 or PSYCH 5610 and PSYCH 5611 or equivalent or consent of instructor. Same as GERON 5612 and PSYCH 5612. (MSW students normally take all foundation courses prior to enrolling in this course.) Provides students with a social sciences/humanities background with information on how diseases associated with aging exacerbate the effects of aging on the human body, mind, and behavior.

**5620 Dying, Grief & Death in Older Adulthood (3)**

Same as GERON 5620. Prerequisites: Six hours of graduate level gerontology, psychology, counseling and/or social work coursework, or special approval from the instructor. Undergraduates in their senior year may also request approval for entry from the Director of Gerontology. For those planning to work with older adults in counseling, healthcare, hospice, and/or community support settings. Will examine trajectories to death in older age, the dying process, influences of medical and aging-related conditions, euthanasia and suicide, life extension and longevity, personal beliefs and existential responses, how individuals and families cope, ethical concerns, strategies for supportive intervention. Topics are addressed from clinical, supportive care, and interdisciplinary perspectives.

**5700 Diversity, Social Justice and Social Work Practice (3)**

Same as WGST 5700. Prerequisites: Graduate standing. Analyzes the structure, dynamics, and consequences of social and economic injustice, and the impact on diverse groups in American society. Examines theoretical models and practice principles for work with diverse groups.

**5800 Graduate Field Practicum I (2-4)**

Prerequisites: Graduate standing and consent of instructor. Provides integrative field experience in generalist social work practice. May be taken for 2 or 4 credit hours depending on time in agency during semester; 75 contact hours = 1 credit hour. May be repeated once. A maximum of 4 credit hours will apply to the M.S.W. degree.

**5801 Foundation Field Practicum Seminar (2)**

Prerequisite: Graduate standing and consent of instructor. Integrates academic content from foundation course work and experiential learning in field placements. Goals are to conceptualize the problem solving process in field practice, synthesize theory into a social work approach that encourages creative use of self, and underscore ethics and service to diverse groups in practice.

**6100 Theory and Practice with Children and Youth (3)**

Prerequisite: SOC WK 5100 or equivalent or consent of instructor and graduate standing. Examines theory and empirically-based assessment and intervention models for work with children and adolescents. The effects of family, peers, and societal context (e.g., poverty, racism) will be stressed in understanding youth problems such as drug abuse, academic failure, delinquency, adolescent pregnancy, and gang participation. The course will emphasize a multidisciplinary approach using inter-agency collaboration and negotiation skills.

**6120 Theory and Practice with Older Adults (3)**

Prerequisites: SOC WK 5100 and SOC WK 5350. (MSW students normally take all foundation courses prior to enrolling in this course.) Examines theory and empirically-based assessment and intervention models for work with the elderly. It includes the life circumstances of older adults and how that differs from younger adult populations; how ethnicity, gender, social class, and sexual orientation interact with age and create special intervention issues; discussion of ethical and value issues (e.g., client autonomy, rationing of health care); examination of family and community resources in providing care, and interventions with physically or mentally disabled elders and elders in residential settings.

**6150 Theory and Practice with Families (3)**

Prerequisites: SOC WK 5100 or equivalent, graduate standing and departmental approval. Examines theoretical approaches to social work with families, including the impact of the social environment. Skills will include assessment, and multidisciplinary intervention with multi-problem families. Special emphasis will be given to poverty, chemical dependency, intra-familial violence, physical and mental illnesses, and working with family members of diverse cultures, socioeconomic backgrounds, races, sexual orientation, and ability. Values and ethics will be emphasized.

**6160 Advanced Interventive Strategies Across the Life Span (3)**

Prerequisites: SOC WK 5100 or equivalent or consent of instructor. Examines theory and empirically-based assessment and intervention strategies for diverse populations across the life span. Students will gain basic mastery of behavioral, cognitive-behavioral, brief therapeutic and supportive psychotherapeutic techniques and their appropriate use with children, adolescents, and young, middle, and older adults. The course will also consider the effects of family, peers and societal context (e.g., poverty, racism, and ageism) in understanding psycho-social stressors particular to each life era, including academic failure and delinquency, substance abuse, physical and mental illness, family disruption and instability, and grief and loss issues.

**6200 Family Policy (3)**

Prerequisites: SOC WK 5200 or equivalent or consent of instructor and graduate standing. Same as POL SCI 6416 and SOC 6200. Examines policy development, implementation and impact of social policies on children, youth, and families. International, focus, including topics such as economic support, health national, and state policies that affect basic family needs will be the care, child care and protection, and child and youth development. Intended and unintended consequences of existing policies on the family will be examined as well as future policy directions.

**6250 Social and Economic Development Policy (3)**

Prerequisites: SOC WK 5200 or equivalent or consent of instructor and graduate standing. Same as POL SCI 6418. Examines major trends and alternatives in social and economic development policy and practice in state, national, and international perspectives. Students will develop skills in policy analysis and development.

**6400 Practice and Program Evaluation (3)**

Prerequisites: SOC WK 5410 and 5450 or equivalent or consent of instructor and graduate standing. Provides specialized knowledge in the use of qualitative and quantitative research skills to evaluate the effectiveness of social work practice. Topics will include single system design, group designs, and program evaluation. Students will design and conduct a research project associated with their advanced social work practicum. Results will be presented to the class and the agency. Value and ethical issues, particularly those relevant to client race and gender, will be emphasized as students develop and conduct their research.

**6417 Income & Pension Policy for the Aged (3)**

Prerequisites: Graduate standing or consent of instructor. Same as PP ADM 6417, GERON 6417 and POL SCI 6417. (MSW students 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 a

historical context. Emphasis is placed on the analysis of current policy problems and proposed solutions.

**6443 Health Care Policy (3)**

Prerequisites: Graduate standing and consent of instructor. Same as POL SCI 6443, GERON 6443, Sociology 6443 and PP ADM 6430. (MSW students will normally take the social policy foundation course prior to 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.

**6449 Human Resources in the Public Sector (3)**

Prerequisites: PP ADM 6600 or consent of instructor. Same as POL SCI 6449 and PP ADM 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.

**6491 Strategic and Program Planning for Nonprofit Organizations (3)**

Prerequisites: Graduate standing or consent of instructor. Same as POL SCI 6490 and PP ADM 6550. Strategic and program planning enable an organization to concentrate on efforts and set priorities guided by a mission, 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.

**6630 Diagnosis and Related Pharmacology for Social Work Practice (3)**

Prerequisites: SOC WK 5100 or equivalent or consent of instructor. Designed for social work students, course will provide overview of development and treatment of selected mental health disorders classified by the Diagnostic and Statistical Manual of Mental Disorders. In particular, course will examine, from a systems perspective, psychological and neuropsychological etiologies of mood, psychotic personality, and other disorders and their preferred pharmacological treatment.

**6640 School Social Work (3)**

Prerequisites: SOC WK 5100 or equivalent or graduate standing and consent of instructor. Examines role of social worker in school settings and includes work with youth, families, and communities in relation to the child or adolescent's functioning in school.

**6650 Gerontological Assessment (3)**

Prerequisites: Graduate Standing. This course provides an overview of psychosocial assessment with older adults and their family caregivers. Major areas of gerontological assessment practice are considered, including dementia, mood disorders, suicide, grief, alcoholism, elder abuse/neglect, family caregiving, and interdisciplinary team issues.

**6800 Graduate Field Practicum II (2-6)**

Prerequisites: SOC WK 5801 and SOC WK 5800. Provides integrative field experience in students' graduate social work practice concentration. May be taken for 2 to 6 hours' credit depending on time in agency during semester; 55 contact hours=1 credit hour. May be repeated once and/or taken concurrently with SOC WK 6850.

**6850 Graduate Field Practicum III (2-6)**

Prerequisites: SOC WK 6800. Provides advanced integrative field experience in students' graduate social work practice concentration. May be taken for 2 to 6 hours' credit depending on time in agency during semester; 55 contact hours=1 credit hour. May be repeated once and/or taken concurrently with SOC WK 6800.

**6900 Directed Study in Professional Social Work (1-10)**

Prerequisites: Graduate standing and consent of instructor. Independent graduate-level study on a topic of particular interest through readings, reports, and field work under faculty supervision.

**6950 Advanced Seminar in Professional Social Work (1-3)**

Prerequisites: Graduate standing and consent of instructor. Focused study on selected issues, concepts, and methods of professional social work practice. May be taken more than once for credit provided the course topic is different each time.

## Gerontology

### Faculty

**Meuser, Thomas M.**, Director, Associate Professor of Social Work and Gerontology

Ph.D., University of Missouri-St. Louis

**Hurwicz, Margo-Lea**, Associate Professor of Anthropology and Gerontology

Ph.D., University of California-Los Angeles

**Steffen, Ann M.**, Associate Professor of Psychology and Gerontology

Ph.D., Indiana University

**Usui, Chikako**, Associate Professor of Sociology and Gerontology

Ph.D., Stanford University

**Boland, Kathleen**, Clinical Assistant Professor of Optometry\*

O.D., University of Missouri-St. Louis

**Hsueh, Kuei-Hsiang (Grace)**, Assistant Professor of Nursing\*

Ph.D., University of Arizona

**Isaac-Savage, Paulette**, Associate Professor of Education\*

Ph.D., University of Georgia

**King, M. Denise**, Assistant Professor of Social Work\*

Ph.D., University of Maryland, Baltimore

**Pickard, Joseph, G.**, Assistant Professor of Social Work\*

Ph.D., Washington University

**Porterfield, Shirley L.**, Associate Professor of Social Work\*

Ph.D., University of Wisconsin-Madison

**Tang-Martinez, Zuleyma**, Professor of Biology\*

Ph.D., University of California, Berkeley

Faculty from 11 departments, colleges and programs are involved in the undergraduate and graduate programs in gerontology.

### Master of Science in Gerontology

The Master of Science degree in gerontology program is a multidisciplinary program designed to prepare students for management or direct service positions working with the aged. The program of study includes courses from a variety of departments including anthropology, nursing, psychology, sociology, social work, public policy administration, and optometry. Courses are offered primarily in the evening to accommodate part-time as well as full-time students.

### Learning Outcomes

1. A detailed appreciation for the aging process with respect to successful aging, health status, physical functioning, cognition and capacity, psychosocial involvement, diversity, cultural influences and competence, and public policy;
2. An ability to integrate theoretical perspectives on aging with the practical needs and concerns of individuals in various living environments;
3. An ability to interpret and appropriately utilize research findings to inform daily practice,

especially with respect to screening, assessment, intervention and referral activities;

4. Professional competence in the areas of ethical practice, participation in multidisciplinary teams, communication with clients and families, assessment and intervention.

### Admission Requirements

Program applicants must have the following:

- Baccalaureate degree.
- 3.0 or B average (students with exceptions should contact the director of the gerontology program).
- Official transcripts of all previous undergraduate/graduate work.
- Three letters of recommendation

In addition, students must meet the other general requirements for admission to the Graduate School as explained in the Graduate Study section of the *Bulletin*.

### Degree Requirements

The students are required to complete 30 credit hours, including 24 hours in gerontology courses, a 3-hour statistics course, and a 3-hour research methods course. The required courses are listed below.

### Gerontology Distribution Requirements

**A. Public Policy and Aging-3 credits from the following:**  
**GERON (P PADM, POL SCI) 6443**, Health Care Policy  
**GERON (SOC) 5449**, Issues in Retirement

**B. Health and Physical Aspects of Aging - 3 credits from the following:**

**GERON 5610 (SOC WK 5610)**, Mechanics of Aging I:

The Aging Body (1 credit hour)

**GERON 5611 (SOC WK 5611)**, Mechanics of Aging II:

The Aging Brain (1 credit hour)

**GERON 5612 (SOC WK 5612)**, Mechanics of Aging III:

Diseases of Aging (1 credit hour)

**GERON 6441**, Aging and Health Behavior

**GERON 6458 (OPTOM 8650)**, Geriatric Optometry

**GERON 6497**, Interdisciplinary Geriatric Care

**C. Psychosocial Aspects of Aging-3 credits from the following:**

**GERON (PSYCH) 4373**, Psychology of Aging

**GERON (PSYCH) 4376**, Mental Health and Aging

**GERON (SOC) 4361**, Sociology of Aging

**GERON (ANTHRO) 5440**, Cultural Aspects of Aging

**GERON (SOC) 5361**, Advanced Social Gerontology

**SOC WK 6120**, Theory & Practice with Older Adults

**D. Practica in Gerontology, 6 credits from the following:**

**GERON 6495**, Practicum in Gerontology

**GERON 6496**, Advanced Practicum in Gerontology

**E. Gerontology Electives - 9 credits** (see Electives listed below)

**F. Graduate-level statistics course - 3 credits and graduate level research methods course - 3 credits.**

Students should consult Director of Gerontology for approved courses.

#### **Graduate Certificate in Gerontology**

The graduate certificate in gerontology is designed for students who wish to receive post-baccalaureate training in gerontology. The certificate can be taken by itself or in conjunction with pursuit of a graduate degree in another field. Eighteen credit hours are required.

#### **Admission Requirements**

Program applicants must have the following:

- Baccalaureate degree.
- 2.75 grade point average (students with exceptions should contact the director of the gerontology program).
- Official transcripts of all previous undergraduate/graduate work.
- Two letters of recommendation.

#### **Distribution Requirements**

**A. Public Policy-3 credits** from the following:  
**GERON (P PADM, POL SCI) 6443, Health Care Policy**  
**GERON (SOC) 6449, 5449, Issues in Retirement**

**B. Health and Physical Aspects of Aging-3 credits** selected from the following:

**GERON 5610, SOC WK 5610, Mechanics of Aging II: The Aging Brain (1 credit hour)**

**GERON 5611, SOC WK 5611, Mechanics of Aging II: The Aging Brain (1 credit hour)**

**GERON 5612, SOC WK 5612, Mechanics of Aging III: Diseases of Aging (1 credit hour)**

**GERON 6441, Aging and Health Behavior**

**GERON 6497, Interdisciplinary Geriatric Care**

**C. Psychosocial Aspects of Aging - 3 credits** selected from the following:

**GERON (PSYCH) 4376, Mental Health and Aging**

**GERON (SOC) 4361, Sociology of Aging**

**D. GERON 6495, Practicum in Gerontology -3 credits**

**E. Electives in Gerontology - 6 credits**

#### **Graduate Certificate in Long-Term Care Administration (18 credit hours)**

The graduate certificate in long-term care administration is designed for individuals who either work in or wish to consider entering the field of long-term care administration. This field (home, community, and institutionally-based) is

the fastest growing segment of the health care industry, and there is a critical need for professionally trained personnel with the knowledge and skills to address the complex issues in gerontology. This program can be applied towards meeting nursing home administration licensure requirements. (Missouri contact hour requirements vary with education and long-term care experience. Please check with the Missouri Board of Nursing Home Administration, Jefferson City, MO (573) 751-3511 for a copy of licensure eligibility requirements.)

The graduate certificate can be earned by itself or in conjunction with the pursuit of the Master of Science in Gerontology, the Master's in Social Work, or a graduate degree in another field.

The graduate certificate in long-term care administration requires the completion of 18 graduate credit hours which will apply toward the Master of Science in Gerontology for students who elect to continue their graduate studies in gerontology at the University of Missouri-St. Louis.

#### **A. Six of these 18 hours are gerontology courses:**

- **GERON 6441, Aging and Health Behavior (3 hours) or GERON 6443, Health Care Policy (3 hours) (same as SOC WK. 6443, P PAD 6430, or POL SCI. 6443)**
- **GERON 6498, Advanced Seminar in Gerontology: Long-term Care Administration (3 hours)**

**B. Nine of these hours are in management. Students much choose the selection of courses in either Business Administration (1) or Nonprofit Management (2).**

1. 9 hours of coursework in Business Administration consisting of:

1. **MANGMT 5600, Organizational Behavior and Administrative Process (3 hours) (same as PPA 6600)**
2. **ACCTNG 5400, Financial Accounting: Theory and Practice (3 hours)**
3. **MANGMT 5621, Managing Human Resources (3 hours)**

**Or**

2. 9 hours of coursework in Nonprofit Management, consisting of:

- A. **PP ADM 4940, Leadership and Management in NonProfit Organizations (3 hours)**
- B. **PP ADM 4960, American Philanthropy and Nonprofit Resource Development (3 hours)**
- C. **PP ADM 4911, Management Issues in Nonprofit Orgs.:Staff Management Issues (1 hour)**
- D. **PP ADM 4912, Management Issues in Nonprofit Orgs.:Legal Issues in Governing and Managing Nonprofit Orgs. (1 hour)**

**E. PP ADM 4913, Management Issues in Nonprofit Orgs.:Financial Issues (1 hour)**

**Three hours of internship (Practicum in Gerontology, GERON 6495),** are also required. Graduate students who already have professional field experience equivalent to the internship may request an exemption. Any request for an exemption from the internship requirement must be approved by the gerontology program director after a review of the student's professional or managerial field experience with appropriate documentation. Students who receive an exemption must take another 3 hours of elective coursework from the gerontology program offerings.

Requirements of admission to the graduate certificate program are the same as those required for admission to the Graduate School: an undergraduate degree, 2.75 or better GPA, and three letters of recommendation.

**Undergraduate Certificate in Gerontological Studies**

A certificate in gerontological studies, a multidisciplinary course of study, is available at the University of Missouri-St. Louis. This program provides an opportunity for students to obtain a focused specialty in gerontology in addition to their majors. It utilizes offerings in the College of Arts and Sciences, College of Nursing, the College of Business, and the College of Education. It is appropriate for students in any of the colleges of the University.

**Certificate Requirements**

A student may earn the certificate in gerontological studies by completing a total of 15 hours. Courses must be chosen from at least two of the following four topic areas. No more than 3 credit hours from Research/ Practicum Experience courses will be allowed. The student must have the approval of the director of the gerontology program before enrolling in the course. Courses taken to fulfill the requirements may not be taken on a satisfactory/unsatisfactory basis. New courses continually are added, so it is advisable to check with the director each term. Many courses are cross-listed and also have a gerontology designation.

**Humanities**

GERON (ENGL) 1115, Images of Age in Film  
GERON (ENGL) 1116, Images of Age in Literature  
GERON (PHIL) 2256, Bioethics

**Social Sciences**

GERON (INTDSC) 1220, Special Topics in Gerontology  
GERON (INTDSC) 2170, Aging in America Concepts and Controversies  
GERON (PSYCH) 2272, Developmental Psychology: Adulthood and Aging  
GERON (ANTHRO) 3215, Growing Old in Other Cultures  
GERON (SOC) 4361, Social Gerontology  
GERON (PSYCH/SOC WK) 4376, Mental Health and Aging

**Career Outlook**

The increasing number of elderly in the population has greatly expanded job opportunities in gerontology in the last decade, and job prospects for the future are equally bright. Career possibilities include nursing home administration, administration and planning of community-based programs for the elderly, recreational programming, and counseling of the elderly.

**Course Descriptions**

**1115 Images of the Elderly in Film (3)**

Same as ENGL 1150. 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.

**1116 Images of Age in Literature (3)**

Same as ENGL 1160. Reading and discussion of literature that portrays aging and old age in various settings. 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.

**2170 Aging in America: Concepts and Controversies (3)**

Same as SOC 2170, SOC WK 2170, INTDSC 2170. This course examines the major theoretical and service issues connected to the study of older adults and their families, using multidisciplinary perspectives. Students are provided with an introduction to the field of aging through an examination of current social issues and controversies. This course emphasizes student involvement through class discussion, and is appropriate for students in the arts and sciences, business, communication, education, and nursing.

**2256 Bioethics (3)**

Same as PHIL 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.

**2272 Developmental Psychology: Adulthood and Aging (3)**

Same as PSYCH 2272. Personality, social, and physiological development from the onset of early adulthood through maturity and old age.

**2280 Psychology of Death and Dying (3)**

Same as PSYCH 2280. Prerequisite: PSYCH 1003. A beginning exploration of end-of-life issues.

**4361 Social Gerontology (3)**

Prerequisite: SOC 1010 and junior standing or consent of instructor. Same as SOC 4361. Topics include sociological theories of aging, technological and social change and its

effects on the environment of older people, and prejudice and discrimination against the elderly.

**4376 Mental Health and Aging (3)**

Prerequisites: 9 hours of psychology, graduate standing or consent of instructor. (Same as PSYCH 4376 and SOC WK 4376). (MSW students normally take all foundation courses prior to enrolling in this course). A survey of recent theory and research in mental health issues for older populations. The primary focus is on major psychological disorders prevalent among the elderly and in treatment approaches for elders.

**4490 Directed Readings (1-3)**

Prerequisite: Consent of instructor. Directed readings and research or field work. May be repeated for a maximum of three hours.

**5361 Advanced Social Gerontology (3)**

Same as Sociology 5361. Prerequisites: Graduate Standing. An examination of sociological theories of aging, technological and social change and its effects on the environment of older people, prejudice and discrimination against the elderly.

**5376 Psychopathology and Aging (3)**

Prerequisites: Graduate Standing. Recent theory and research in mental health issues for older populations. The primary focus is on major psychological disorders prevalent among older adults and in assessment and treatment approaches for aging populations.

**5440 Cultural Aspects of Aging (3)**

Same as ANTHRO 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.

**5610 Mechanisms of Aging I: The Aging Body (1)**

Prerequisites: Graduate standing and BIOL 1102 or equivalent. (Same as SOC WK 5610 and PSYCH 5610). (MSW students normally take all foundation courses prior to enrolling in this course). Introduces students with a social sciences/humanities background to the normal changes in the biology and chemistry of the aging human body and how these changes affect behavior.

**5611 Mechanisms of Aging II: The Aging Brain (1)**

Prerequisites: GERON 5610 or SOC WK 5610 or PSYCH 5610 or equivalent or consent of instructor. (Same as SOC WK 5611 and PSYCH 5611). (MSW students normally take

all foundation courses prior to enrolling in this course) Provides students with a social sciences/humanities background a basic introduction to the biology and chemistry of the aging human brain and nervous system and how these systems impact behavior.

**5612 Mechanisms of Aging III: Diseases of Aging (1)**

Prerequisites: GERON 5610 and GERON 5611 or SOC WK 5610 and 5611 or PSYCH 5610 and PSYCH 5611 or equivalents or consent of instructor. (Same as SOC WK 5612 and PSYCH 5612). (MSW students normally take all foundation courses prior to enrolling in this course). Provides students with a social sciences/humanities background with information on how diseases associated with aging exacerbate the effects of aging on the human body, mind, and behavior.

**5620 Dying, Grief & Death in Older Adulthood (3)**

Same as Social Work 5620. Prerequisites: Six hours of graduate level gerontology, psychology, counseling and/or social work, or special approval from the instructor. Undergraduates in their senior year may also request approval for entry from the Director of Gerontology. For those planning to work with older adults in counseling, healthcare, hospices, and/or community support settings. Will examine trajectories to death in older age, the dying process, influences of medical and aging-related conditions, euthanasia and suicide, life extension and longevity, personal beliefs and existential responses, how individuals and families cope, ethical concerns, and strategies for supportive intervention. Topics are addressed from clinical, supportive care, and interdisciplinary perspectives.

**6441 Aging and Health Behavior (3)**

Prerequisite: Graduate standing. Same as PSYCH 6441. This course examines sociocultural influences on health care practices of older adults. The role of social support and other social resources in the health behavior of older adults is emphasized. Topics include self-care decisions, formal service utilization, family caregiving, and planned interventions for older adults.

**6442 Minority Aging (3)**

Prerequisite: Sociology 4361 or consent of instructor. (Same as Sociology 6442) The experience of aging for racial and ethnic minority elderly will be examined in the context of their families, communities, and society. Key questions concerning minority elderly frame the course, such as the relative importance of culture versus social structure, and the applicability of gerontological theory to the minority aging experience.

**6443 Health Care Policy (3)**

Prerequisites: Graduate standing and consent of instructor. Same as POL SCI 6443, P PADM 6430, SOC 6443 and SOC WK 6443. (MSW students will normally take the social policy foundation course prior to 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)**

Prerequisite: Consent of instructor. Same as PP ADM 6444 and POL SCI 6444 and SOC 6444. 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.

**6450 Gerontological Assessment (3)**

Prerequisites: Graduate Standing (Same as SOC WK 6450). This course provides an overview of psychosocial assessment with older adults and their family caregivers. Major areas of gerontological assessment practice are considered, including dementia, mood disorders, suicide, grief, alcoholism, elder abuse/neglect, family care giving and interdisciplinary team issues.

**6460 Long Term Care Administration (3)**

Prerequisites: Graduate Standing. This course provides an overview of long term care programs and services for older adults. Administrative issues are reviewed, including patient services, state licensure requirements, human resource management, and reimbursement practices. Characteristics of well-functioning facilities are addressed, as well as consultation with families during the placement decision process.

**6490 Directed Study (1-3)**

Prerequisite: Consent of instructor. Designed to give the student an opportunity to pursue a more in-depth study of a problem area in gerontology than is normally covered in more formal courses. May be repeated for a total of 6 credit hours.

**6495 Practicum in Gerontology (3)**

Prerequisite: Consent of instructor. Supervised work experience in an agency that serves older adults. Students are required to complete a minimum of 150 clock hours at the practicum site.

**6496 Advanced Practicum in Gerontology (3)**

Prerequisites: GERON 6495 and consent of instructor. Advanced practicum experience beyond Gerontology 6495. Students must complete a minimum of 150 clock hours of supervised fieldwork (service or research) with older adults.

**6497 Interdisciplinary Geriatric Care (2)**

Same as VIS SCI 6497. Prerequisite: Consent of instructor. Interdisciplinary approaches that address the medical and social needs of the elderly will be examined. Information about geriatric care and social issues affecting the well being

of older adults will be provided. Clinical, theoretical, and educational perspectives will be presented.

**6498 Advanced Seminar in Gerontology (3)**

Prerequisite: Graduate standing. This course will provide in-depth analysis of specialized topics in gerontology, which are not covered in required courses. (Course may be repeated for a maximum of nine credits, assuming topics are different).

**6499 Topics in Gerontology (1-2)**

Prerequisite: Graduate standing. Analysis of a current problem in gerontology. (Course may be repeated for maximum of five credits, assuming topics are different).

**Department of Sociology****Faculty**

**Chikako Usui**, Associate Professor, Chairperson  
Ph.D., Stanford University  
**George J. McCall**, Professor Emeritus  
Ph.D., Harvard University  
**Harry H. Bash**, Associate Professor Emeritus  
Ph.D., University of Pennsylvania  
**Sarah L. Boggs**, Associate Professor Emerita  
Ph.D., Washington University  
**Nancy Shields**, Associate Professor  
Ph.D., Southern Illinois University-Carbondale  
**Teresa J. Guess**, Associate Professor  
Ph.D., University of Missouri-Columbia  
**Robert Keel**, Teaching Professor  
M.A., Washington University  
**Melissa Bleile**, Adjunct Assistant Professor  
Ph.D., University of Missouri-St. Louis  
**Susan Tuteur**, Adjunct Assistant Professor  
Ph.D., University of Chicago  
**Larry Irons**, Adjunct Assistant Professor  
Ph.D., Washington University  
**John Perry**, Senior Lecturer  
M.A., St. Mary of the Woods College  
J.D., University of Arizona College of Law  
**Linda Benson**, Lecturer  
M.A., UM-St. Louis  
**Kathy Furgason**, Lecturer  
M.Ed., Maryville University

The faculty prides itself on its commitment to high standards of teaching and sound scholarly research. Systematic course evaluations by students each semester are taken seriously, and individual faculty have been singled out as nominees and recipients of university Excellence in Teaching awards. The ongoing scholarly research of the faculty is reflected in the department's upper-level and graduate courses, as well as in the numerous publications in journals and books or presentations at national and international meetings. Information on current academic activities of the faculty is posted on the departmental Web page <http://www.umsl.edu/divisions/artscience/sociology>.

**General Information****Degrees and Areas of Concentration**

The sociology department offers courses leading to the B.A. in sociology and the B.S. in sociology; in cooperation with the College of Education, the B.A. in sociology with teacher certification; in cooperation with the College of Business Administration, the B.A. in sociology with a business option; and cooperative minor or certificate programs in American studies, black studies, legal studies, urban studies, religious studies, women's and gender studies, and international studies.

Students completing the B.A. or B.S. degree in sociology are well-prepared for graduate study in sociology or careers in industry, health and social services, and urban, intergroup, political, or community issues. Since the sociology department also offers work leading to the M.A. degree in sociology (see below), opportunities are available for graduate-level instruction to selected undergraduate students.

In addition to a balanced program of basic undergraduate to advanced graduate courses, the department provides a range of opportunities for students to develop specialized research methods. Seminars and internship placements are offered in support of this goal and are typically designed around the ongoing research interests of department faculty. The department provides students with opportunities for intensive direction and guidance from faculty. Students and faculty working in particular subject areas consult freely with members working in other areas. Research interests of sociology faculty extend beyond the department into a wide variety of joint projects with faculty in other departments and programs, including criminology and criminal justice, engineering, political science, trauma studies, women's and gender studies, gerontology, public policy research centers, and the Center for International Studies.

A minor in sociology at the University of Missouri-St. Louis is available to students majoring in related areas.

**Undergraduate Studies****General Education Requirements**

Students must satisfy the university and college general education requirements. Courses in sociology may be used to meet the social science requirement. The foreign language requirement for the B.A. degree may be satisfied in any language. Not more than 12-15 hours of community college transfer credit may be applied toward the combined minimum of required credit hours for the B.A. (30 credit hours) or B.S. (36 credit hours) major. No course in which a grade below a C- is received will count toward satisfying the core requirement.

**Satisfactory/Unsatisfactory Restrictions**

Sociology majors may not take courses counting toward their major requirements on a satisfactory/unsatisfactory basis.

**Learning Goals and Outcomes**

The sociology major should study, review, and demonstrate understanding of:

The discipline of sociology and its role in contributing to our understanding of society, such that the student will be able to:

Describe how sociology contributes to a social scientific understanding of social life; and apply the sociological imagination, sociological principles and concepts to her/his own life.

**Courses:** Introduction to Sociology; Social Psychology; Urban Sociology; Social Problems.

The role of theory in sociology, such that the student will be able to:

Define theory and describe its role in building sociological knowledge;  
Compare and contrast basic theoretical orientations;  
Show how theories reflect the historical context of times and cultures in which they were developed; and  
Describe and apply some basic theories or theoretical orientations in at least one area of society.

**Courses:** Sociological Theory; all 4000 level courses.

The role of evidence and qualitative and quantitative methods in sociology, such that the student will be able to:

Identify basic methodological approaches for gathering data;  
Design a research study in an area of choice and explain why various decisions were made; and  
Critically assess a published research report.

**Courses:** Statistics; Methods; Qualitative Methods; Survey Research Practicum.

The role of data analysis in sociology, such that the student will be able to:

Use the necessary technical and analytic skills to retrieve relevant information and data from the internet;  
Use computers appropriately for data analysis;  
Accurately convey data findings in writing; and  
Describe and apply the principles of ethical practice as a sociologist.

**Courses:** Statistics; Methods; Qualitative Methods; Social Psychology; all 4000 level courses.

Basic concepts in sociology and their fundamental theoretical interrelations, such that the student will be able to:

Define, give examples, and demonstrate the relevance of the following: culture; social change; socialization; social structure; institutions; and differentiations by race/ethnicity, gender, age, and class.

**Courses:** Introduction to Sociology; all 4000 level courses.

How culture and social structure operate, such that the student will be able to:

Demonstrate the interdependencies of social institutions, and the reflexive nature of interaction between individuals and groups within these institutional structures;  
Demonstrate how social change affects social structures and individuals;  
Demonstrate how culture and social structure vary across time and place, and the effect of such variations; and  
Identify examples of specific policy implications based upon social structural analysis.

**Courses:** Introduction to Sociology; Sociological Theory; Social Psychology; Sociology of the Family; Sociology of Health; Sociology of Deviant Behavior; Alcohol, Drugs, and Society; Social Problems; Gerontology.

Reciprocal relationships between individuals and society, such that the student will be able to:

Provide a sociological analysis of the development of the self;  
Demonstrate how societal and structural factors influence individual behavior and the development of the self;  
Demonstrate how social interaction influences society and social structure; and  
Distinguish sociological approaches to analyzing the self from psychological, economic, and other approaches.

**Courses:** Introduction to Sociology; Social Psychology; Sociological Theory; Gerontology.

The macro/micro distinction, such that the student will be able to:

Compare and contrast theories at one level with those at another;  
Summarize research documenting connections between the two; and  
Identify a related research question that could be pursued to more fully understand the connections between the two.  
**Courses:** Introduction to Sociology; Social Problems; Sociological Theory; Sociology of the Family; Urban Sociology; Gerontology.

At least one specialty area within sociology, such that the student will be able to:

Summarize basic questions and issues in the specialty area;  
Compare and contrast basic theoretical orientations in the specialty area;  
And summarize current research in the specialty area.  
Specialty area Inequality **Courses:** Urban Sociology; Sociology of Conflict; Sociology of Deviant Behavior; Alcohol, Drugs, and Society; Criminology and Criminal Justice cross-listed courses.

A faculty advisor can approve other areas and courses.

The internal diversity of American society and its place in a global context, such that the student will be able to:

Describe the significance of global variations by race, class, gender, and age; and know how to appropriately generalize or resist generalizations across groups.  
**Courses:** Introduction to Sociology; Gender Roles; Sociology of Wealth and Poverty; Urban Sociology; Social Problems; Gerontology.

To think critically, such that the student will be able to:

Demonstrate an ability to move from recall analysis and application to synthesis and evaluation;  
Identify underlying assumptions in particular theoretical orientations or arguments;  
Identify underlying assumptions in particular methodological approaches to an issue;  
Describe how patterns of thought and knowledge are directly influenced by social structures; and  
Present opposing viewpoints and alternative hypotheses on various issues.  
**Courses:** Sociological Theory; Research Methods; all 4000 level courses.

**Degree Requirements****Bachelor of Arts in Sociology**

In addition to specific baccalaureate degree requirements of the College of Arts and Sciences, candidates must complete 30 hours of sociology course credit including the following required core courses:

**1010**, Introduction to Sociology

**3210**, Sociological Theory

**3220**, Sociological Statistics, or

**MATH 1310**, Elementary Statistical Methods, or

**MATH 1102**, Finite Mathematics I, or **MATH 1105**, Basic Probability and Statistics

**3230**, Research Methods

**Note:** The core requirements should be completed as early as possible, preferably by the end of the junior year. Sociological Statistics is a prerequisite for research methods. Only 45 hours of sociology can be applied to the 120 hour total required for a degree from the University of Missouri-St. Louis.

For the B.A. in sociology candidates are required to take the core courses (12 hours) and at least 18 additional hours of sociology courses, selected according to career objectives, with at least six hours at the 4000 level (no more than three hours of either SOC 4350, Special Study or SOC 4385, Internship in Sociology may be applied to this 4000 level requirement). No more than three hours in sociology below the 2000 level can count towards this 18-hour requirement. Applied training through one or more research courses may be used as part of the requirement for the major.

**Bachelor of Science in Sociology**

For the B.S. in Sociology, candidates are required to take the core courses (12 hours) and complete the following requirements.

Eight additional sociology courses (24 hours), chosen with the approval of the student's faculty advisor, are required for the B.S. in Sociology, including a minimum of four courses (twelve hours) at the 4000 or 5000 level (no more than three hours of either SOC 4350 Special Study or SOC 4385, Internship in Sociology may be applied to the 4000 or 5000 level requirement). No more than three hours in sociology below the 2000 level can count toward this 24-hour requirement.

**Related Area Requirements:**

Candidates for the B.S. in sociology also must complete five courses from at least four of the following nine areas: computer science, economics, mathematics, philosophy, political science, probability and statistics, psychology, public policy administration, and international studies. Specific course selections must be approved by a faculty advisor.

**Combined Degree: Bachelor of Science in Civil Engineering and Bachelor of Science in Sociology**

Students pursuing the combined degree are simultaneously enrolled in the College of Arts and Sciences and the Joint Undergraduate Engineering Program. They have an engineering faculty adviser as well as a faculty adviser in the Department of Sociology.

A program of 159 semester hours is required for the B.S. in civil engineering and the B.S. in sociology. Earned alone, the B.S. in engineering requires 137 semester hours. Because of the overlap in required courses for the two curricula, the combined degree program requires only 22 additional semester hours.

For additional information, see the section in this *Bulletin* labeled University of Missouri-St. Louis/Washington University Joint Undergraduate Engineering Program or contact:

Associate Dean of the Joint Undergraduate Engineering Program, 228 Benton Hall  
University of Missouri-St. Louis  
One University Blvd., St. Louis, MO 63121.

**B.A. or B.S. in Sociology with Teacher Certification**

Students must complete the B.A. or B.S. in sociology requirements, as well as the requirements for teacher certification. (See the College of Education section of this *Bulletin*.)

**B.A. or B.S. in Sociology with an Interest in Business**

The following courses are suggested for students seeking careers in sales, market research, and so forth. In addition to the B.A. or B.S. in sociology requirements, the following core courses are suggested:

**ECON 1001**, Principles of Microeconomics  
**ACCTG 2400**, Fundamentals of Financial Accounting  
**SOC 4646**, Demographic Techniques

Students may then choose to complete one of the following three sets of courses:

**1) Marketing Management**

**3700**, Basic Marketing  
**3740**, Marketing Intelligence  
**3760**, Industrial Marketing

**2) Financial Management**

**3500**, Financial Management  
**3501**, Financial Policies  
**3520**, Investments

**3) Accounting**

**2410**, Managerial Accounting  
**3401**, Intermediate Accounting I  
**3411**, Cost Accounting

### Requirements for the Minor

Students must apply for the minor in sociology. Candidates must complete at least 15 hours of departmental course work in sociology, of which at least 9 must be completed at UMSL's department of sociology and must be beyond those applied to the candidate's major. At least 6 hours must be at the 4000 level (no more than 3 hours of either SOC 4350, Special Study, or SOC 4385, Internship may be applied to this 4000 level requirement).

Candidates who anticipate that their background in sociology may play a substantial role in their career plans are strongly encouraged to take some or all of the core requirements.

Candidates must have a cumulative grade point average of 2.0 or better in all courses pertaining to the minor. Department courses taken on a satisfactory/unsatisfactory basis may not be applied to the minor.

### Department Awards

The department offers several annual awards to outstanding students on the basis of merit.

**The Ray Collins Alumni Award** is given annually by the Sociology Alumni Association to the top graduating senior. The awardee is selected by the faculty on the basis of GPA, and the award consists of first-year membership dues in the Sociology Alumni Association and a cash award.

**Honors Program Student Association Awards** are given annually to exceptional students. The awards include student affiliate memberships in the Honors Program Student Association of the American Sociological Association to aid the establishment of a network of colleagues who are at similar points in their career development.

**The Alumni Agent Scholarship and the Sociology Alumni Scholarship** are given to deserving sociology majors annually. The awardees are selected by the faculty on the basis of merit.

A series of undergraduate awards are given to outstanding students. The Freshman Sociology Award is given to the outstanding freshman student in lower-division sociology course work; the Outstanding Junior Sociology Major Award is given to the outstanding junior sociology major; the Outstanding Sociology Minor Award is presented to the graduating student with the most outstanding minor GPA record; and the Outstanding Sociological Statistics and Methods Award is given to the sociology major with the best overall record in SOC 3220 and 3230. This award carries a stipend for the student to serve as an undergraduate course assistant for SOC 3220, or 3230.

### Department Honors

The sociology department will award department honors for those B.A. and B.S. degree candidates in sociology with an overall grade point average of 3.2 or better. They must also

successfully complete an independent study through SOC 4350, Special Study.

### Undergraduate Certificate on Disaster and Risk Management

The undergraduate certificate program on Disaster and Risk Management offers a multi-disciplinary course of study focusing on the key challenge of developing resilience against disaster—preventing, preparing for, and responding to disasters and catastrophes. It brings together a range of disciplines to provide students with theoretical and practical insights into managing risks posed by natural, accidental, and intentional threats confronting urban communities. The certificate program emphasizes social psychological, organizational, legal, and political relationships brought to bear on the socio-technical systems designed to prevent, prepare for, or respond to disasters and catastrophes. It provides educational and practical opportunities for students planning careers in public safety, counterterrorism, community and research planning, public policy making, emergency management, leadership in the public sector, and the mass media. The certificate program aims to guide students in learning to manage efforts of public and private institutions to build resilience in their own socio-technical systems and in the community. Each discipline participating in the certificate program brings a distinct perspective to bear on the key issues involved in developing resilience in homeland security. Sociology offers a framework on the relationship of socio-technical systems and community organization that will prove conducive to students gaining both theoretical and practical insights into threats posed by disaster and catastrophe.

Undergraduate students earn a certificate on Disaster and Risk Management by completing 18 hours with a GPA of 2.0 or better from the following courses:

**SOC 4414**, Social Perspectives on Catastrophes and Homeland Security Policies (3 hrs)

**SOC 4450**, Disaster and the Law (3 hrs)

**POL SCI 3200**, Constitutional Law (3 hrs)

**ECON 4160**, Geospatial analysis in the Social Sciences (GIS) (3 hrs)

**PSYCH/WGST 2232**, Psychology of Victims (3 hrs) **OR**

**SOC 3250** Sociology of Victimization (3 hrs)

**BUS AD 3798**, Transportation Security, Safety, and Disaster Preparedness (3 hrs)

**MEDIA ST 4040**, Disaster and Media Management (3 hrs)

**COMM 3150**, Crisis, Disaster, and Risk Communication (3 hrs)

Special topic courses relevant to disaster and risk management may be included in the certificate program when approved in advance by the Coordinator of the Disaster and Risk Management Certificate.

**Graduate Studies****2+3 B.A. and M.A. in Sociology**

The 2+3 combined B.A./M.A. program in sociology provides an opportunity for students of recognized academic ability and educational maturity to fulfill integrated requirements of the undergraduate and master's degree programs from the beginning of their junior year. Because of its accelerated nature, the program requires the completion of some lower-division requirements of (12 hours) before entry into the three-year portion of the program. When all the requirements of the B.A. and M.A. programs have been completed, the 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, of which 30 must be at the 4000 or 5000 levels. In qualifying for the B.A., students must meet all University and college requirements, including the requirements of the undergraduate major described previously. During the junior and senior years, students normally take a 4000 level research practicum course, SOC 5400, SOC 5402, and SOC 5404. In qualifying for the M.A., students must meet all University and Graduate School requirements, including satisfactory completion of a minimum of 30 graduate credit hours. Up to 12 graduate credit hours may be applied simultaneously to both the B.A. and M.A. programs. Any 4000 level course applied to the M.A. requirements will require additional work to qualify for graduated credit.

Students should apply to the Graduate Director of the Department of Sociology for admission to the 2 + 3 combined degree program in sociology the semester they will complete 60 undergraduate degree credit hours, but no later than the accumulation of 90 credit hours. 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 2 + 3 programs under provisional graduate status until they have completed 30 credit hours with a grade point average of 3.0 or higher. After completion of the provisional period, and with recommendation of the Graduate Director, 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 2 + 3 combined degree program will be awarded the B.A. degree when they have successfully completed all the requirements for the degree.

The following requirements must be completed prior to enrolling in the 2 + 3 program:

**1010**, Introduction to Sociology and three additional sociology courses.

The following undergraduate courses are required for majors in the 2 + 3 program:

**3210**, Sociological Theory

**3220**, Sociological Statistics (or an approved statistics course)

**3230**, Research Methods

**Graduate Sociology Requirements for Students in the 2 + 3 Program**

The following graduate courses are required at the 4000 to 5000-level:

1. **SOC 5400**, Proseminar in Sociology
2. **SOC 5402**, Advanced Quantitative Techniques
3. **SOC 5404**, Advanced Methodology
4. **Five additional courses (15 hours) that have been approved by the Graduate Director**

**Graduate Exit Requirements:**

A student's program must include one of the following exit projects: a 6-hour internship (SOC 5480, Individual Study) or a 6-hour preparatory sequence and an approved paper (SOC 5490, Supervised Research). 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 or thesis.

**M.A. in Sociology**

The department offers a flexible program of studies leading to the Master of Arts degree in sociology. Course work combines intensive examination of the core areas of sociology with acquisition of the analytical skills of sociological investigation. A variety of career options are available to the master's-level graduate, including: program evaluation and research; field or casework related to community issues; administrative roles in social agencies and planning organizations; or doctoral studies in sociology or related fields.

The curriculum is designed to serve the needs of full-time students as well as working students who are able to engage only in part-time studies. This design allows pre-career and mid-career students to prepare for employment in education, service agencies, community organizations, government agencies, or businesses. The curriculum also invites students to take advantage of the university's urban setting through integration of selected work experiences with practicum courses and academic seminars under faculty guidance. The curriculum emphasizes theoretical, analytic, and substantive approaches to urban-related problem solving.

**Admission Requirements**

Individuals with at least the equivalent of the department's B.A. or B.S. degree in sociology may be admitted to the Graduate School as candidates for the M.A. degree. Students with bachelor's degrees in fields other than sociology may be admitted to pursue graduate sociology studies under the

condition that they make up core deficiencies prior to graduate work.

In addition to meeting the general admission requirements of the Graduate School, a student should ordinarily have:

- A baccalaureate degree with a minimum grade point average of 3.0.
- At least 15 hours in the social sciences, of which 12 should be in upper-level courses.
- Three letters of recommendation from persons qualified to judge the candidate's potential for success in the program.
- A statement describing the applicant's interest in graduate study in sociology.

Students who do not meet these requirements may be provisionally admitted upon approval of the department and the dean of the Graduate School. Admission and financial aid decisions are made on the basis of past academic record, program performance, and career commitment. Students wishing to continue regular employment outside the university may enroll on a part-time basis. Requests for further information about the program should be sent to:

Director of Graduate Studies  
Department of Sociology  
University of Missouri-St. Louis  
One University Blvd.  
St. Louis, MO 63121-4400

### Degree Requirements

#### Master of Arts in Sociology

Each student shall prepare an adviser-approved course of study during the first semester of enrollment. Candidates for the M.A. degree shall complete a minimum of 30 hours of approved study, at least 21 of which must be taken in courses offered by the department.

#### Core Curriculum

- 5400, Proseminar in Sociology
- 5402, Advanced Quantitative Techniques
- 5404, Advanced Methodology

The sociology department participates in a joint quantitative techniques and methodology series of courses with the other social sciences which can be substituted for the above.

**Concentration** The department offers opportunities for intensive work in one of the several research areas of department faculty members, which allows the flexibility for comprehensive and coherent exposure to the methods and insights of the discipline. Matriculating students are encouraged to plan, with their advisers, a coherent program of studies consistent with their career interests.

**Exit Requirements** A student's program must include one of the following exit projects: a 6-hour internship; SOC

5480, Individual Study or a 6-hour preparatory sequence and an approved paper SOC 5490, Supervised Research. 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 or thesis.

### Career Outlook

The following career information is adapted from the American Sociological Society Web site. For more information, see <http://www.asanet.org>.

A B.A. or B.S. in sociology is excellent preparation for graduate work in sociology for those interested in an academic or professional career as a professor, researcher, or applied sociologist.

The undergraduate degree provides a strong liberal arts preparation for entry level positions throughout the business, social service, and government worlds. Employers look for people with the skills that an undergraduate education in sociology provides. Since its subject matter is intrinsically fascinating, sociology offers valuable preparation for careers in journalism, politics, public relations, business, or public administration fields that involve investigative skills and working with diverse groups. Many students choose sociology because they see it as a broad liberal arts base for professions such as law, education, medicine, social work, and counseling. Sociology provides a rich fund of knowledge that directly pertains to each of these fields.

The M.A. offers students access to an even wider variety of careers. Sociologists become high school teachers or faculty in colleges and universities, advising students, conducting research, and publishing their work. Over 3000 colleges offer sociology courses. Sociologists enter the corporate, non-profit, and government worlds as directors of research, policy analysts, consultants, human resource managers, and program managers. Practicing sociologists with advanced degrees may be called research analysts, survey researchers, gerontologists, statisticians, urban planners, community developers, criminologists, or demographers. Some M.A. sociologists obtain specialized training to become counselors, therapists or program directors in social service agencies.

Today, sociologists embark upon literally hundreds of career paths. Although teaching and conducting research remains the dominant activity among the thousands of professional sociologists today, other forms of employment are growing both in number and significance. In some sectors, sociologists work closely with economists, political scientists, anthropologists, Psychologists, social workers and others reflecting a growing appreciation of sociology's contributions to interdisciplinary analysis and action.

**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 University of Missouri-St. Louis 2001-2002 Bulletin. The following courses fulfill the Social Sciences breadth of study requirements as described in that Bulletin:

1010, 1040, 2102, 2103, 2160, 2180, 3200, 3202, 3210, 3220, 3224, 3230, 3231, 3241, 3268, 3280, 3286, 4040, 4300, 4310, 4312, 4316, 4317, 4320, 4331, 4336, 4338, 4340, 4344, 4350, 4354, 4360, 4361, 4378, 4380, 4940

**1010 Introduction to Sociology (3) [V, SS]**

An introduction to sociological approaches to human behavior, including types of social organizations, patterns of social interaction, and social influences on individual conduct.

**1040 Social Problems (3) [V, SS]**

Conditions defined by society as social problems, as well as potential solutions, are examined from various sociological perspectives. Emphasis is given to problem issues prevalent in metropolitan settings. Analyses focus on victims and beneficiaries of both problem conditions and alternative solutions.

**1999 The City (3) [MI, V, SS]**

Same as POL SCI 1990, and INTDSC 1990. 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 for freshmen and sophomores. It is open to juniors and seniors with the consent of instructor.

**2102 Introduction to Women's and Gender Studies (3)**

Same as WGST 2102, SOC WK 2102, and HIST 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 diverse female and male experiences and gendered power relationships.

**2103 Gender Roles in Society (3)**

Same as WGST 2103. Prerequisite: SOC 1010 or WGST 1012 or consent of instructor. The study of social processes through which gender roles are developed and acquired; the impact of gender roles on personal identity and social conduct; the relationship between gender roles and social inequality; and individual and social consequences of changing gender roles in contemporary society.

**2160 Social Psychology (3)**

Same as PSYCH 2160. Prerequisite: SOC 1010 or PSYCH 1003. Study of the interaction between individuals and their

social environment. Examination of basic principles, concepts, and methods.

**2170 Aging in America: Concepts and Controversies (3)**

Same as INTDSC 2170 and GERON 2170. This course examines the major theoretical and service issues connected to the study of older adults and their families, using multidisciplinary perspectives. Students are provided with an introduction to the field of aging through an examination of current social issues and controversies. This course emphasizes student involvement through class discussion, and is appropriate for students in the arts and sciences, business, communication, education, and nursing.

**2180 Alcohol, Drugs, and Society (3)**

Same as CRIMIN 2180. Prerequisite: SOC 1010 or PSYCH 1003. 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.

**3200 Sociology of Deviant Behavior (3)**

Prerequisite: SOC 1010 or consent of instructor. Theories of the nature, causes, and control of deviance as a social phenomenon. Application of theories to specific substantive areas, such as mental disorder, delinquency, drug abuse, suicide, unconventional sexuality, and physical disability.

**3202 Urban Sociology (3)**

Prerequisite: SOC 1010 or consent of instructor. Urbanization as a world phenomenon; urban social and ecological structures and changing life styles; the decision-making processes in urban problem-solving.

**3210 Sociological Theory (3)**

Prerequisite: SOC 1010 or consent of instructor. The nature of sociological theory. An investigation of theory from Comte through contemporary developments. Contributions made by theorists in related disciplines.

**3220 Sociological Statistics (3)**

Prerequisites: SOC 1010 and MATH 1020 or 1030. Issues and techniques of statistical analyses relevant to quantitative sociological research, e.g., elementary probability, measurements of central tendency and dispersion, measures of relationships including linear regression and correlation, inferential statistics.

**3224 Marriage and the Family (3)**

Same as NURSE 3224 and WGST 3224. Prerequisite: SOC 1010 or consent of instructor. The study of patterns of close relationships, and how these relationships are influenced by larger social forces. Topics include: love, dating, mate selection, cohabitation, alternative lifestyles, working families, parenting, single mothers, families in crisis, domestic violence, and divorce. Universal and variable



aspects of family organization, family role systems, and changes in family social structure.

**3230 Research Methods (3)**

Prerequisites: SOC 1010 and satisfaction of mathematics proficiency requirement and SOC 3220 or consent of instructor. Research planning and interpretation, principles of research design, measurement, and sampling. Techniques for the collection, analysis, and presentation of data. The course also includes an introduction to the Statistical Package for the Social Sciences (SPSS) and lab exercises.

**3241 Globalization and Its Impact on Society and Culture (3)**

Prerequisite: SOC 1010 or consent of instructor. This course examines a variety of economic, cultural, and social changes that are transforming our world. It clarifies what globalization is and how it is affecting societies around the world. Topics include an overview of theories of globalism and global culture, and roles of technology and the media in shaping society and people's everyday lives.

**3250 Sociology of Victimization (3)**

Same as WGST 3250. Prerequisites: Sociol 1010. Examines the role of social factors in a wide range of kinds of victimization—crime, violence, natural disasters, accidents, disease, etc. The topic of social reactions to various kinds of victimization is also covered. Sociological theories of victimization are emphasized.

**3268 The Sociology of Conflict (3)**

Prerequisite: SOC 1010 or consent of instructor. The conditions under which social conflicts arise, develop, and are terminated (or in some cases resolved) are examined. The functions of different levels of conflict are studied to determine the potential effects and outcomes of planned intervention.

**3280 Society and Technology (3)**

Prerequisite: SOC 1010 or consent of instructor. Technology in industrial and post-industrial societies. The social shaping of technological systems. The role of technology in social change.

**3317 Social Psychology of Conflict and Negotiation (3)**

Same as PSYCH 3317. Prerequisite: nine (9) hours of Psychology or nine (9) hours of sociology, including PSYCH 2160 or SOC 2160. The purpose of this course is to understand how social psychological phenomena affect the processes and outcomes of negotiation and other forms of social conflict. The course is designed to be relevant to the broad spectrum of conflict situations people face in their work and daily lives. A basic premise of this course is that while analytical skills are needed to discover solutions to social problems, negotiation skills are needed in order for these solutions to be accepted and implemented.

**Note: Any 4000 level course taken for major elective credit requires prior completion of two of the following: SOC 3210, SOC 3220, or SOC 3230.**

**4040 Survey Research Practicum (3)**

Same as ECON 4140 and POL SCI 4040. Prerequisites: Junior standing, SOC 3220, SOC 3230, and consent of instructor. The execution of a sample survey, including establishing study objectives, sampling, questionnaire construction, interviewing, coding, data analysis, and presentation of results. May be taken more than once for credit provided the course topic is different each time.

**4300 Communities and Crime (3)**

Same as CRIMIN 4300. Prerequisite: CRIMIN 1110, 1120, 1130, 2210, 2220, ENGL 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. Community crime prevention efforts are also addressed.

**4310 Selected Topics in Sociological Theory (1-3)**

Prerequisite: SOC 3210. Focused examination of selected issues, the contributions of individual theorists, and methodological implications in the study of sociological theory. May be taken twice for credit.

**4312 Sociology of Wealth and Poverty (3)**

Prerequisites: SOC 1010 and junior standing or consent of instructor. Theory and research on social stratification and inequality in contemporary societies.

**4316 Power, Ideology, and Social Movements (3)**

Prerequisite: SOC 1010 and Junior Standing or consent of instructor. Effect of events and social processes on thought and action in the twentieth century. Social functions of ideologies as expressed in movements and formal and informal organizations seeking social change.

**4320 Forms of Criminal Behavior (3)**

Same as CRIMIN 4320. Prerequisite: CRIMIN 1110, 1120, 1130, 2210, 2220, ENGL 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 CRIMIN 4325 and WGST 4325. Prerequisites: CRIMIN 1110, 1120, 1130, 2210, 2220, ENGL 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 Crimin diversity requirement.

**4331 Qualitative Methods in Social Research (3)**

Prerequisite: SOC 3220 and SOC 3230, or their equivalent, or consent of instructor. This course is devoted to such qualitative methods as participant observation, intensive interview, content analysis, and oral history, among others. The place of these kinds of techniques in social research, as well as the issues raised by them, will be considered. Students will participate in individual or group research projects using one or more of the methods discussed.

**4336 Organizations and Environments (3)**

Prerequisites: SOC 1010 and junior standing or consent of instructor. Internal and external forces that influence the structures, adaptive flexibility, and actions of public and private organizations and agencies are examined. Specific foci include: organizational responses to environmental opportunities, constraints, and contingencies; sources of conflict and impediments to organizational goal attainment; and strategies for increasing organizational effectiveness, efficiency, and chances for survival.

**4338 Sociology of Health (3)**

Same as NURSE 4338. Prerequisites: SOC 1010 and junior standing. Exploration of social dimensions and issues related to health and illness, such as access to the health care delivery system; factors influencing prevention, utilization and compliance; changing relationships among health care providers and consumers; health care costs, trends, and cross-cultural variations.

**4340 Race, Crime, and Justice (3)**

Same as CRIMIN 4340. Prerequisite: CRIMIN 1110, 1120, 1130, 2210, 2220, ENGL 3100 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.

**4344 Problems of Urban Community (3)**

Prerequisites: SOC 1010 and junior standing, or consent of instructor. The urban community as an area of social action and problem solving with emphasis on the sociological aspects of urban problems.

**4350 Special Study (1-10)**

Prerequisite: Consent of instructor. Independent study through readings, reports, and field work.

**4354 Sociology of Business and Work Settings (3)**

Prerequisites: SOC 1010 and junior standing, or consent of instructor. The sociology of work and occupations in America, Europe, and Asia; organization structures and worker participation; worker attitude, behaviors, and commitment; the socialization of the worker; determinants of worker behavior; social problems of work and business; and the impact of community on work place and business behavior.

**4356 Sociology of Education (3)**

Prerequisite: SOC 1010 and junior standing, or consent of instructor. Education as a social institution, its role as an agent of socialization, and its effect upon the processes of social change and social mobility. The relationship between the school and its community.

**4360 Sociology of Minority Groups (3)**

Same as WGST 4360. Prerequisites: SOC 1010 and junior standing or consent of instructor. The study of dominant-subordinate group relations. Religion, ethnicity, race, and gender as factors in the unequal distribution of power.

**4361 Social Gerontology (3)**

Same as GERON 4361. Prerequisites: SOC 1010 and junior standing, or consent of instructor. Topics include: sociological theories of aging, technological and social change and its effects on the environment of older people, and prejudice and discrimination against the elderly.

**4365 Sociological Writing (3)**

Prerequisites: SOC 1010, ENGL 3100 and junior standing, or consent of instructor. This course offers directed practice in the interpretation and reporting of sociological research in a wide range of styles, including those appropriate for research reports, journal articles, policy papers, non-technical magazines, books and monographs, as well as oral reports to diverse consumers.

**4378 Selected Topics in Social Psychology (1-3)**

Prerequisite: PSYCH 2160 or SOC 2160, or consent of instructor. Focused examination of selected issues, concepts, and methods in the study of social interaction. May be taken twice for credit.

**4380 Selected Topics in Social Policy (1-3)**

Prerequisite: SOC 1010, Junior standing or consent of instructor. Examination of a specific sociological topic of current relevance in the community. May be taken more than once for credit provided the course topic is different each time.

**4385 Internship in Sociology (1-6)**

Prerequisite: Junior standing and consent of instructor. Students participate in supervised placements in a position related to the profession of sociology.

**4414 Social Perspectives on Catastrophes and Homeland Security Policies (3)**

Prerequisites: SOC 1010 and junior standing or consent of instructor. This course examines the way social and cultural processes shape our experience and understandings of catastrophe and disasters. It provides an analysis of the ways technological, organizational, cultural, and political forces affect policies dealing with catastrophe preparation and prevention in the United States.

**4940 Leadership and Management in Nonprofit Organizations (3)**

Same as SOC WK 4940, POL SCI 4940, and P P ADM 4940. Prerequisite: Junior standing. Addresses the role and scope of the independent sector in the United States, as well as the leadership and management of nonprofit organizations within that sector. Topics include the economic and political scope of the independent sector the role of volunteerism in a democratic society, and the role and scope of philanthropy. Topics in voluntary organization management and leadership include: the dynamics, functions and membership structure of NPOs, especially staff-board and other volunteer relations; governance and management of NPOs; resource mobilizations; and program development management and evaluation.

**5361 Advanced Social Gerontology (3)**

Same as GERON5361. Prerequisites: Graduate standing. An examination of sociological theories of aging, technological and social change and its effects on the environment of older people, and prejudice and discrimination against the elderly.

**5400 Proseminar in Sociology (3)**

Required of all entering graduate students in the fall semester of the first year of residency. An overview of the field of contemporary sociology, with emphasis on the major theories, issues, research approaches, and ethical problems in the field today, and an introduction to theory construction, measurement, and design strategies.

**5402 Advanced Quantitative Techniques (3)**

Prerequisite: SOC 3220 or consent of instructor. A study of advanced quantitative analysis of sociological data, focusing on problems of multivariate analysis, sampling theory and techniques, and the use of electronic data processing in approaching these problems.

**5404 Advanced Methodology (3)**

Prerequisite: SOC 3230 or consent of instructor. A study of methodological problems on an advanced level, focusing on contemporary issues in the processes of inquiry with particular emphasis on the applicability of different modes of research to various types of theoretical problems. Consideration of ethical problems in social research.

**5432 Survey Research Methods (3)**

Same as ED REM 6712, POL SCI 6406. 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.

**5451 Negotiating Workplace Conflict (3)**

Same as MGMT 5612 and PPAD 6680. Prerequisites: P P ADM/MGMT 6600, and Graduate Standing. Examines conflict and cooperation between individuals, groups, and organizations over control of work. A central theme is how

this conflict is expressed, controlled, and resolved. Students participate in exercises to learn basics of two-party negotiations.

**5475 Introduction to Evaluation Research Methods (3)**

Same as PSYCH 5475, P P ADMM 6750, and CRIMIN 5475. Prerequisite: 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.

**5480 Individual Study (3)**

Prerequisite: Consent of adviser and instructor. Designed to give the student the opportunity to pursue particular interests within the discipline and/or to study areas not currently covered by formal courses. Guided by faculty with appropriate interests. May be taken only twice.

**5490 Supervised Research (1-10)**

Prerequisites: Graduate standing and consent of instructor. Individual supervision of research leading to the preparation of a thesis, research paper, or publishable article, in which the student demonstrates skills in the discipline of sociology.

**6443 Health Care Policy (3)**

Prerequisites: Graduate standing and consent of instructor. Same as GERON 6443, POL SCI 6443, PP ADM 6430, and SOC WK 6443. 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)**

Prerequisites: Consent of instructor. Same as GERON 6444, PP ADM 6440 and POL SCI 6444. 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.

### Minors in Interdisciplinary Studies

The College of Arts and Sciences offers a number of interdisciplinary programs leading to either Bachelor of Liberal Studies degree or a minor or a certificate in a designated area of study. There are also a number of courses which are designated as interdisciplinary and which may or may not be part of a particular interdisciplinary minor or certificate program.

These interdisciplinary courses and programs bring together the resources of two or more subject areas to focus on topics that benefit from being studied from the point of view of more than one discipline. In some cases, faculty from several departments teach as a team, giving students the opportunity to experience faculty dialogue in a cross disciplinary fashion.

### Bachelor of Liberal Studies (BLS)

The Bachelor of Liberal Studies is a degree program that enables students to combine structured academic emphases in ways more relevant to their interests than the standard academic major.

Students who participate in this program must declare their areas of study (two minors or minor and certificate) at the time they declare that BLS is their intended degree. The plan of study should be approved at the beginning of the program.

To obtain a Bachelor of Liberal Studies (BLS), a student must complete:

- University of Missouri-St. Louis General Education Requirements (consult General Education section of course listings)
  - Communication Skills 6 credit hours
  - Managing Information 3 credit hours
  - Valuing Skills 3 credit hours
  - Social and Behavioral Sciences 9 credit
  - Humanities 9 credit hours
  - Math/Science 12 credit hours
  - (for a total of 42 credit hours)

In addition, students must complete the **State requirement (3)** and the **Cultural Diversity Requirement (3)** if not met in General Education course selection

- The university requirement of proficiency in English Composition  
ENGL 1100, Freshman Composition  
ENGL 3100, Advanced Expository Writing
- The university requirement of proficiency in Mathematics (to be completed in first 24 hours at the University)
- A Liberal Studies Concentration (33-41 hours) to consist of designated (identified) BLS Minors in participating departments or other units (minimum of 15 hours each)

or

- A designated minor and a designated multi-disciplinary certificate (minimum of 15 hours in each). **No course may be used more than once and**
- A capstone course (minimum of 3 hours) selected from one of the minors that make up the identified BLS score.

**Note:** Not all Departments have capstone courses so students must be careful to pair minors and certificates so that they have a capstone course.

### Also Required

- Minimum of 45 credit hours in Junior and Senior level course work (3000 and 4000 level)
- Electives 28-42
- A minimum of 120 credit hours
- Overall GPA of 2.0 with a minimum grade of C in all courses used in BLS combination areas
- Residency requirement, in addition to campus residency, unless otherwise specified, 9 graded hours in each minor and certificate at 2000 level or above and one capstone course

The College of Arts and Sciences (CAS), Fine Arts and Communication (CoFAC), Business Administration (EA), and the Pierre Laclède Honors College (PLHC) have joined together to make available Liberal Studies combinations involving the following units:

Department of Anthropology, (CAS)  
Department of Art & Art History, (CoFAC) Minor in Art History or Studio Art  
Department of Biology, (CAS)  
College of Business Administration, (BA) Minor in Business Administration only  
Department of Chemistry and Biochemistry, (CAS)  
Department of Communication, (CoFAC)  
Department of Criminology and Criminal Justice, (CAS)  
Department of Economics, (CAS)  
Department of English, (CAS)  
Department of Foreign Languages and Literature, (CAS)  
Department of History, (CAS)  
Pierre Laclède Honors College (PLHC)\*  
Department of Mathematics and Computer Science, (CAS)  
Department of Music, (COFAC)  
Department of Philosophy, (CAS)  
Department of Physics and Astronomy, (CAS)  
Department of Political Science, (CAS)  
Department of Psychology, (CAS)  
Department of Sociology, (CAS)  
Department of Theatre, Dance and Media Studies, (COFAC)  
Institute of Women's and Gender Studies, (CAS)

### **Bachelor of Liberal Arts: Capstone and Other Restrictions**

- A. The School of Social Work, the Colleges of Education and Nursing, and the Joint Engineering Program are not participants in the BLS program.
- B. The College of Business is participating but only the General Business Minor may be used. No capstone course will be available for the business minors. Students selecting the Business Minors as one of the components for the BLS must select the other minor from a department that does offer a capstone.
- C. The Studio Arts minors in the Department of Art and Art History will not have a capstone. Students selecting a Studio Art Minor will have to pair it with a minor that does not have a capstone.
- D. Undergraduate certificates and Interdisciplinary Minors may be paired with a minor to form a BLS core; however, since certificates and interdisciplinary minors will not have capstone courses, they must be paired with a minor that does have a capstone. However, students admitted to the Pierre Laclède Honors College who wish to present the Honors Certificate as a minor for the BLS must complete the Honors Capstone (Honors 4100, one or two credit hours) and also direct three to six hours of their Honors independent study requirement to work demonstrably relevant to their BLS program. Students should consult the BLS faculty advisor to the Honors College about this requirement.
- E. Only the Theatre minor can be used from the Department of Theatre, Dance and Media Studies. That Department will offer no capstone course.
- F. The capstone will be in addition to the courses presented for the minor. A minimum grade of C must be earned in the capstone course.
- G. Students who are planning to earn a Bachelor of Liberal Studies degree should declare the BLS as their major within the first 90 hours of the program. Declaration past this time may prevent timely graduation as all capstone courses are not available every semester.
- H. The following departments have identified a Capstone:

**Anthropology:** ANTHRO 4301, Ideas and Explanations in Anthropology

**Art & Art History:** ART 3395, Sophomore/Junior Seminar: The Methods of Art History or one additional 4000 level topics course in Art History

**Biology:** BIOL 4889, Senior Seminar

**Chemistry/Biochemistry:** CHEM 3022, Introduction to Chemical Literature (1) and CHEM 3905, Chemical Research (1) and CHEM 4897, Seminar (1)

**Communication:** COMM 3330, Research Methods I

**Criminology & Criminal Justice:** CRIMIN 4390, Seminar in Criminology & Criminal Justice

**Economics:** ECON 4100, Introduction to Econometrics (If this course is used to complete the minor, then, the students must take an additional 4000 level Economic course).

**English:** Additional 4000 level English Literature course (Student must identify themselves as using the additional 4000 level course as a Capstone so additional requirements can be assigned).

**Foreign Languages and Literatures:** French 3211, Contemporary French Culture  
German 3210, German Culture and Civilization  
Spanish 3210, Hispanic Culture and Civilization: Spain or Spanish 3211, Hispanic Culture and Civilization: Spanish America

**History:** History 4004, Senior Seminar (5) credits

**Honors College:** Honors 4100 (1 or 2 credit hours) and three to six credit hours of Honors 4900 or 4910 are required.

#### **Mathematics/Computer Science:**

Computer Science, 4000 Level Course in Computer Science, which was not counted as one counted as one of the electives towards the minor.

Mathematics, 4000 Level Course in Mathematics, which was not counted as one counted as one of the electives towards the minor.

Statistics, There will be no Capstone course in Statistics. The student will have to choose a capstone course from the other area of concentration.

**Music:** Music 4000, Directed Studies (3) credits (Under the Music History and Literature, Music Theory and Composition, Music Pedagogy, or Music Practicum curricular destination)

**Philosophy:** Philosophy 4491, Senior Seminar

**Physics:** Physics 4381, Directed Readings in Physics

**Political Science:** Political Science 3950, Senior Seminar in Political Science

**Psychology:** An additional 4000 level Psychology course beyond Psychology courses present for the Minor

**Sociology:** An additional 4000 level course in Sociology  
\* Only students admitted to PLHC may use this option.

### **Interdisciplinary Minors and Certificates**

#### **Minor in American Studies**

American Studies is an internationally recognized academic field which involves an interdisciplinary approach to the study of the culture(s) of the United States, its colonial antecedents, and its indigenous peoples.

Students interested in this minor should contact the coordinator of American Studies for advice and information. Candidates must have a cumulative grade point average of 2.0 or better in the 18 credit hours required for the minor. Three hours of the minor may be taken on a satisfactory/unsatisfactory basis. Candidates wishing to take American Studies courses from the Honors College (see below) must

be members of the Honors College or must have a 3.0 cumulative grade point average.

#### **Requirements for the minor**

Completion of the American Studies minor requires at least 18 semester credit hours, including at least two courses (6 hours) from Section A and at least two courses (6 hours) from Section B. The other 6 hours may be chosen from Section A, B, and/or C. Please read the special requirements below.

**A. Core courses in American Studies** (all courses are 3 credits except where otherwise indicated). At least two of the following core courses are required to qualify for the minor. Of this minimal requirement, one course must be chosen from either American Studies or English and the other from either History or Political Science. Students may take up to two additional courses from this group, and these may be chosen from any department or discipline.

#### **Anthropology**

2120, Native Peoples of North America

#### **Art and Art History**

1104, Indigenous Arts of North America

2270, American Art to 1876

2279, American Architecture

#### **English**

1170, American Literary Masterpieces

1700, African-American Literature

1710, Native American Literature

2710, American Literature I

2720, American Literature II

#### **History**

1001, American Civilization (to the mid-nineteenth century)

1003, African-American History

1004, The History of Women in the United States

#### **Honors**

1210, American Traditions: Humanities

1220, American Traditions: the Fine and Performing Arts

1230, American Traditions: Social Sciences

1310, Non-Western Traditions: Humanities

1320, Non-Western Traditions: the Fine and Performing Arts

1330, Non-Western Traditions: Social Sciences

Admission to these Honors Seminars requires consent of the dean of the Honors College. **Note:** that depending on instructor and content, Honors 1210 can fulfill the requirements from this group in literature/American Studies and Honors 1230 can fulfill the History/Political Science requirement. Honors 1310-1330 can qualify as additional Group A choices when their focus is on Native American traditions.

#### **Music**

1002, Introduction to African American Music

1060, Introduction to Jazz

#### **Philosophy**

3307, American Philosophy

#### **Political Science**

1100, Introduction to American Politics

1990, The City

2300, State Politics

2350, Introduction to Urban Politics

2650, American Political Thought

2900, Studies in Political Science (when appropriate).

#### **Sociology**

1990, The City

**B. Optional courses in American Studies** (all courses are 3 credits except where otherwise indicated). To complete the American Studies minor, students must choose at least two courses from this group, from any department or discipline, and may choose up to four courses in this group. Courses chosen from this group must be chosen from at least two departments.

#### **Anthropology**

3250, American Folklore

3291, Current Issues in Anthropology (when appropriate).

#### **Art and Art History**

3360, Photography and Society (same as INTDSC 3360)

4475, Topics in American Art

4481, Topics in Contemporary Art (when appropriate)

#### **Communication**

1050, Introduction to Mass Media

2243, Communications in American Politics

3352, Mass Media Criticism

#### **Economics**

2800, History of American Economic Development (same as HIST 2800)

#### **Education**

ED FND 3251, Black Americans in Education

ED FND 4330, History of American Education

ED FND 4332, Progressivism and Modern Education

#### **English**

3800, Topics in Women and Literature (when appropriate)

4610, Selected Major American Writers I

4620, Selected Major American Writers II

4640, American Fiction to World War I

4650, Modern American Fiction

4930, Studies in Women and Literature (when appropriate)

4950, Special Topics in Literature (when appropriate)

## History

- 2219, U.S. Labor History
- 2800, History of American Economic Development (Same as ECON 2800)
- 3000, Selected Topics in History (when appropriate)
- 3012, The Indian in American History, 1600-1900
- 3021, U.S. Urban History
- 3031, History of Women in the United States
- 3042, U.S. Social Movements in the 20<sup>th</sup> Century
- 3043, History of Crime and Justice
- 3051, African-American History: From Slavery to Civil Rights
- 3052, African-American History: From Civil Rights to Black Power
- 3053, African-American Women's History
- 4004, Senior Seminar (5 credits: when appropriate)
- 4013, United States History for the Secondary Classroom

## Honors College

When topics are appropriate, any of the seminars below can qualify as an "option" course for the American Studies minor. Admission to these courses requires the consent of the dean of the Honors College.

- 2010, Inquiries in the Humanities
- 2020, Inquiries in the Fine and Performing Arts
- 2030, Inquiries in the Social Sciences
- 2070, Inquiries in Education
- 3010, Advanced Seminar in the Humanities
- 3020, Advanced Seminar in the Fine and Performing Arts
- 3030, Advanced Seminar in the Social Sciences
- 3070, Advanced Seminar in Education
- 3510, Research Seminar: Humanities
- 3520, Research Seminar: Fine and Performing Arts
- 3530, Research Seminar: Social and Behavioral Sciences
- 3570, Research Seminar: Education

## Interdisciplinary

- 3360, Photography and Society (same as ART 3360)

## Philosophy

- 4410, Significant Figures in Philosophy (when appropriate)

## Political Science

- 2280, Judicial Politics and Policy
- 3300, The American Presidency
- 3331, Congressional Politics
- 2320, African Americans and the Political System
- 3340, Politics and the Media
- 3450, Political Parties and Elections
- 2380, Women in U. S. Politics
- 3200, Constitutional Law
- 3210, Civil Liberties
- 3390, Studies in American Politics (when appropriate)

## Sociology

- 1040, Social Problems
- 2100, Women in Contemporary Society
- 3268, The Sociology of Conflict
- 4316, Power, Ideology and Social Movements

- 4360, Sociology of Minority Groups
- 4380, Selected Topics in Social Policy (when appropriate)

**C. American Studies elective courses** (courses are 3 credit hours unless otherwise indicated). Up to two courses from this group may be used for the American Studies minor. When two courses are chosen from this group, they must be chosen from different departments.

## Anthropology

- 2126, Archaeology of Greater St. Louis
- 2131, Archaeology of Missouri
- 2132, Archaeology of North America
- 2138, African-American Archaeology

## Art and Art History

- 2281, Art Since 1960

## Communication

- 3332, Intercultural Communications
- 3343, The Rhetoric of Protest

## Criminology and Criminal Justice

- 2240, Policing
- 4340, Race, Crime and Justice

## English

- 4060, Adolescent Literature
- 4770, Modern Poetry
- 4760, Modern Drama
- 4740, Poetry since World War II

## History

- 3001, United States History: Colonial America to 1763
- 3002, United States History: Revolution and the New Nation, 1763 - 1815
- 3003, United States History: Nationalism and Sectionalism, 1815 to 1860
- 3004, United States History: 1860-1900
- 3005, United States History: 1900-1940
- 3006, United States History: 1940 to the Present
- 3031, History of Women in the United States
- 3041, Topics in American Constitutional History
- 3044, American Military History to 1900
- 3045, American Foreign and Military Affairs, 1900-Present

## Media Studies

- 2218, Public Policy in Telecommunication
- 3355, Media law and Regulation

## Political Science

- 2260, Law and the Individual
- 2290, Women and the Law
- 2420, Introduction to Public Policy
- 2820, United States Foreign Policy
- 3330, Introduction to Political Behavior
- 3370, Mock Constitutional Convention
- 3410, The Politics of Business Regulation
- 3460, The Politics of Poverty and Welfare

### Social Work

2200, Social Welfare as a Social Institution  
3210, Social Issues and Social Policy Development

### Sociology

1040, Social Problems  
2180, Alcohol, Drugs and Society  
3202, Urban Sociology  
4354, Sociology of Business and Work Settings

In addition, courses with variable topics such as Topics in..., Studies in..., and seminars may be taken when the topics are appropriate. When in any doubt, see the coordinator of American Studies; such courses must be approved for inclusion in your American Studies minor **before the semester registration deadline**.

### Minor in Black Studies

The minor in black studies is open to all undergraduate students at University of Missouri-St. Louis, whatever their major field. This minor is an interdisciplinary course of studies intended to provide a focus for new and existing courses in the area of black and African diaspora studies. A faculty member with expertise in black or diaspora studies is designated as coordinator. Students interested in pursuing the minor should consult the coordinator for advisement. For appropriate referral, please contact the advising office at the College of Arts and Sciences, 303 Lucas Hall.

Candidates must have a cumulative grade point average of 2.0 or better in the minor. Courses taken on a satisfactory/unsatisfactory basis may not be applied to the minor. Courses applied to the minor may not be counted for a major.

Any courses relevant to black or African diaspora studies, offered by a humanities or social science department, may be taken when approved by the coordinator for the minor. Special topics courses, directed studies or readings may also be included for credit if relevant to the minor.

### Requirements

1. Students must take **one** of the following:  
HIST 1063, The African Diaspora to 1800  
HIST 1064, The African Diaspora Since 1800
2. A minimum of **two** courses from the following:  
ANTHRO 1005, Human Origins  
ANTHRO 2124, Cultures of Africa  
ART 1105, Introduction to The Arts of Africa  
ENGL 1700, African-American Literature  
HIST 1003, African American History  
HIST 1061, African Civilization to 1800  
HIST 1062, African Civilization Since 1800  
MUSIC1002, Introduction to African-American Music

3. Students should select a minimum of **three** courses from the following list. **One course must be a social science and one must be a humanities course.**

ANTHRO 3234, Cultural Continuity and Change in Subsaharan Africa  
ANTHRO 3235, Women in Subsaharan Africa: A Contemporary Perspective  
HIST 3050, Topics in African-American History  
HIST 3053, African American Women's History  
HIST 3301, West Africa to 1800  
HIST 3302, West Africa Since 1800  
HIST 3303, African Diaspora to 1800  
HIST 3304, African Diaspora since 1800  
POL SCI 2320, African Americans and the Political System  
POL SCI 2580, African Politics  
PSYCH 4392, Selected Topics in Psychology: Africa and American Psychology (**Note:** Students should only take PSYCH 4392 when the topic is African American Psychology).  
SOC 3245, Sociology of South Africa  
SOC 4360, Sociology of Minority Groups  
COMM 3332, Intercultural Communication

### Minor in Classical Studies

The minor in classical studies is an interdisciplinary course of studies intended to encourage undergraduates in various disciplines to come to a fuller awareness of the cultures of ancient Greece and Rome and of the classical tradition that underlies much of modern Western civilization. In addition to appealing to any student's curiosity about the early stages of society in the West, the minor provides an especially valuable supplement to those who are majoring in many liberal arts areas including history, literature, philosophy, foreign languages, and art.

Students pursuing the minor will acquire a foundation in either Greek or Latin. They may choose to use either sequence to fulfill the foreign language requirement in the College of Arts and Sciences.

### Requirements

Candidates for the minor must complete 19 credit hours of course work including:

LATIN 1001  
LATIN 1002 or  
GRK ANC 1001  
GRK ANC 1002  
**and three** courses from the following list and any other course approved by the coordinator:  
GRK ANC 1001, Intermediate Ancient Greek Language and Culture  
ART 2211, Art and Archeology of the Ancient World  
ART 2212, Greek Art and Archeology  
ART 2213, Roman Art and Archeology  
ART 4411, Topics in Ancient Art and Archeology  
ENGL 1200, Myth  
ENGL 2200, Classical Literature in Translation  
HIST 3081, Rome: The Republic and Empire



Latin 2101, Intermediate Latin Language and Culture  
PHIL 3301, Ancient Philosophy  
PHIL 4401, Plato  
PHIL 4402, Aristotle

#### Minor in Legal Studies

The minor in legal studies is open to all undergraduate students at UMSL, whatever their major field. It offers a secondary field of concentration in one of the most important areas of social life. Students may use the minor as a complement to their major, as an additional qualification for career opportunities, or as general education.

This interdisciplinary minor coordinates liberal arts courses related to law. A faculty member in Legal Studies will advise students and will work with their major advisers in planning appropriate courses.

#### Candidates must take:

**Interdisciplinary 1200**, Foundations of Law: An Introduction to Legal Studies (crosslisted as POL SCI 1200 and CRIMIN 1200), **and five courses** from the following list. At least three courses must be taken at the 3000 level and above. No more than two courses from a single discipline may be included in the minor.

CRIMIN 1075, Crime and Punishment  
CRIMIN 1100, Introduction to Criminology and Criminal Justice  
CRIMIN 1130, Criminal Justice Policy  
CRIMIN 2226, Law and the Individual  
CRIMIN 2227, Urban Law: Poverty and the Justice System  
CRIMIN 3345, Rights of the Offender  
CRIMIN 3355, Media Law and Regulation  
ECON 3650, Law and Economics  
HIST 3041, Topics in American Constitutional History  
HIST 3071, Medieval England  
PHIL 4487, Philosophy of Law  
PHIL 5533, Seminar in Philosophy of Law  
POL SCI 2260, Law and the Individual (cross listed as CCJ 2226)  
POL SCI 2280, Judicial Politics and Policy  
POL SCI 2290, Women and the Law  
POL SCI 3200, Constitutional Law  
POL SCI 3210, Civil Liberties  
POL SCI 3260, Judicial Decision Making  
POL SCI 3290, Studies in Public Law  
POL SCI 4850, International Law  
SOC 2175, Women, Crime, and Society  
SOC 3278, Sociology of Law

#### Minor in Public Affairs Journalism

The minor in public affairs journalism provides students with an overview of media operations, including basic writing and reporting skills, as well as a specialty area of advanced study. Ordinarily the specialty or cognate area focuses on a particular field, such as consumer affairs, economics, or political science -- areas in which a journalist

would specialize. Cognate areas are proposed by students seeking the minor and approved by a faculty committee. A minimum grade point average of 2.0 is required in the minor. No more than 3 hours credit may be taken on a satisfactory/unsatisfactory basis. A total of 18 hours is required for the minor. At least 12 of the 18 required hours must be taken at UMSL.

#### Requirements

##### A. 9 hours in communication/English professional training:

ENGL 3140 or MEDIA ST 3214, News Writing  
ENGL 3180, Reporting or MEDIA ST 2212, Broadcast Writing and Reporting  
ENGL 4890, Independent Writing Project, or  
MEDIA ST 3394, 3396 or 3397, Internship

##### B. 9 hours in public affairs at the 3000 level or above

1. Students earning a writing certificate or majoring in communication with a mass communication emphasis must take 15 hours (at least 9 of these at the 3000 level or above) in economics, political science, or sociology.
2. Students majoring in economics, political science, or sociology must take 9 hours (in addition to the required English/communication courses) at the 3000 level or above in addition to English/communication courses chosen from those listed above and/or in the two cognate areas outside their major (i.e., economics, political science, or sociology).

A list of courses applicable to the minor is available from the coordinator.

#### Minor in Urban Studies

A minor in urban studies includes 18 hours of course work. Candidates must have a cumulative grade point average of 2.0 or better in the minor. Courses taken on a satisfactory/unsatisfactory basis may not be applied to the minor. Special topics courses relevant to urban studies may be included in the minor when approved in advance by the coordinator of the urban studies minor.

#### Requirements

Students must take:

INTDSC 1990, The City  
and five courses selected from the following list, at least three courses at the 3000 level or above. No more than two courses from a single discipline may be included in the minor.

#### Courses Applicable to the Minor

ANTHRO 3242, The Culture of Cities  
ANTHRO 3250, American Folklore  
ART HS 2279, American Architecture  
ART HS 3365, The Artist and the City  
CRIMIN 2230, Crime Prevention

**CRIMIN 4300**, Communities and Crime  
**ECON 3510**, Public Finance: State and Local  
**ECON 3700**, Urban and Regional Economics  
**HIST 3000**, Selected Topics in History (when urban or St. Louis history)  
**POL SCI 2350**, Introduction to Urban Politics  
**POL SCI 3450**, Urban Administration  
**POL SCI 4470**, Urban Planning and Politics  
**PSYCH 3256**, Environmental Psychology  
**PSYCH 4235**, Community Psychology  
**SOC 1040**, Social Problems  
**SOC 3202**, Urban Sociology  
**SOC 4344**, Problems of Urban Community

### **Course Descriptions**

In addition to regular departmental offerings, the College of Arts and Sciences also offers several interdisciplinary courses, listed below. These courses bring together the resources of two or more disciplines to focus on topics that benefit from being studied from the point of view of more than one discipline. In many cases faculty from several departments teach an interdisciplinary course together, giving students the opportunity to experience faculty dialogue on issues in a cross-disciplinary fashion. Most interdisciplinary courses have no prerequisites. Freshman and sophomore students are especially encouraged to take these courses.

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 UMSL 2001-2002 Bulletin. The following courses fulfill the Social Sciences breadth of study requirements as described in that Bulletin: 1001, 1200, 1220, 1450, 1990, 2102, 2150++, 3690\*. The following courses fulfill the Humanities breadth of study requirement: 1000, 4465.

\*These courses may fulfill the Humanities or Social Sciences breadth of study requirements.

++ Depending on topic.

### **160 Monday Noon Cultural Seminar (2)**

An interdisciplinary examination of topics in the Humanities. Students will attend the Monday Noon Cultural Series program of the Center for the Humanities each week and meet as a group to explore the nature and background of each presentation, e.g., fiction reading, musical event, presentation of scholarly research in the arts or culture, or social and historical analysis.

### **1000 Special Topics (3)**

Topics may vary from semester to semester, however, they will all focus in the cultural heritage of Great Britain with material taken from art, theater, literature, and selected topics in philosophy.

### **1001 Special Topics (3)**

Topics may vary from semester to semester, however, material will be selected which will focus in the social, economic, historical or political institution of Great Britain.

### **1002 Freshman Success Seminar (1)**

An introduction to technologies and knowledge required in navigating the terrain of higher education, to improve their academic performance, to help determine their strengths and goals, and to encourage them to implement strategies to enhance their personal, academic, and career success. Topics will include study skills, time management, test taking skills, library skills, career development, financial management, health issues, and diversity awareness.

### **1010 Information Research & Success (1)**

Students will gain knowledge and develop critical thinking skills to succeed academically by learning to frame meaningful questions; developing an understanding of the structure and content of library and electronic information resources; evaluating information; and using library and information resources as learning tools.

### **1200 Foundations of Law: An Introduction to Legal Studies (3)**

Same as CRIMIN 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.

### **1450 Introduction to Labor Studies (3)**

Same as POL SCI 1450. This course covers many topics important to the role of unions in the American political system and American society from a labor perspective. Topics include the role of workers in current and future times, unions' institutional structure, collective bargaining strategies and obstacles for union organizing, recent union campaigns, labor's political role, and the relationship between labor and media.

### **1990 The City (3)**

Same as POL SCI 1990, and SOC 1999. 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.

### **2102 Introduction to Women's Studies (3)**

Same as SOC 2102 and PSYCH 2102. An introduction to the study of women's roles in a diverse and gendered culture and society. Through a variety of disciplinary perspectives in

the humanities, social sciences, and natural sciences, it seeks to understand gender as a concept that affects both women and men. This course explores issues of power, identity, and relationship in women's lives.

**2150 Special Topics in Women's and Gender Studies (3)**

An introduction to a particular topic area in women's studies (topics will be announced prior to registration), drawing on the theories and methods of such disciplines as sociology, Psychology, political science, history, philosophy, art history, and others to examine particular aspects of women's experience in social and cultural life. Course may satisfy the distribution requirement for Humanities or Social Sciences depending on the topic.

**2170 Aging in America: Concepts and Controversies (3)**

Same as SOC 2170, SOC WK 2170, and GERON 2170.

This course examines the major theoretical and service issues connected to the study of older adults and their families, using multidisciplinary perspectives. Students are provided with an introduction to the field of aging through an examination of current social issues and controversies. This course emphasizes student involvement through class discussion, and is appropriate for students in the arts and sciences, business, communication, education, and nursing.

**3220 Science for the Middle School Teacher I (5)**

Prerequisites: CHEM 1111, BIOL 1811 and either CHEM 1011 or BIOL 1202. This course is intended to provide science content and pedagogical methods to students preparing to teach science at the middle school level. Science content in the first semester may include investigations of the properties of solids and solutions, chemical changes and conservation of matter, forces and simple machines, food webs, the environment and ecosystems, heat and radiation, waves and diffraction, static electricity and currents, but other topics from the middle school science curriculum could be substituted. Students will be expected to develop grade appropriate teaching materials, and complete individual and group investigations. Two hours of lecture, one hour of discussion, and two two-hour laboratory sessions per week.

**3352 Independent Studies in Women's and Gender Studies (1-3)**

Prerequisite: Junior standing; two courses in Women's and Gender Studies, including 2102; and consent of the instructor and the Institute. Directed independent work in selected Women's and Gender Studies topics through readings, research, reports and/or conferences. Course may satisfy the distribution requirement for the Humanities, Social Sciences or Math/Science depending on topic.

**3360 Photography and Society (3)**

Same as ART 3360. A study of photography as a means of information and expression, as an influence on culture, and as a reflection of concepts in politics, science, morality, and art.

**5350 Topics in Women's and Gender Studies (3)**

Prerequisite: Junior standing and one Women's and Gender Studies course. This course will focus on a particular aspect of women's conditions (to be announced prior to registration) and will draw upon recent theoretical and methodological work in the field of women's and gender studies from a variety of disciplines. Course may satisfy the distribution requirement for Humanities or Social Sciences depending on the topic.

**5353 Internship in Women's and Gender Studies (3)**

Prerequisite: 90 hours. 2.5 GPA, 12 WGST hrs. Internship would place the student in a profit or nonprofit setting for approximately ten hours a week in an internship structured and supervised by the Institute; consent of Director required; may include biweekly seminar. Student must present appropriate course background for either option, plus the above pre/co-requisites.

**6450 Seminar in Women's and Gender Studies (3)**

Critical examination of advanced topics in the humanities, social sciences, or natural sciences from women's and gender studies perspectives. May be taken more than once provided that the subject matter is different each time the seminar is taken.

**6452 Special Readings in Women's Studies/Gender Studies (3)**

Prerequisite: Admission to Graduate Certificate program and consent of instructor. Directed independent work on a selected Women's and Gender Studies topic through readings, research, reports, and/or conferences.

## Certificate Programs

The University College offers a wide variety of certificates, which provide our students the opportunity to develop expertise in subjects other than their major field. These programs usually combine course offerings from several departments so the subject is examined from a multidisciplinary approach. While most persons who earn certificates do so in the process of completing their undergraduate degree, a certificate may be completed by non-degree seeking students.

Students wishing to earn a graduate certificate must seek formal admission to the Graduate School.

To find the descriptions of the courses within a specific certificate program, refer to the individual department from which the courses are drawn. Following is a list of certificate programs offered by the University, with only the program requirements listed for those which are interdisciplinary.

### Graduate Certificate Programs:

Biotechnology, Business Administration, Forensic Economics, Gerontology, Human Resources Management, Institutional Research, International Studies, Logistics and Supply Chain Management, Managerial Economics, Marketing Management, Museum Studies, Non Profit Organization Management and Leadership, Psychology-Clinical Respecialization, Trauma Studies, Tropical Biology and Conservation, Women's and Gender Studies, Writing, Gateway Writing Project

### Undergraduate Certificate Programs:

African Studies (African Studies or African Diaspora Studies), Archaeology, Biochemistry, Biotechnology, Business Administration, East Asian Studies, European Studies, Gerontology, Greek Studies, Human Resources Management, Institutional Research, International Business, International Studies, Labor Studies, Latin American Studies, Logistic and Supply Chain Management, Marketing Management, Non Profit Organization Management and Leadership, Photographic Studies, Psychological-Clinical Respecialization, Studies in Religions, Trauma Studies, Tropical Biology and Conservation, Women and Gender Studies, Writing, Writing with Technical Emphasis, Gateway Writing Project.

### Africana Studies Certificate

Students seeking the Africana studies certificate have two options: an emphasis in African studies and an emphasis in African diaspora studies.

#### I. African Studies:

1) At least one course in two of the following four areas for a total of 9 hours:

**Area 1: Anthropology**  
2124, Cultures of Africa

**Area 2: Art and Art History**  
2105, Introduction to The Arts of Africa

**Area 3: History**  
1061, African Civilization to 1800  
1062, African Civilization Since 1800

**Area 4: Political Science**  
2580, African Politics

2) One course in two of the following areas, a total of 6 hours:

**Area 1: Anthropology**  
3234, Cultural Continuity and Change in Sub-Saharan Africa  
3235, Women in Sub-Saharan Africa: A Contemporary Perspective

**Area 2: Art and Art History**  
4405, Topics in the Arts of Africa

**Area 3: History**  
3301, West Africa to 1800  
3302, West Africa Since 1800

**Area 4: Sociology**  
3245, Sociology of South Africa

3) An independent study course (3 hours) in which a research paper will be written on some aspect of African Studies

#### II. African Diaspora Studies

One course from each of the following areas, a total of 6 hours.

##### Area 1: Africa

**Anthropology**  
2124, Cultures of Africa  
**History**  
1061, African Civilization to 1800  
1062, African Civilization Since 1800

##### Area 2: Diaspora

**Anthropology**  
1005, Human Origins

**History**  
1003, African-American History  
1063, The African Diaspora to 1800  
1064, The African Diaspora Since 1800  
3052, African-American History: From Civil Rights to Black Power

At least one course from each of the following areas, a total of 6 hours:

**Area 1: Africa**

**Anthropology**

3234, Cultural Continuity and Change in Sub Saharan Africa

3235, Women in Sub-Saharan Africa: A Contemporary Perspective

**Art**

1105, Introduction to the Arts of Africa

**History**

3301, West Africa to 1800

3302, West Africa Since 1800

**Political Science**

2580, African Politics

**Sociology**

3245, Sociology of South Africa

**Area 2: Diaspora**

**Communication**

3332, Intercultural Communication

**English**

1700, African-American Literature

**History**

3050, Topics in African-American History

3303, African Diaspora to 1800

3304, African Diaspora Since 1800

**Music**

1002, Introduction to African-American Music

**Political Science**

2320, African Americans and the Political System

**\*Psychology**

4392, Selected Topics in Psychology: African American Psychology

**Sociology**

4360, Sociology of Minority Groups

\*Note: Students should take Psychology 4392 only when the African American Psychology topic is offered.

**Biochemistry Certificate**

(Refer to the Biology section of this Bulletin.)

**Biotechnology Certificates**

(Refer to the Biology section of this Bulletin.)

**Business Administration Certificate**

(Refer to the Business Administration section of this Bulletin.)

**Conservation Biology Certificate**

(Refer to the Biology section of this Bulletin.)

**East Asian Studies Certificate**

1) First- and second-year Chinese, Japanese, Korean, or other appropriate Asian language (20 hours taken in four semesters).

2) **History 1041 and History 1042**, East Asian Civilization

3) One course in three of the following six areas, a total of nine hours:

**Area 1: Anthropology**

2110, Cultures of Asia

**Area 2: Art and Art History**

1109, The Arts of China

1110, The Arts of Japan

4408, Topics in Asian Art

**Area 3: History**

3101, Modern Japan: 1850 to Present

3102, Modern China: 1800 to Present

\*4004, Senior Seminar

\*Note: Students should take History 4004 only when the topic is appropriate to East Asia.

**Area 4 Music**

1080, Non-Western Music I

1090, Non-Western Music II

**Area 5: Philosophy**

1120, Asian Philosophy

**Area 6: Political Science**

2550, East Asian Politics

\*3590, Studies in Comparative Politics

\*3890, Studies in International Relations

\*Note: Students should take POL SCI 3590 or POL SCI 3890 only when the specific topic is appropriate.

**European Studies Certificate**

1) Four semesters of college work or the equivalent in a modern European foreign language.

2) **History 1032**, Topics in European Civilization: 1715 to the Present.

3) One course each from at least four of the following eight areas, a total of 12 hours. Students should consult advisers at the Center for International Studies to determine how these courses can best be arranged to meet their interests.

**Area 1: Art and Art History**

2235, Italian and Northern European Renaissance Art

2245, Baroque Art and Architecture

4435, Topics in Renaissance Art

4445, Topics in Seventeenth- and Eighteenth-Century European Art

4455, Topics in Modern Art

**Area 2: Economics**

3310, Comparative Economic Systems

**Area 3: English**

2280, The Contemporary World in Literature

2320, English Literature II

4920, Continental Fiction

4410, Restoration and Eighteenth-Century Drama

4450, The Eighteenth-Century English Novel

4540, The Nineteenth-Century English Novel

4580, Literature of the Late Nineteenth and Early Twentieth Centuries

4750, Modern British Fiction

**Area 4: History**

1031, Topics in European Civilization: Emergence of Western Europe to 1715

3085, The Age of the Renaissance

3086, The Age of Reformation

3092, Europe 1900 - 1950: War and Upheaval

3093, Europe, 1950 - Present: Peace and Prosperity

3094, France in the Modern Age

3095, Germany in the Modern Age

**Area 5: Foreign Languages and Literatures**

**French**

2110, Modern French Literature in Translation

2150, European Literature in Translation: Special Topics

3211, Contemporary French Culture

3281, French Literature II: Nineteenth and Twentieth Centuries

4341, Seventeenth-Century French Theatre and Poetry

4342, Seventeenth-Century French Prose

4353, Eighteenth-Century French Literature

4354, Eighteenth-Century French Theatre and Novel

4362, Nineteenth-Century French Novel

4371, Twentieth-Century French Novel

4375, Modern French Theatre

**German**

2110, Masterpieces of German Literature in Translation

2150, European Literature in Translation: Special Topics

3201, Masterpieces of German Literature

3202, The German Novelle and Drama

3210, German Culture and Civilization

4315, German Classicism and Romanticism

4320, German Realism and Naturalism

4345, Modern German Literature

4397, Survey of German Literature Part I

4398, Survey of German Literature Part II

**Spanish**

2110, Spanish Literature in Translation

2150, European Literature in Translation: Special Topics

4310, Spanish Literature from 1898 to 1939

4315, Spanish Literature from 1939 to the Present

4320, Realism and Naturalism in the Nineteenth-Century Spanish Novel

4321, Poetry and Drama of the Nineteenth Century

4325, Poetry and Drama of the Golden Age

**Area 6: Music**

4220, Music of the Renaissance

4230, Music of the Baroque

4240, Music of the Classic Period

4250, Music of the Romantic Period

**Area 7: Philosophy**

3303, Early Modern Philosophy

3304, Kant and Nineteenth-Century Philosophy

3305, Twentieth-Century Philosophy

4405, The Rationalists

4406, The British Empiricists

**Area 8: Political Science**

2510, Comparative Politics of Europe

2560, Russia and the New Republics

3840, European International Relations

\*4510, Comparative Public Policy and Administration

\*3590, Studies in Comparative Politics

\*3890, Studies in International Relations

\*Note: Students should take POL SCI 4510, 3590, or 3890 only when the topic is appropriately European.

**Forensic Economics Certificate**

(Refer to the Economics section of this Bulletin.)

**Gerontology Certificate**

(Refer to the School of Social Work section of this Bulletin.)

**Greek Studies Certificate**

Students seeking the Greek Studies Certificate must complete both a language studies component and a focus area component. Courses are 3 credit hours unless noted otherwise.

**I. Greek Language.** Students must complete at least 9 credit hours from the following courses.

**Ancient Greek**

1001, Ancient Greek 1 (5)

1002, Ancient Greek 2 (5)

2101, Intermediate Ancient Greek Language and Culture

2190, Greek and Latin in English Today

2151, Special Readings (1-3)

**Modern Greek**

1001, Modern Greek I (5)

1002, Modern Greek II (5)

2101, Intermediate Modern Greek Language and Culture

2150, Modern Greek Literature in Translation

2190, Special Readings (1-3)

**II. Focus Area.** Students must complete at least 9 credit hours in one of the following focus areas.

**Literature and Culture**

**Anthropology**

4350, Special Study\*

**English**

1200, Myth

2200, Classical Literature in Translation

**History**

1030, The Ancient World

2115, Greek History and Culture (same as Anthropology

2115)

**Modern Greek**

2150, Modern Greek Literature in Translation\*\*

2190, Special Readings (1-3)\*\*

**Music History and Literature**

4270, A History of Byzantine Music and Hymnography

**Philosophy**

3301, Ancient Philosophy

4401, Plato

4402, Aristotle

**Archaeology and Art History**

**Anthropology**

2190, Special Topics in Archaeology\*

4309, Archaeological Field School (3-6)\*

4350, Special Study (1-3)\*

**Art History**

2211, Art and Archaeology of the Ancient World

2212, Greek Art and Archaeology

4411, Topics in Ancient Art and Archaeology\*

3390, Special Study (1-10)\*

4490, Special Study (1-10)\*

**Notes:**

\*Must be taken only when appropriate to Greek Studies.

\*\*These courses will count for either the language requirement or the focus area requirement but not for both.

**Human Resource Management Certificate**

(Refer to the Business Administration section of this Bulletin.)

**International Business Certificate**

- 1) Students must complete a minimum of 12 hours in the Business Internship Program in London or in some other approved overseas study program
- 2) One course from Area 1 and one from Area 2 a total of six hours.

**Area 1: Business Administration:**

3580, International Finance

3680, International Management

3780, International Marketing

**Area 2: International Studies:**

ANTHRO 3238, Culture and Business in East Asia

ECON 3300, International Economic Analysis

ECON 3301, International Finance

ECON 3310, Comparative Economic Systems

ECON 3320, Economic Development

POL SCI 3830, International Political Economy

POL SCI 3890, Studies in International Relations

(International Relations of East Asia)

SOC 3241, Selected Topics in Macro-sociology. (Work and Industry in Japan)

SOC 4354, Sociology of Business and Work Settings

In lieu of a course from Area 2, students may substitute one course (3 hours) at the advanced level of a foreign language. Advanced level is defined as a course beyond the 13 hour introductory language sequence.

3) An independent study course is not required for this certificate option.

**Note:** Students participating in other approved overseas study programs such as Hogeschool Holland Business School, Ecole Superieure de Commerce de Saint Etienne, or Université Jean Moulin, may also qualify to apply 12 credit hours toward the International Business Certificate.

**Graduate Certificate in Institutional Research**

The Post-Master's Certificate Program in Institutional Research (CPIR) is for academics who want training in Institutional Research in preparation for working in an IR Office at a postsecondary institution, a government agency, or a private education organization. The program consists of 18 hours and may be taken as part of a doctoral program. Of the 18 hours, 12 are in the required core (6 hours are in research methods and 6 hours in IR seminar), plus a 3-hour Higher Education (HIR ED) or an Educational Research (ED REM) elective and a 3-hour capstone. Students may transfer up to 6 hours of post-Master's work into the program with the approval of the advisor.

**Graduate Certificate in International Studies**

A Graduate Certificate in International Studies is a program of study featuring advanced, multidisciplinary course work designed for individuals, including teachers and other professionals, who wish to expand their knowledge and understanding of international and cross-cultural affairs. The Certificate is sponsored by the Center for International Studies, and the Departments of Economics, History, Foreign Languages and Literatures, and Political Science. A broad set of course offerings is available in these and other departments, with the flexibility for students to tailor the program to their particular interests and needs. The program has been developed as a vehicle for bringing together the resources of a distinguished faculty in international studies

and for providing an opportunity for further graduate learning.

Applicants to the Certificate program must meet the general requirements for admission to Graduate School as explained in the graduate study section of this Bulletin. The Certificate is awarded after completion of 18 hours, including a minimum of 12 hours drawn from a list of core courses and an additional six hours selected from a wide variety of offerings in eight different disciplines. No more than 12 hours may be from any one discipline. Students may simultaneously earn a graduate degree and count credits earned in their degree program toward the Certificate when appropriate.

#### **Requirements**

Students must complete at least 12 hours chosen from the following list of core courses:

#### **Anthropology**

**5428**, Peoples and Cultures of Southeast Asia

**5440**, Global Refugee Crisis

#### **Business Administration**

**5280**, International Business Operations

**5480**, International Accounting

**6580**, International Finance, Investment, and Commercial Relations

#### **Economics**

**6300**, International Trade

**6301**, International Monetary Analysis

#### **History**

**6111**, Readings in European History to 1715

**6112**, Readings in European History Since 1715

**6113**, Readings in East Asian History

**6114**, Readings in Latin American History

**6115**, Readings in African History

#### **Political Science**

**6450**, Proseminar in Comparative Politics

**6451**, Seminar in Comparative Politics

**6480**, Proseminar in International Relations

**6481**, Seminar in International Relations

**6488**, Studies in International Relations

#### **Sociology**

**5410**, Comparative Social Structures

Students may complete an additional six hours chosen from the following:

#### **Business Administration**

\* **3580**, International Finance

**3680**, International Management

**3780**, International Marketing

\* **Note**: Students may not count both BUS AD 6580 and 3580.

#### **Communication**

**3332**, Intercultural Communication

**3356**, International Communication

#### **Criminology and Criminal Justice**

**3305**, Comparative Criminology and Criminal Justice

#### **Economics**

**4301**, International Economic Analysis: Finance

**4980**, Special Readings

#### **English**

**4920**, Continental Fiction

#### **History**

**3045**, American Foreign and Military Affairs, 1900-Present

**3092**, Europe 1900-1950: War and Upheaval

**3093**, Europe, 1950-Present: Peace and Prosperity

**3094**, France in the Modern Age

**3095**, Germany in the Modern Age

**3097**, History of Spain

**3101**, Modern Japan: 1850 to Present

**3102**, Modern China: 1800 to Present

**3202**, History of Latin America: Since 1808

**3302**, West Africa: Since 1800

**4001**, Special Readings

#### **Foreign Languages and Literatures**

**French 4362**, Nineteenth-Century French Novel

**French 4365**, Modern French Poetry

**French 4371**, Twentieth-Century French Novel

**French 4375**, Modern French Theatre

**German 4315**, German Classicism and Romanticism

**German 4320**, German Realism and Naturalism

**German 4345**, Modern German Literature

**German 4398**, Survey of German Literature Part II

**Spanish 4310**, Spanish Literature from 1898 to 1939

**Spanish 4315**, Spanish Literature from 1939 to Present

**Spanish 4320**, Realism and Naturalism in the

Nineteenth-Century Spanish Novel

**Spanish 4321**, Poetry and Drama of the Nineteenth Century

**Spanish 4340**, Spanish-American Literature of the

Nineteenth Century

**Spanish 4341**, Modernismo

**Spanish 4345**, Spanish-American Literature of the

Twentieth Century

**Spanish 4351**, Spanish-American Fiction in the Twentieth

Century

**Spanish 4360**, Spanish-American Poetry from Modernismo

to the Present

#### **Media Studies**

**Media St 3354**, Comparative Telecommunication Systems

#### **Music**

**4250**, Music of the Romantic Period

**4260**, Music of the Twentieth Century

#### **Political Science**

**4510**, Comparative Public Policy and Administration

**3590**, Studies in Comparative Politics

**4850**, International Law

**3860**, Studies in War and Peace

**3890**, Studies in International Relations

**6485**, Directed Readings and Research in International

Relations

#### **Sociology**

**4342**, World Population and Ecology



**Graduate Certificate in Logistics and Supply Chain Management**

(Refer to the Business Administration section of this bulletin.)

**Labor Studies Certificate**

The Labor Studies Certificate is designed for students who are interested in a focused specialty in labor studies. The 18 credit hour curriculum consists of six credit courses offered over a three-semester period.

**POL SCI 1450**, Introduction to Labor Studies

**POL SCI 3220**, Labor Law

**POL SCI 3430**, Union Leadership and Administration

**POL SCI 3470**, Collective Bargaining

**HIST 2219**, U.S. Labor History

**ECON 3900**, Selected Topic in Economics

**Latin American Studies Certificate**

1) Thirteen credit hours or the equivalent in Spanish.

2) Either **History 1051**, Latin American Civilization, or **Spanish 3211**, Hispanic Culture and Civilization: Spanish America.

3) A total of 12 hours from at least three of the following areas:

**Area 1: Anthropology**

**2134**, Archaeology of the Inca, Aztec, and Maya

**Area 2: Art and Art History**

**1103**, Pre-Columbian Art of Mexico and Central America

**Area 3: History**

**3201**, History of Latin America: To 1808

**3202**, History of Latin America: Since 1808

**Area 4: Political Science**

**2530**, Political Systems of South America

**2540**, Political Systems of Mexico, Central America, and the Caribbean

**\*3590**, Studies in Comparative Politics

**\*Note:** Students should take POL SCI 3590 only when the topic is appropriate to Latin America.

**Area 5: Spanish**

**2110**, Spanish-American Literature in Translation

**3211**, Hispanic Culture and Civilization: Spanish America

**3281**, Introduction to Hispanic Literature: Spanish America

**4340**, Spanish-American Literature of the Nineteenth Century

**4341**, Modernismo

**4345**, Spanish-American Literature of the Twentieth Century

**4351**, Spanish-American Fiction in the Twentieth Century

**4360**, Spanish-American Poetry from Modernismo to the present

**Managerial Economics Certificate**

(Refer to the Economics section of this Bulletin.)

**Marketing Management Certificate**

(Refer to the Business Administration section of this Bulletin.)

**Museum Studies Certificate**

(Refer to the History section of this Bulletin.)

**Non-Profit Arts Organization Management & Leadership**

The University of Missouri-St. Louis offers an undergraduate certificate for students who wish to consider entering the field of nonprofit arts or cultural organization management, as well as current professional staff, board members, and other leaders of such organizations. The program applies to students interested in all types of nonprofit arts and cultural organizations, including performing and visual arts, cultural, historical, and educational institutions.

Students may not enroll in the Undergraduate Certificate Program prior to the completion of 18 credit hours in one field of the arts, including six credits of upper division courses (3000-4000 level). The certificate may be earned in conjunction with an undergraduate degree in majors such as Art & Art History, Communication, Music, and Theatre & Dance, or as an independent, 18 semester-hour undergraduate certificate.

Required Courses (15 credit hours) Art 3387, Music 3388, Music 4920, or equivalent, Internship (3 credit hours) or equivalent professional field experience

**Public Policy Administration**

**ART 3393, Gallery Management (3 credit hours)**

**PPA/PS/SW 4911, Staff Management Issues (1 credit hour)**

**PPA/PS/SW 4912, Legal Issues in Governing and Managing (1 credit hour)**

**PPA/PS/SW 4913, Managing Issues in Nonprofit Organizations (1 credit hour)**

**PPA/PS/SW 4940, Leadership and Management of Nonprofit Organizations (3 credit hours)**

**PPA/PS/SW 4960, American Philanthropy and Nonprofit Resource Development (3 credit hours)**

**OR**

**MUSIC 3394, Practicum in Performing Arts Management: Music (3 credit hours),**

**TH & DAN 3394, Practicum in Performing Arts Management: Theatre & Dance (3 credit hours)**

**Elective Courses (3 credit hours)**

Students must satisfy all prerequisites prior to enrolling in these courses. Three hours of elective credit must be selected from the following list of courses:

**Business Administration:**

**1590**, Topics in Business Administration

**2900**, Legal Environment of Business

**3451**, Accounting for Governmental and Not-for-profit Entities  
**3600**, Management and Organizational Behavior  
**3611**, Advanced Management and Organizational Behavior  
**3621**, Human Resource Management  
**3700**, Basic Marketing

**Communication:**

**1030**, Interpersonal Communication I  
**2228**, Public Relations Writing (Same as English 3280)  
**2230**, Small Group Communication  
**2231**, Communication in Organization  
**2232**, Effective Communication in the Organization: Tool for Leadership  
**2240**, Persuasive Communication  
**3358**, Communication in Public Relations

**English:**

**3120**, Business Writing (for Business Administration majors only)  
**3130**, Technical Writing  
**3280**, Public Relations Writing (Same as Communication 2228)

**Psychology:**

**2222**, Group Processes in Organizations  
**3317**, Social Psychology of Conflict and Negotiation (Same as Sociology 3317)  
**3318**, Industrial and Organizational Psychology (Same as Business Administration 3623)  
**3320**, Personnel Assessment

**Political Science:**

**2400**, Public Administration

**Non-Profit Organization Management and Leadership Certificate**

(Refer to the Graduate School-Public Policy Administration section of this Bulletin.)

**Non-Profit Organization Management and Leadership Certificate (Undergraduate)**

The university offers an undergraduate certificate program for students who want to become professional staff, board members, or other leaders of nonprofit and voluntary organizations, as well as those who are currently in the field.

The certificate requires the completion of 18 semester hours. Nine of these hours must be the following core courses:

**Political Science and Social Work**

**4940**, Same as SOC or SOC WK 4940 (3 hours)

**Leadership and Management in Nonprofit Organizations**

**4911**, Management Issues in Nonprofit Organizations: Staff Management Issues  
**4912**, Management Issues in Nonprofit Organizations: Legal Issues in Governing and Managing Nonprofit Organizations

**4913**, Management Issues in Nonprofit Organizations: Financial Issues  
**4960**, American Philanthropy and Nonprofit Resource Development

The remaining 9 hours of electives can be selected from the following courses:

**Business Administration**

**3600**, Management and Organizational Behavior  
**3611**, Advanced Management and Organizational Behavior  
**3621**, Human Resource Management  
**3700**, Basic Marketing

**Communication**

**2228**, Public Relations Writing (Same as English 3280)  
**2230**, Small Group Communication  
**2231**, Communication in the Organization  
**2240**, Persuasive Communication  
**3358**, Communication in Public Relations

**English**

**3120**, Business Writing  
**3130**, Advanced Business and Technical Writing

**Political Science**

**3420**, Public Personnel Management  
**3440**, Public Budgeting

**Psychology**

**2222**, Group Processes in Organization  
**3320**, Personnel Assessment

**Social Work**

**4300**, Intervention Strategies for Social Work with Organizations and Communities

**Sociology**

**3268**, The Sociology of Conflict  
**3280**, Society, Arts and Technology  
**4312**, Sociology of Wealth and Poverty  
**4314**, Social Change  
**4336**, Organizations and Environments

**Photographic Studies Certificate**

(Refer to the Art and Art History Section of this Bulletin.)

**Psychology – Clinical Respecialization Certificate**

(Refer to the Psychology section of this Bulletin.)

**Studies in Religions Certificate**

A certificate in studies in religions requires the completion of 18 hours with a grade of C or better.

Courses must be chosen from two or more departments (interdisciplinary offerings excluded), and the program must include two or more courses which focus on different major religious traditions. (Courses which fulfill this requirement are marked with an asterisk [\*] in the list below.)

In addition, students are encouraged to broaden their understanding of religions and religious experience by enrolling in several courses in which these subjects are studied in philosophical or cultural contexts.

Students must obtain the approval of the coordinator of studies in religions before completing 12 hours toward this certificate.

#### Requirements

Students must take 18 hours chosen from the following list in accordance with the guidelines above:

#### Anthropology

2173, Archaeology and Cultures of the Biblical World  
3244, Religion, Magic, and Science

#### Art

\*2214, Early Christian and Byzantine Art  
2225, Medieval Art

#### English

\*1130, Topics in Literature  
\*2230, Jewish Literature  
\*2240, Literature of the New Testament  
\*2250, Literature of the Old Testament  
\*4940, Special Topics in Jewish Literature  
\*4950, Special Topics in Literature  
\*Note: English 1130 and 4950 should only be taken when Religious Literature is the topic.

#### History

\*3082, History of the Church: The Middle Ages

#### Music

1030, Music in Religion

#### Philosophy

1120, Asian Philosophy  
1185, Philosophy of Religion  
3302, Medieval Philosophy  
3385, Issues in Philosophy of Religion  
4485, Topics in Philosophy of Religion

#### Political Science

2610, Ancient and Medieval Political Thought  
2650, American Political Thought

#### Sociology

3264, The Sociology of Religion

#### Taxation Certificate

(Refer to the Business Administration section of this Bulletin.)

#### Trauma Studies Certificate (Graduate)

(Refer to Psychology section of this Bulletin for Graduate Certificate, Undergraduate information follows.)

#### Trauma Studies Certificate

The trauma studies certificate is designed for students who are interested in a focused specialty in trauma studies or victim services in addition to their own major. It is appropriate for students in the College of Arts and Sciences or any of the schools of the university. It is particularly appropriate for students wishing to pursue careers in

psychology, social work, sociology, criminology, law, public health, or nursing.

#### Requirements

A student may earn a trauma studies certificate by completing 18 hours with a GPA of 2.0 or better from at least three departments from the following courses:

Students must complete at least 12 hours from the following group:

#### Criminology & Criminal Justice

1120, Criminal Law  
4300, Communities and Crime  
4350, Victimology

#### Nursing

4770, Topics in Nursing (Women at Risk: Women and Safety)

#### Psychology

2232, Psychology of Victims  
3295, Selected Projects in Field Placement: Helping Victims of Crime (for three credits only toward certificate).  
3390, Directed Studies, if trauma-related topic (for three credits only toward certificate). Please seek approval of the Coordinator of the Trauma Studies Certificate in advance  
4380, The Psychology of Death Dying, and End-of-Life Concerns(same as GERON 4380)

#### Social Work

4601, Abused and Neglected Children  
4602, Child Welfare Practicum Seminar  
4399, Seminar: Child Sexual Abuse

#### Sociology

3250, Sociology of Victimization  
3278, Sociology of Law  
3375, Social Psychology of Disabilities

Only one of the following highly recommended courses may be counted toward the trauma studies certificate:

**Psychology 2161, Helping Relationships**

**Social Work 3100, Introduction to Interventive Strategies for Social Work Practice**

Students may count up to 6 hours from the following group toward the trauma studies certificate:

#### Criminology & Criminal Justice

2230, Crime Prevention  
2240, Policing  
4340, Race, Crime, and Justice (same as SOC 4340)

#### Political Science

2400, Public Administration  
2420, Introduction to Public Policy  
4940, Leadership and Management in Nonprofit Organizations (same as SOC WK 4940 and SOC 4940)

**Psychology**

**2160**, Social Psychology (same as SOC 2160)

**2230**, Psychology of Women

**4235**, Community Psychology

**2245**, Abnormal Psychology

**Social Work**

**4940**, Leadership and Management in Nonprofit  
Organizations (same as POL SCI 4940 and SOC  
4940)

**4601**, Women's Social Issues

**Sociology**

**2102**, Women, Gender and Diversity

**2160**, Social Psychology (same as PSYCH 2160)

**3214**, Juvenile Delinquency and Youth Crimes

**3268**, The Sociology of Conflict

**4940**, Leadership and Management in Nonprofit  
Organizations (same as POL SCI 4940 and SOC WK  
4940)

**4340**, Race, Crime, and Justice (same as CRIMIN 4340)

Special Topics courses relevant to trauma studies may be included in the certificate when approved in advance by the coordinator of the trauma studies certificate.

**Tropical Biology and Conservation Certificate**

(Refer to the Biology section of this Bulletin.)

**Writing Certificates (Refer to English section for Undergraduate Writing and Writing with Technical Emphasis; and the English and College of Education (Teaching and Learning) section for the Graduate Certificate in the Teaching of Writing.**

**Institute for Women's and Gender Studies**

**Core Faculty**

**Kathy Gentile**, Associate Professor of English,\* Director  
Ph.D., University of Oregon  
**Nanora Sweet**, Associate Professor of English,\*  
Ph.D., University of Michigan  
**Kristin Carbone-Lopez**, Assistant Professor of  
Criminology and Criminal Justice  
Ph.D., University of Minnesota  
**Deborah Cohen**, Assistant Professor of History\*  
Ph.D., University of Chicago  
**Farida Jalalzai**, Assistant Professor of Political Science\*  
Ph.D. University of Buffalo – SUNY  
**Zoë Peterson**, Assistant Professor of Psychology\*  
Ph.D., University of Kansas  
**Kathleen Nigro**, Assistant Teaching Professor of Women's  
and Gender Studies  
Ph.D., St. Louis University  
**\*Joint appointees**

**Associate Faculty**

**Sally Barr Ebest**, Professor of English  
Ph.D., Indiana University  
**Jody Miller**, Professor of Criminology and Criminal Justice  
Ph.D., University of Southern California  
**Lori Curtis**, Assistant Teaching Professor in Social Work  
M.S.W., Washington University

**Affiliate Faculty**

**Ruth Bohlen**, Professor of Art History  
Ph.D., University of Maryland  
**Barbara Harbach**, Professor of Music  
Ph.D., Eastman School of Music  
**Barbara Kachur**, Professor of English  
Ph.D., Ohio State University  
**Janet Murray**, E. Desmond Lee Professor for Developing  
Women Leaders and Entrepreneurs in International Business  
Ph.D., University of Missouri-Columbia  
**Carol Peck**, Professor of Optometry  
Ph.D., University of California-Los Angeles  
**Margaret Sherraden**, Professor of Social Work  
Ph.D., Washington University  
**Jayne Stake**, Professor Emerita  
Ph.D., Arizona State University  
**Anne Winkler**, Professor of Economics  
Ph.D., University of Illinois-Urbana  
**Jeanne Morgan Zarucchi**, Professor of French and  
Art History  
Ph.D., Harvard University  
**Susan Brownell**, Associate Professor of Anthropology  
Ph.D., University of California, Santa Barbara  
**Sheilah Clarke-Ekong**, Associate Professor of  
Anthropology  
Ph.D., University of California-Los Angeles

**Ruth Iyob**, Associate Professor of Political Science  
Ph.D., University of California, Santa Barbara  
**Laura Westhoff**, Associate Professor of History and  
Education  
Ph.D., Washington University  
**Berit Brogaard**, Assistant Professor Philosophy  
Ph.D., SUNY Buffalo  
**Matthew Davis**, Assistant Professor in Educational  
Leadership and Policy Studies  
Ph.D., University of Texas  
**Virginia Navarro**, Associate Professor in Educational  
Psychology  
Ph.D., Washington University  
**Allon J. Uhlmann**, Assistant Professor of Anthropology  
Ph.D., Australia National University  
**Margaret Phillips**, Assistant Teaching Professor in Foreign  
Languages  
Ph.D., St. Louis University  
**Lynn Staley**, Assistant Teaching Professor in English  
Ph.D., St. Louis University  
**Vivian Eveloff**, Director of the Sue Shear Institute for  
Women in Public Life  
**Malika Horne**, Director of the Executive Leadership  
Institute  
Ph.D., St. Louis University  
**Steven G. Bailey**, Lecturer in Finance  
J.D., Southern Illinois University, Carbondale  
**Maria Balogh**, Assistant Teaching Professor in Foreign  
Languages  
M.A., Southern Illinois University, Carbondale  
**Colleen McKee**, Adjunct Lecturer in English  
M.F.A., University of Missouri –St. Louis  
**Jill Petzall**, Adjunct Lecturer in Film Studies  
M.A., Washington University  
**Dayna Stock**, Manager of the Sue Shear Institute for  
Women in Public Life

**General Information**

The Institute for Women's and Gender Studies has three central missions: to provide a comprehensive undergraduate and graduate gender studies curriculum, to support research on gender and women's issues, and to sponsor events and provide community outreach. Institute faculty engage in disciplinary and interdisciplinary scholarship to enhance our understanding of the ways in which gender, sex, and sexuality have structured human society and experience across time and cultures. Faculty and students draw upon the rich body of interdisciplinary feminist scholarship to investigate emerging theories and research on women, men, and gender. Our courses encourage a reassessment of female and male roles in society and facilitate career goals that focus on gender issues. WGST classes promote the exchange of knowledge among people of different genders, classes, ethnicities, sexualities and cultural conditions. WGST

courses enable students to broaden their educational experiences and develop new insights into their own lives and aspirations.

The Women's and Gender Studies program offers undergraduate and graduate certificates in cooperation with most of the departments in the College of Arts and Sciences, as well as with departments in the College of Fine Arts and Communication. The opportunity to earn an 18-hour certificate is available to all students pursuing a degree at the University of Missouri-St. Louis and to individuals with a bachelor's or master's degree from any university. Women's and Gender Studies courses are open to all students, whether or not they are working toward a certificate.

### **Undergraduate Certificate**

#### **Requirements**

##### **For Admission:**

Undergraduate certificate candidates must meet the University's general education requirements. Applicants must have a cumulative G.P.A. of at least 2.5 and must maintain a minimum 2.5 G.P.A. in WGST courses. Candidates for undergraduate certificates are asked to register with WGST after taking one or two courses. Students will then be enrolled in the program and will be placed on our mailing list for class information and announcements of upcoming events.

#### **Certificate Requirements**

Students must take at least 18 hours in Women's and Gender Studies courses.

9 hours must include 3 core courses:

- 1) **WGST 2102** Introduction to Women's and Gender Studies
- 2) **WGST 3033** Sexuality and Gender Theory or other 3000-5000 level courses in feminist or gender theory
- 3) **Capstone Experience:** Students must complete a final research project or practicum. The Capstone requirement may be satisfied by WGST 4352 Independent Study in Women's and Gender Studies, WGST 4353 Internship in Women's and Gender Studies, or by a 4000-level WGST course or other 4000-level seminar where student completes a final research and writing project that focuses on women's and gender studies.

9 hours may be cross-listed courses with student's major department or WGST electives from various disciplines.

#### **Graduate Certificate**

The graduate certificate in Women's and Gender Studies is designed for students who wish to receive post-baccalaureate training in gender studies.

#### **Requirements For Admission:**

Baccalaureate degree  
2.75 G.P.A.

Official transcripts of all previous undergraduate/graduate work

Two letters of recommendation

If you are not currently enrolled at the University of Missouri-St. Louis, you must apply through the Graduate School. This certificate is available to students with Bachelor's or Master's degrees and students enrolled in graduate degree programs. A student need not be enrolled in a degree program to earn the WGST graduate certificate. Post B.A./B.S. students may enroll in the undergraduate or graduate certificate program.

#### **Certificate Requirements**

At least 18 hours of Women's and Gender Studies courses at the 4000, 5000, and/or 6000 level

- 1) 3 hours must include a graduate feminist or gender theory course, which may be WGST 5033, Advanced Sexuality and Gender Theory, WGST 5040 Feminist Critical Theory, or other theory course.
- 2) 3 hours must include either a graduate internship or practicum, or final writing project, which may be an independent study WGST 6452 Special Readings in Women's and Gender Studies, or a substantial research and writing project for a WGST graduate seminar, which may be WGST 6450 Seminar in Women's and Gender Studies, or other cross-listed, 5000 or 6000-level seminar
- 3) 12 hours must be at the 5000 level or above, while up to 6 hours of 4000-level courses may be taken for graduate credit, as long as student completes graduate level work for the course.
- 4) No more than 6 hours may be taken as Directed or Independent Study credit.

Most WGST courses are cross-listed with other departments and count toward a department's degree requirements as well as toward the certificate.

#### **Course Descriptions**

##### **1004 The History of Women in the United States (3)**

Same as HIST 1004. A survey of women's history from the colonial era to the present.

##### **2100 Women in Contemporary Society (3)**

Same as SOC 2100. Prerequisites: SOC 1010 or WGST 2102 or consent of instructor. An introduction to the sociological analysis of the status of women in society, including their work, family, and political roles. Socialization, education, and the women's movement will also be considered, as these affect the position and participation of women in a variety of social arenas.

**2102 Introduction to Women's and Gender Studies (3)**

Same as SOC WK 2102, HIST 2102, and SOC 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 diverse female and male experiences and gendered power relationships.

**2150 Special Topics in Women's and Gender Studies\* (3)**

An introduction to a particular topic area in women's and gender studies (topics will be announced prior to registration), drawing on the theories and methods of such disciplines as sociology, psychology, political science, history, philosophy, art history, and others to examine particular aspects of gender in social and cultural life. Course may satisfy the distribution requirement for humanities or social sciences depending on the topic.

**2230 Psychology of Women (3)**

Same as PSYCH 2230. Prerequisites: PSYCH 1003. Evaluation of psychological theories and research regarding physiological, cognitive, and personality sex differences, female problems in adjustment, and clinical intervention for women.

**2253 Philosophy and Feminism (3)**

Same as PHIL 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, and the ethics of care.

**2290 Gender and the Law (3)**

Same as POL SCI 2290. This course examines the ways in which laws and interpretations of laws affect gender equality in the United States. Emphasizing how traditional roles impact both women and men historically and currently, the course highlights major pieces of legislation and court rulings related to employment, economics, education, sexual harassment, pornography, rape, reproductive rights, and domestic relations. The course stresses the impact of federal and state institutions and non-governmental influences on equality. It also addresses gender representation in the legal profession and its effect on judicial decisions. (This course satisfies State requirements in American History and Government.)

**3031 History of Women in the United States (3)**

Same as HIST 3031. Prerequisites: Junior standing or consent of the instructor. 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.

**3224 Marriage and the Family (3)**

Same as SOC 3224. Prerequisites: SOC 1010 or consent of instructor. The study of patterns of close relationships and how these relationships are influenced by larger social forces. Topics include: love, dating, mate selection, cohabitation, alternative lifestyles, working families, parenting, single mothers, families in crisis, domestic violence, and divorce. Universal and variable aspects of family organization, family role systems, and changes in family social structure.

**3350 Special Topics in Women's and Gender Studies\* (3)**

Prerequisites: WGST 2102 or consent of instructor. Special Topics in Women's and Gender Studies. Topics vary by semester.

**3352 Independent Studies in Women's and Gender Studies (1-3)**

Prerequisite: Junior standing; two courses in Women's and Gender Studies, including 2102; and consent of the instructor and the Institute. Directed independent work in selected women's and gender studies topics through readings, research, reports and/or conferences. Course may satisfy the distribution requirement for the humanities, social sciences or math/science depending on topic.

**3700 Diversity and Social Justice (3)**

Same as SOC WK 3700. Prerequisites: SOC 1010 or equivalent. Analyzes the structure, dynamics, and consequences of social and economic injustice, and the impact on diverse groups in American society. Examines theoretical models and practice principles for work with diverse groups.

**4325 Gender, Crime and Justice (3)**

Same as CRIMIN 4325 and SOC 4325. Prerequisites: CRIMIN 1110, 1120, 1130, 2210, 2220, 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.

**4350 Special Topics in Women's and Gender Studies\* (3)**

Prerequisites: WGST 2102 or consent of instructor. Special topics examined from a gender perspective in the fields of anthropology, art history, criminology, economics, English, foreign language, history, philosophy, political science, psychology, social work, sociology, business, or others. Topics and departments vary by semester. Course may be repeated by permission of WGST Director.

**4352 Independent Study in Women's and Gender Studies (1-3)**

Prerequisites: WGST 2102 or consent of instructor. Independent, directed readings and research in a women's and gender related topic, to be determined in consultation with instructor.

**4353 Internship in Women's and Gender Studies (3)**

Prerequisite: 90 hours. 2.5 GPA, 12 WGST hrs. Internship would place the student in a profit or nonprofit setting for approximately ten hours a week in an internship structured and supervised by the Institute; consent of Director required; may include biweekly seminar. Student must present appropriate course background for either option, plus the above pre/co-requisites.

**4452 Feminism and Science (3)**

Same as PHIL 4452. Prerequisites: 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. This course emphasizes feminist research in the philosophy and history of science, and in the biological sciences. Issues covered 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.

**4360 Sociology of Minority Groups (3)**

Prerequisites: SOC 1010 and junior standing or consent of instructor. Same as SOC 4360. The study of dominant-subordinate group relations. Religion, ethnicity, race, and gender as factors in the unequal distribution of power.

**4930 Studies in Gender and Literature (3)**

Same as ENGL 4930. Prerequisites: Students must satisfy English prerequisites for 4000-level courses or obtain permission of instructor. 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.

**5034 History of Sexuality (3)**

Same as HIST 5034. Prerequisites: 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.

**5350 Topics in Women's and Gender Studies (3)**

Prerequisite: Graduate standing and at least one Women's and Gender Studies course. This course will focus on a particular aspect of gender (to be announced prior to registration) and will draw upon recent theoretical and methodological work from a variety of disciplines.

**5450 Special Topics in Women's and Gender Studies (3)\***

Prerequisites: Graduate standing or consent of instructor. Special topics at the Graduate level examined from a gender perspective in the field of anthropology, art history, criminology, economics, English, foreign language, history, philosophy, political science, psychology, social work, sociology, business, or others. Topics and departments vary by semester.

**5500 Foundations of Human Behavior in the Social Environment (3)**

Same as SOC WK 5500. Prerequisites: SOC WK 3150 or equivalent or admission to the MSW program. Focuses on theoretical and empirical understanding of human behavior in the social environment using a life-span perspective. Introduces biological, behavioral, cognitive, and sociocultural theories of individuals, families, and small groups, and their implications for the professional social worker's understanding of socioeconomic status, gender, disability, ethnicity, race, and sexual orientation.

**5700 Diversity, Social Justice and Social Practice (3)**

Same as SOC WK 5700. Prerequisites: Graduate standing. Analyzes the structure, dynamics, and consequences of social and economic injustice, and the impact on diverse groups in American society. Examines theoretical models and practice principles for work with diverse groups.

**6350 Gender, Language & Identity (3)**

Prerequisites: Graduate standing. Same as TCH ED 6450. An interdisciplinary look at the ways gendered and racial identities get developed and shaped through language and culture. Readings will address the complex, yet sometimes invisible, ways that identity, language and gender intersect, creating and assigning roles, responsibilities, and possible selves to individuals and groups in a global world.

**6353 Graduate Internship in Women's and Gender Studies (1-6)**

Prerequisites: Graduate standing and consent of Director. Provides an opportunity for the Graduate Women's and Gender Studies student to acquire "real world" experience working in a non-profit, political, economic, or social service organization with a gender focus.

**6410 Women and Mental Health (3)**

Prerequisites: Admission to the doctoral program in Clinical Psychology or consent of instructor. Same as PSYCH 7410. This course will focus on contemporary research on the psychology of women pertaining to mental health issues. Etiology and treatment of disorders disproportionately affecting women will be emphasized.

**6418 Seminar in Human Sexuality (3)**

Prerequisites: Admission to the doctoral program in Clinical Psychology or consent of instructor. Same as PSYCH 7418. Review of theory and research in human sexuality from physiological, psychological, and social perspectives.



Implications for the assessment and treatment of sexual dysfunction are considered.

**6450 Seminar in Women's and Gender Studies (3)\***

Prerequisites: Graduate standing and consent of instructor. Critical examination of advanced topics in the humanities, social sciences, or natural sciences from women's and gender studies perspectives. May be taken more than once provided that the subject matter is different each time the seminar is taken.

**6452 Special Readings in Women's Studies/Gender Studies (3)**

Prerequisite: Admission to Graduate Certificate program and consent of instructor. Directed independent work on a selected Women's and Gender Studies topic through readings, research, reports, and/or conferences.

**\* Each semester the Director of the Institute for Women's and Gender Studies identifies courses being offered by other departments and they are cross listed with Women's and Gender Studies courses under the special topic course title. Consult the course schedule each semester for a list of these courses.**

### **Pre-Professional Programs**

Students at the University of Missouri-St. Louis may develop pre-professional study programs from the university's academic offerings in architecture, engineering, dentistry, journalism, law, medicine, optometry, pharmacy, or veterinary sciences. With early and careful advising, students may develop a two-year study program in preparation for transfer into a professional program in the junior year, or select a major field of study in preparation for graduate professional study.

Students should seek pre-professional faculty advisers in their interest area early in their academic careers to ensure development of sound, comprehensive study programs which fulfill the admission requirements of the professional program to which they wish to apply.

The following information on pre-professional study at UMSL is provided to give students minimal guidelines and assistance in planning a program.

#### **Pre-Architecture**

The Department of Art and Art History sponsors the 3+4 Program for the School of Architecture at Washington University. A student who is accepted to the School of Architecture, Washington University, at the end of the junior year may graduate with a Bachelor of Arts degree in art history from UMSL after the satisfactory completion of the first year of professional school upon meeting one or more of the following conditions:

- 1) The student has completed all general education requirements and all requirements for the art history major and lacks only the total hours (electives) necessary for a degree. (The courses at Washington University will fulfill all remaining courses.)
- 2) A student who has not completed required courses for the art history degree must remedy the deficiency with courses taken at the UMSL within three years of entering the professional school. At the time of graduation, the student must remain in good standing in the professional school or have successfully graduated from professional school.
- 3) A student who has not completed all the courses required for the art history major may, if the art and art history department at UMSL approves, substitute up to six hours of appropriate course work from the professional school.

The requirement that 24 of the last 30 hours of course work for a degree be taken at UMSL shall be waived where necessary for students graduating under this procedure. For more information on admission requirements, please contact the College of Arts and Sciences at (314) 516-5501, 303 Lucas Hall.

#### **Pre-Engineering**

The Joint Undergraduate Engineering Program of the University of Missouri-St. Louis and Washington University was established in 1993. It allows UMSL to offer complete

Bachelor of Science degree programs in mechanical, electrical and civil engineering.

All three programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).

Students who enter the joint program take the pre-engineering half of their course work on the campus of UMSL. The remaining half of their degree programs, consisting of upper-level engineering courses and laboratories, is taken on the campus of Washington University and taught by Washington University engineering faculty members. The two campuses are separated by a driving time of about 15 minutes. Alternatively, both are also easily reached by MetroLink.

The UMSL pre-engineering program provides a solid base in mathematics, physics, chemistry, and introductory engineering subjects. Students completing the pre-engineering program will be well prepared for transferring to engineering schools throughout the United States, including University of Missouri-Columbia, Missouri University of Science and Technology, Washington University, and SIU-Edwardsville, in addition to continuing their education and earning their engineering degrees at University of Missouri - St. Louis.

#### **Admission Requirements**

In addition to the general admission requirements, prospective undergraduate engineering and pre-engineering students may be required to take a mathematics placement test, given at UMSL the semester before enrolling.

Although there is no required pattern of high-school units for admission to the undergraduate engineering or pre-engineering programs, students are urged to complete at least four units of mathematics, including units in algebra (excluding general mathematics) and trigonometry. Calculus, if available, is also strongly recommended.

The following indicates pre-engineering course work required for students planning to pursue a Bachelor of Science degree in engineering at UMSL through the joint program with Washington University.

#### **Math**

- 1800, Analytic Geometry and Calculus I
- 1900, Analytic Geometry and Calculus II
- 2000, Analytic Geometry and Calculus III
- 2020, Introduction to Differential Equations

#### **Chemistry**

- 1111, Introductory Chemistry I
- 1121, Introductory Chemistry II

#### **Physics**

- 2111, Physics: Mechanics and Heat
- 2112, Physics: Electricity, Magnetism, and Optics

### Introductory Engineering

Engineering  
2310, Statics  
2320, Dynamics

### Humanities, Social Sciences, and English Composition English

1100, Freshman Composition  
Humanities Electives (three courses)  
Social Sciences Electives (three courses)

Students planning to earn a bachelor of science degree in engineering at UMSL should choose humanities and social sciences electives to meet both the UMSL general education requirements and the humanities and social sciences requirements of the Joint Undergraduate Engineering Program. In particular:

- \* A course in American history or government, or in Missouri history or government, must be included.
  - \* The cultural diversity requirement must be fulfilled.
  - \* A total of three humanities and three social science courses are required. At least one course must be at the junior level or higher, taken at a four-year institution.
- Please contact the UMSL Engineering Advisor at 314-516-6800 to be sure that the required humanities and social science courses are selected.

For further information about undergraduate engineering and pre-engineering programs at UMSL, please contact the UMSL/Washington University Joint Undergraduate Engineering Program at 228 Benton Hall, (314) 516-6800. Please note also that for four-year students there is a special program in Engineering and Honors. For further information, please contact the Honors College at C107 Provincial House, (314) 516-7769.

### Pre-Journalism

Students wishing to pursue a journalism degree should review the entrance requirements of the schools they would like to attend for information on suggested pre-journalism courses of study.

Students who plan to major in journalism at the University of Missouri-Columbia (MU) are encouraged to transfer no more than 45 hours, since a cumulative 3.0 GPA must be established at MU for at least one semester to qualify for admission. In addition, students must complete 61 acceptable hours that include the required courses listed below.

**English Composition:** English 1100-Freshman Composition, 3 hours, grade of B or higher. If a C- range grade is received, the student must pass the Missouri College English Test (MCET) on the UMC campus. Advanced Placement (AP) English Composition credit or International Baccalaureate test credit will be accepted for incoming freshmen admitted to UMC fall semester 2002 and after.

**Math:** Students must complete College Algebra with a grade C- range or higher, or have a minimum ACT math score of 26 or a minimum SAT score of 600.

**Foreign Languages:** Four years of high school work in one foreign language or 12-13 hours of college work in one foreign language.

**Biological, Mathematical, Physical Science:** Math 1310 – Elementary Statistics (C- range grade) plus six hours from biological anthropology, biology, chemistry, astronomy, geology, physics, above college algebra level math or computer science.\* One course must include a lab. **Please note:** College Algebra is the prerequisite course for statistics at UMC and UMSL.

\* Computer Science 1250 – Introduction to Computing.

**Social Science:** Fourteen hours are required to include American History; American Government/Introduction to Political Science; Microeconomics; Macroeconomics; and three hours in a behavioral science (psychology, sociology and anthropology, but not ANTHRO 1005); and three hours in any behavioral science, except Political Science 3340 – Politics and the Media. **Please note:** Pre-strategic communications majors must complete both microeconomics and macroeconomics.

**Humanistic Studies:** Nine hours are required to include three hours in any literature, plus two courses from TWO of the following areas: history or appreciation of art or music; humanities; philosophy; religious studies; non-U.S. civilization or classical studies; history or appreciation of communication, film or theatre.

**In addition, word processing skills are required (40 words per minute). A minimum TOEFL score of 600 is required for students whose native language is not English.**

Nontransferable courses at the School of Journalism include: basic military science, basic physical education, word processing or computer applications, typing or practical arts/vocational technical education courses, photography, public relations, advertising, journalism or mass communication, orientation, professional skills, college preparatory, and no more than three hours maximum of applied music, dance, acting or studio art.

Students are required to take four journalism courses (minimum C- range grades) at UMC prior to admission to the school: J1010 – Careers in Journalism (freshman year), J1100 – Principle American Journalism (second semester, freshman year), J2100 – News (sophomore year), and J2000 – Cross Culture Journalism (sophomore year). The English composition requirement must be satisfied prior to enrollment in J2000 and J2100. Completion of 15 hours and a minimum MU 2.75 GPA are required for J1100. Sophomore standing (30 hours and a minimum MU 2.8 GPA

are required for J2100 (English Composition with minimum B grade and J1100 are prerequisites) and J2000 (J1100 is prerequisite).

The School computes the grade point average for transfer students based on courses accepted toward admission until a MU GPA is established. The School uses the MU GPA for enrollment in the preliminary journalism courses and for acceptance to the sequences.

**Admission is by emphasis area.** Emphasis areas are Convergence Journalism, Magazine Journalism, Newspaper Journalism, Radio-TV Journalism, Strategic Communications and Photojournalism.

The School accepts credit through the College-Level Examination Program (CLEP – subject exams only), Advanced Placement Program (AP), and the International Baccalaureate (IB) program. Regulations apply.

Courses can be reviewed for credit by sending official transcripts to:

Admissions, 230 Jesse Hall, Columbia, MO 65211.

For advisement and information, contact the Office of Undergraduate Student Affairs in the College of Arts and Sciences, 303 Lucas Hall, 314-516-5501.

#### **Pre-Law**

Students planning to attend law school must pursue an undergraduate degree of their choice. There is no such thing as a pre-law major. Law schools encourage students to pursue a course of study that includes a broad liberal arts background. The pre-law advisor will assist students in choosing courses that will enhance their analytical and writing skills.

English language and literature courses are virtually indispensable. An awareness of the institutional processes of government obtained through study in political science is needed. Since law is inseparable from historical experience, an acquaintance with American history is important. Students should acquire knowledge of macro- and microeconomics. Statistics, accounting, and computer science are valuable in understanding special legal subjects and the practice of law. Other recommended courses include formal logic, public speaking, general psychology, intro sociology, ethics, theories of justice, and courses that promote cultural awareness.

The University of Missouri has law schools in Columbia and Kansas City. University of Missouri-St. Louis students may seek assistance in planning an undergraduate program, preparing for the LSAT, and applying to law school in the office of the pre-law adviser. Students should contact the pre-law adviser through the College of Arts and Sciences, 303 Lucas Hall, (314) 516-5501, early in their undergraduate studies.

#### **Pre-Health Sciences**

Students wishing to enter medical, dental, optometry, or veterinary medicine schools should pursue B.A. or B.S. degrees with majors in the disciplines of their choice, but should take whatever additional courses may be necessary as prerequisites for admission to the professional school. A baccalaureate degree is generally not required before entering pharmacy school.

Since admission requirements vary, students are urged to consult the catalogs of the schools to which they intend to apply. Updated information may be found in:

#### ***Medical School Admission (MSAR)\*\****

**Phone:** 1-202-828-0416; **Website:** [www.aamc.org/](http://www.aamc.org/)

#### **American Dental Education Association Official Guide to Dental Schools**

**Phone:** 1-202-289-7201; **Website:** [www.adea.org/](http://www.adea.org/)

#### **Schools and Colleges of Optometry Admission Requirements**

**Phone:** 1-301-231-5944; **Website:** [www.opted.org](http://www.opted.org)

#### **Pharmacy School Admission Requirements**

**Phone:** 1-703-739-2330; **Website:** [www.aacp.org](http://www.aacp.org)

#### **Veterinary Medical School Admission Requirements in the United States and Canada**

**Phone:** 1-202-371-9195; **Website:** [www.aavmc.org/](http://www.aavmc.org/)

**\*\*A copy of the MSAR is also available at the reference desk of the Thomas Jefferson Library.**

#### **Suggested Courses (Pre-Med, Pre-Dental, Pre-Vet)**

Many medical schools recommend the following undergraduate courses:

**Biology:** Biology 1811, Introductory Biology: From Molecules to Organisms; Biology 1821, Introductory Biology: Organisms and the Environment; Biology 2012, Genetics; and additional courses in molecular and/or cell biology.

**Chemistry:** Chemistry 1111, Introductory Chemistry I; Chemistry 1121, Introductory Chemistry II; Chemistry 2612, Organic Chemistry I; 2622, Organic Chemistry II; Chemistry 2633, Organic Chemistry Lab; and additional courses in organic chemistry and quantitative analysis. (Biochemistry is recommended.)

**Mathematics:** Students should take courses at least through calculus, as appropriate for the major degree, : Math. 1100, Basic Calculus or Math 1800, Analytical Geometry & Calculus I for biology majors; through Math 2000, Analytical Geometry and Calculus III for chemistry majors; and through Math 2020, Introduction to Differential Equations for physics majors. Consult with the Pre-Health Sciences advisor to determine the appropriate course(s).

**Physics:** 8 credit hours or as appropriate for the degree chosen, Physics 1011 & 1012-Basic Physics (biology majors), OR Physics 2111, Physics: Mechanics and Heat and

Physics 2112, Physics: Electricity, Magnetism and Optics (chemistry or physics majors). Consult with the Pre-Health and Sciences advisor.

Successful completion of these recommended courses also helps students prepare for required standardized exams. Since students are not confirmed for admission to professional schools until the science requirements for admission are fulfilled, students should meet the science requirements before the end of the junior year. **To complete these requirements in time, BIOL 1811, Introductory Biology: From Molecules to Organisms as well as Chemistry 1111 and 1112, Introductory Chemistry I and II should be taken during the freshman year.**

Students also should take the required national standardized examination before or during the junior year as is appropriate for the exam: The Medical College Admission Test (MCAT) for pre-med students; the Dental Aptitude Test (DAT) for pre-dental students; the Optometry Admission Test (OAT) for pre-optometry students; and the Pharmacy College Admission Test (PCAT), (if required) for pre-pharmacy students; and the Medical College Admission Tests or Graduate Record Exam (GRE) for pre-vet students. (Note: pre-vet students should consult with their intended veterinary colleges for appropriate test information.)

Each year the number of applicants to health profession schools exceeds the number of available places. Students, therefore, are encouraged to have alternative plans should they not gain entrance. Nursing, laboratory technology, and allied health may be considered as alternative fields.

For more information, testing dates, or pre-health science advising, contact the pre-health professions adviser through the College of Arts and Sciences, 303 Lucas Hall, (314) 516-5501.

#### Pre-Optometry

The University of Missouri - St. Louis offers a four-year program of study leading to the doctor of optometry degree; this professional degree is administered by the College of Optometry. It is one of only 16 currently accredited schools of optometry in the United States and the only one in the state of Missouri. This program, as a result, makes UMSL an ideal institution for pre-optometry education. Various programs are available for pre-optometry as noted below. Students may pursue a traditional 4+4 program, which is a bachelor's degree followed by the four-year graduate optometry program. In this case, students may pursue any bachelor's degree, as long as the pre-optometry requirements are met in biology, chemistry, math, physics, psychology, and English.

Alternatively, the Department of Biology and the Department of Physics and Astronomy sponsor 3+4 Programs for the UMSL College of Optometry, for which a student may be admitted to the College of Optometry after completing three years (90 semester hours) of study in their

respective majors and successful completion of the Optometry Admission Test (OAT).

The Pierre Laclède Honors College and the College of Optometry also offer the Scholars Program, which allows a student to complete both the undergraduate and doctor of optometry degrees in seven years. To qualify for this program, a student must be a senior in high school; score a minimum of 27 on the ACT; and be accepted to the UMSL Pierre Laclède Honors College program. For more information about the Scholars Program, contact the Pierre Laclède Honors College, (314) 516-5311.

In some cases, students are admitted to the optometry program without a degree.

Note: Math 1800, Analytical Geometry and Calculus I must be taken in the first semester for most 3+4 or Scholars Programs.

For more information on admission requirements for the College of Optometry, please refer to the Optometry section of this Bulletin.

#### Pre-Pharmacy

In general, a pharmacy program may consist of 1-3 years of pre-professional study followed by 4-5 years in a professional program. Some institutions, however, offer the entire program at the pharmacy college or school. *Since entrance requirements vary, students should consult the catalog and/or web site of the college or school to which they want to apply.* Missouri has two pharmacy schools: St. Louis College of Pharmacy, and University of Missouri-Kansas City School of Pharmacy. Beginning Fall 2005, the metropolitan area also includes Southern Illinois University Edwardsville School of Pharmacy. Internet links for these and other pharmacy programs in the United States, Canada and abroad can be found at the web site for the American Association of Pharmacy Colleges, [www.aacp.org](http://www.aacp.org).

Before taking any courses for pre-pharmacy, UMSL students should contact the College of Arts and Sciences, 303 Lucas Hall, for pre-pharmacy information. It is important that students take the correct courses for the pharmacy programs they are seeking. *Generally, science admission requirements may include some or all of the courses listed below (and possibly other courses):*

**BIOL 1811, Introductory Biology: From Molecules to Organisms**

**BIOL 1821, Introductory Biology: Organisms and the Environment**

**BIOL 1131, Human Physiology and Anatomy I**

**BIOL 1141, Human Physiology and Anatomy II**

**CHEM 1111, Introductory to Chemistry I**

**CHEM 1121, Introductory to Chemistry II**

**CHEM 2612, Organic Chemistry I**

**CHEM 2622, Organic Chemistry II**

**CHEM 2633, Organic chemistry Laboratory**

**MATH 1800**, Analytical Geometry and Calculus I  
**PHYSICS 1011**, Basic Physics  
**PHYSICS 1012**, Basic Physics

Usually, pre-pharmacy requirements also include courses in **English composition, humanities, social and behavioral sciences**. The specific pharmacy school or college specifies these requirements. In addition, many pharmacy institutions require applicants to take the Pharmacy College Admission Test (PCAT). Detailed information about the PCAT is available online at [www.pcatweb.info](http://www.pcatweb.info). For additional information about application deadlines and procedures, GPA requirements, and letters of recommendation, students should consult the catalogs and/or web sites for the programs they intend to apply.

Pre-Pharmacy advising and information is available through the Office of Undergraduate Student Affairs in the College of Arts and Sciences, 303 Lucas Hall, 314-516-5501.

**College of Business Administration**

**Faculty**

**Keith Womer**, Professor, Dean  
Ph.D. Pennsylvania State University  
**Allan Bird**, Professor, Eiichi Shibusawa-Seigo Arai  
Professor in Japanese Studies  
Ph.D., University of Oregon, Director, International  
Business Institute  
**Hung-Gay Fung**, Professor, Y.S. Tsiang Professor in  
Chinese Studies  
Ph.D., Georgia State University  
**Ray Mundy**, Professor, John W. Barriger II Professor in  
Transportation Studies, Director, Center for Transportation  
Studies  
**Janet Y. Murray**, Professor, E. Desmond Lee Endowed  
Professor for Developing Women Leaders and  
Entrepreneurs  
Ph.D., University of Missouri-Columbia  
**David Ricks**, Curators' Professor Emeritus  
Ph.D., Indiana University  
**Rajiv Sabherwal**, Curators' Professor  
Ph.D., University of Pittsburgh  
**John J. Anderson**, C.P.A., C.M.A., Professor Emeritus,  
Associate Dean Emeritus  
Ph.D., University of Wisconsin-Madison  
**Nasser Arshadi**, Professor, Vice Provost for Research  
Ph.D., University of Nebraska  
**Howard B. Baltz**, Professor Emeritus  
Ph.D., Oklahoma State University  
**James A. Breaugh**, Professor,  
Coordinator of Management  
Ph.D., Ohio State University  
**James F. Campbell**, Professor,  
Ph.D., University of California, Berkeley  
**William P. Dommermuth**, Professor Emeritus  
Ph.D., Georgia State University  
**Douglas E. Durand**, Professor Emeritus, Dean Emeritus  
Ph.D., Washington University  
**Michael M. Harris**, Professor  
Ph.D., University of Illinois-Chicago  
**Marius A. Janson**, Professor  
Ph.D., University of Minnesota  
**Kailash Joshi**, Professor  
Ph.D., Indiana University  
**Mary Lacity**, Professor  
Ph.D., University of Houston  
**Edward C. Lawrence**, Professor,  
Coordinator of Finance  
Ph.D., Pennsylvania State University  
**Joseph S. Martinich**, Professor  
Ph.D., Northwestern University  
**Robert M. Nauss**, Professor; Coordinator of Logistics and  
Operations Management  
Ph.D., University of California, Los Angeles

**David Ronen**, Professor  
Ph.D., Ohio State University  
**Vicki Sauter**, Professor  
Ph.D., Northwestern University  
**L. Douglas Smith**, Professor; Director,  
Center for Business and Industrial Studies  
Ph.D., University of Minnesota  
**Robert S. Stich**, Professor Emeritus  
Ph.D., New York University  
**Fred J. Thumin**, Professor Emeritus; Diplomat, Industrial  
and Organizational Psychology  
Ph.D., Washington University  
**Deborah B. Balsler**, Associate Professor  
Ph.D., Cornell University  
**Donald H. Driemeier**, Associate Professor Emeritus;  
Dean Emeritus  
D.B.A., Washington University  
**Michael T. Elliott**, Associate Professor, Associate Dean and  
Director of Undergraduate Studies in Business  
D.B.A., Mississippi State University  
**Timothy A. Farmer**, C.P.A., Associate Professor  
Ph.D., Ohio State University  
**Greg Geisler**, Associate Professor  
Ph.D., University of North Carolina at Chapel Hill  
**D'Anne G. Hancock**, Associate Professor  
Ph.D., University of New Orleans  
**Julius H. Johnson, Jr.**, Associate Professor  
Ph.D., George Washington University  
**Charles R. Kuehl**, Associate Professor Emeritus  
Ph.D., University of Iowa  
**Donald R. Kummer**, Associate Professor  
Ph.D., University of Oregon  
**Haim Mano**, Associate Professor,  
Coordinator of Marketing  
Ph.D., University of Chicago  
**Dinesh Mirchandani**, Associate Professor  
Ph.D., University of Kentucky  
**Stephen R. Moehrle**, C.P.A., Associate Professor  
Ph.D., Indiana University  
**Mary Beth Mohrman**, Associate Professor,  
Coordinator of Accounting  
Ph.D., Washington University  
**R. Frank Page**, C.P.A., Associate Professor Emeritus  
Ph.D., University of Illinois  
**Jennifer Reynolds-Moehrle**, C.P.A., Associate Professor  
Ph.D., Indiana University  
**Joseph Rottman**, Associate Professor  
Ph.D., Washington University  
**Mahesh Shankarmahesh**, Associate Professor  
Ph.D., Old Dominion University  
**Paul S. Speck**, Associate Professor  
Ph.D., Texas Tech University  
**Ashok Subramanian**, Associate Professor,  
Coordinator of Information Systems  
Ph.D., University of Houston  
**Bindu Arya**, Assistant Professor  
Ph.D., University of Texas at Dallas  
**Frank Q. Fu**, Assistant Professor

Ph.D., University of Houston  
**David R. Ganz**, Assistant Professor Emeritus; Associate Dean Emeritus  
M.S. in C., Saint Louis University  
**Gerald Yong Gao**, Assistant Professor  
Ph.D., University of Hong Kong  
**Young-Won Her**, Assistant Professor  
Ph.D., University of South Carolina at Columbia  
**James M. Krueger**, C.P.A., Assistant Professor, Vice Chancellor for Managerial & Technological Services  
D.B.A., Indiana University  
**Natalia Mintchik**, Assistant Professor  
Ph.D., University of North Texas, Denton  
**Kyeungrae (Kenny) Oh**, Assistant Professor  
Ph.D., University of Texas at Dallas  
**Erin K. Pellegrini**, Assistant Professor  
Ph.D., University of Miami  
**Pamela S. Stuerke**, Assistant Professor  
Ph.D., Indiana University  
**Gaiyan Zhang**, Assistant Professor  
Ph.D., University of California, Irvine  
**Robert J. Banis**, Teaching Professor  
Ph.D., North Carolina State University at Raleigh  
**Kenneth W. Locke**, Teaching Professor  
D.B.A., Indiana University-Bloomington  
**Donald C. Sweeney II**, Teaching Professor, Associate Director, Center for Transportation Studies  
Ph.D., Washington University  
**Alan Wheeler**, Associate Teaching Professor  
Ph.D., Stanford University  
**Wayne W. Winter**, Emeritus Teaching Professor, L.L.M., Washington University  
**Daniel Lee Rust**, Assistant Teaching Professor  
Ph.D., University of Idaho  
**Rhonda Tenkku**, Assistant Teaching Professor  
M.B.A., University of Missouri - St. Louis  
**James Tiburzi**, Assistant Teaching Professor  
J.D., University of Illinois-Urbana  
**David A. Bird**, Instructor Emeritus  
M.S., Washington University  
**Lindell P. Chew**, Instructor  
M.B.A., University of Missouri-Columbia  
**Michael Costello**, Assistant Teaching Professor  
J.D. St. Louis University; MICL, VRIJC Universeit Brussel  
**John Cox**, Instructor Emeritus  
M.A., University of Missouri-Columbia  
**Ottilia Voegtli**, Instructor Emeritus  
M.B.A., University of Missouri-St. Louis  
**Michael Brown**, Lecturer  
M.B.A., Walsh College of Accounting & Business Administration  
**Joy Dakich**, Lecturer  
M.A., University of Missouri-St. Louis  
**Peggy A. Lambing**, Lecturer  
M.B.A., University of Missouri-St. Louis  
**Emily K. Lane**, Lecturer  
M.S., University of Missouri - St. Louis  
**Gwen Moore**, Lecturer  
M.B.A., Washington University

**Johnna Murray**, Lecturer  
MAcc., University of Missouri-St. Louis  
**Elizabeth W. Vining**, Lecturer  
M.B.A., University of Missouri-St. Louis

### History

The University of Missouri - St. Louis College of Business Administration was established in 1967, and was accredited by AACSB-International six years later, the shortest time on record for any school to receive accreditation of its business program. AACSB-International is the only internationally recognized accrediting agency for business and accounting programs. In 2006, the College of Business Administration received reaccreditation of its business and accounting programs, both undergraduate and graduate.

### Vision

The University of Missouri-St. Louis College of Business Administration will become one of the top metropolitan public business schools in the country and be recognized as a leading student-centered provider of quality business education.

### Mission

**The College of Business Administration is committed to:**

- Providing students a high quality business education at the undergraduate and graduate levels.
- Creating educational value by delivering innovative, cutting-edge curriculum, using both traditional and non-traditional delivery methods.
- Conducting and disseminating basic and applied research that advances our understanding of issues relevant to the effective administration of organizations.
- Serving the University, the St. Louis business and not-for-profit communities, the citizens of Missouri, and society at large.

### Values

**Opportunity:** We are committed to providing students an opportunity to excel in a rigorous academic business program.

**Knowledge:** We value the creation, application, and communication of knowledge to advance business disciplines and improve management practices.

**Access:** We strive to ensure that our programs are accessible, consistent with the land-grant mission of the University of Missouri.

**Integrity:** We value high standards of professional and ethical conduct.

**Excellence:** We strive for excellence in our own endeavors and expect it of those with whom we work.



**Community:** We value our ties with the business and not-for-profit communities, and work to create opportunities of mutual benefits.

**Respect:** We endeavor to treat all people with dignity and respect, and to maintain fairness in our interactions with all students, employees and the community.

**Diversity:** We seek to maintain a diverse and involved community of students, faculty, and staff.

**Collegiality:** We seek to provide a collegial climate that fosters positive relationships among students, faculty and staff.

### College of Business Administration Programs

#### Undergraduate Degrees

Bachelor of Science in Accounting  
Bachelor of Science in Business Administration  
(with emphasis areas available in)

Finance  
International Business  
Logistics and Operations Management  
Management  
Marketing

Bachelor of Science in Information Systems

#### Undergraduate Minors

Accounting  
Finance  
General Business  
Information Systems  
International Business  
Logistics and Operations Management  
Management  
Marketing

#### Undergraduate Certificate

International Business Certificate (see International Studies)  
Post-Baccalaureate Certificate in Accounting

#### Graduate Degrees

Master of Accounting

Master of Business Administration

Accounting  
Finance  
Information Systems  
Logistics and Supply Chain Management  
Management  
Marketing  
Operations Management

Master of Science in Information Systems

Ph.D. in Business Administration

Information Systems  
Logistics and Supply Chain Management

#### Graduate Certificates

Graduate Certificate Program in Business Administration  
Graduate Certificate in Human Resources Management  
Graduate Certificate in Logistics and Supply Chain Management  
Graduate Certificate in Marketing Management

#### Undergraduate Programs

Detailed information concerning all degree requirements can be found by visiting our web site, at [http://www.umsl.edu/divisions/business/undergrad\\_advising/](http://www.umsl.edu/divisions/business/undergrad_advising/).

#### Admission Requirements

At present students entering UMSL may self declare themselves as "business" students and they are assigned to business as their academic unit. They are advised in business and may take business courses so long as they maintain a minimum campus grade point average of 2.0 and have satisfied the prerequisites for the courses they propose to take.

Beginning in the fall 2009, students who have not yet been admitted to the College of Business may declare themselves as "pre-business" students. They will have business as their academic unit and be advised in business. Students will not be formally admitted to the College of Business Administration until they file a formal application for admission.

Formal admission to the College of Business Administration is by application through an academic advisor in the College of Business Administration. Applicants for such admission must meet the following requirements:

- a minimum 2.5 campus grade point average based on a minimum of 12 credit hours completed at UM-St. Louis; and
- completion of the following cluster of courses (or their equivalent) with a minimum 2.0 grade point average in the cluster, with a grade of C- or better in each of these courses (note: all attempts at each course in the cluster will be used in calculating this minimum grade point average):

MATH 1030, College Algebra  
MATH 1100, Basic Calculus  
MATH 1105, Basic Probability & Statistics  
ECON 1001, Microeconomics  
ECON 1002, Macroeconomics  
ACCTNG 2400, Financial Accounting  
ACCTNG 2410, Managerial Accounting  
INFSYS 2800, Information Systems Concepts and Applications  
BUS AD 2900, Legal Environment of Business

Students not formally admitted to the College of Business Administration will be limited to no more than 15 hours of upper division business (BA) courses. Once formally

admitted, students are required to maintain a 2.3 grade point average or better to be in good standing in the College of Business Administration.

**Lower Division Requirements—all degrees—all students**

Each student must complete a 42-hour block of general education coursework fulfilling six goals—three skill goals and three knowledge goals. The skill goals include two courses in communicating, one course in managing information and one course in valuing. The knowledge goals include three courses in the social sciences, three courses in the humanities, and four courses in the combined areas of mathematics and science. All courses must be selected from a list approved by the Faculty Senate of the campus. In many instances courses required by the College of Business Administration for each of its degree programs will satisfy a segment of the general education requirements. A list of courses which fulfill the humanities, social science, and math/science knowledge goals can be obtained in the Office of Undergraduate Academic Advising in the College of Business Administration, 487 Social Sciences and Business (SSB) building; or by visiting our web site.

**Lower Division Non-Business Course Requirements**

Students pursuing any undergraduate business degree must complete the following non-business courses:

**ENGL 1100**, Freshmen Composition (communicating skill goal)

One additional “communicating skills goal” course

**MATH 1030**, College Algebra (math/science knowledge goal)

**MATH 1100**, Basic Calculus (math/science knowledge goal)

**MATH 1105**, Basic Probability and Statistics (math/science knowledge goal)

**ECON 1001**, Principles of Microeconomics (valuing skill goal and social science knowledge goal)

**ECON 1002**, Principles of Macroeconomics (social science knowledge goal)

A science lecture course (math/science knowledge goal)

A cultural diversity course

A course required by the State of Missouri

Three humanities courses (humanities knowledge goal)

Two social science courses (in addition to those above)

**Lower Division Business Course Requirements**

**ACCTNG 2400**, Fundamentals of Financial Accounting

**ACCTNG 2410**, Managerial Accounting

**INFSYS 2800**, Information Systems Concepts and Applications

**BUS AD 2900**, Legal Environment of Business

**Upper Division Requirements—all degrees—all students**

**Upper Division Non-Business Requirement**

**ENGL 3120**, Business Writing, with a minimum grade of C-

**Upper Division Non-Business or Business Requirement**  
Two global awareness courses selected from an approved list maintained in the Office of Undergraduate Academic Advising in the College of Business Administration; also available on our web site.

**Upper Division Business Requirements**

**LOG OM 3300**, Business Statistics

**LOG OM 3320**, Introduction to Operations Management

**FINANCE 3500**, Financial Management

**MGMT 3600**, Management and Organizational Behavior

**MKTG 3700**, Basic Marketing

**MGMT 4219**, Strategic Management

A minimum of 18 additional hours of upper division approved business electives

**Assessment-All degrees—all students**

**BUS AD 4220**, Business Assessment Testing, is administered to all graduating seniors. A “Satisfactory” grade is required for graduation.

**General Degree Requirements—all degrees—all students**

Students must complete a minimum of 120 credit hours for any baccalaureate degree from the College of Business Administration.

Students must complete a minimum of 60 non-business hours.

Students must complete a minimum of 48 hours in business courses.

Students must complete a minimum of 36 hours of upper division business courses.

Students are limited to a maximum of 24 credit hours in any single business discipline beyond core courses.

Students are limited to a maximum of 78 credit hours in business and economics combined.

Students must attain a minimum campus grade point average of 2.3. Grade modification may be used in calculating this grade point average.

Students must attain a minimum business grade point average of 2.3. Grade modification may not be used in calculating this grade point average.

Students seeking an emphasis area or major within the Bachelor of Science in Business Administration degree, Bachelor of Science in Accounting degree, and/or Bachelor of Science in Information Systems degree must attain a minimum grade point average of 2.3 in the emphasis/major. Grade modification may not be used in calculating this grade point average.

A minimum grade of C- is required for each course in the business core (except BA 4219); for each course which serves as a prerequisite for another course; and for each course in an emphasis area and/or major.

Of the maximum of 18 hours which may be taken on a satisfactory/unsatisfactory graded basis, only 9 hours can be in business, and those are restricted to electives—courses beyond the required business core courses.

Business course prerequisites are enforced by the College of Business Administration and include a minimum campus grade point average of 2.0 as a condition for taking any upper division business course.

Emphasis Areas may be added for up to two years following degree completion.

Each additional degree from the College of Business Administration requires 15 unique hours taken at UMSL subsequent to completion of the prior business degree.

### Learning Outcomes

1. Develop the ability to write and deliver a professional presentation.
2. Develop the ability to form teams and work in teams.
3. Understand ethical considerations in all dimensions of business.
4. Be aware of international issues in business.
5. Have the ability to critically evaluate information.
6. Be able to independently research a topic in business.
7. Develop skill in using technology to solve business problems.
8. Understand basic management principles and practices and how they affect the success of an organization.
9. Understand basic finance principles and practices and how they affect the success of an organization.
10. Understand basic accounting principles and how they affect the success of an organization.
11. Understand basic operations and logistic management principles and practices and how they affect the success of an organization.
12. Understand basic marketing principles and practices and how they affect the success of an organization.
13. Understand basic information systems principles and practices and how they affect the success of an organization.
14. Develop skill to think strategically about business.

### Transfer Issues

Students must complete a minimum of 60 hours from four year, baccalaureate degree granting colleges/universities. A minimum of 50% of all business course work must be completed at UMSL.

Students must complete a minimum of 21 graded hours in business courses.

Individuals must complete their last 30 hours in residence at UMSL.

A minimum of 56 graded hours at UMSL are required to qualify for consideration for Latin Honors.

Students seeking to use a lower division course to satisfy an upper division business requirement must validate the course being transferred. If successfully validated, the transfer course will waive the need to take the upper division equivalent course at UMSL, but the course transferred will

be counted as lower division; it will not count toward the 36 upper division hours required in business.

Completion of a 42-hour general education block, which is certified by the sending institution as fulfilling its general education requirement, will be viewed as fulfilling UMSL's general education. However, all lower division courses required as part of a degree program at UMSL must be completed.

### Requirements Unique to Specific Degrees in the College of Business Administration

#### Bachelor of Science in Accounting Degree

#### Mission of the UMSL Accounting Area

To foster excellence in accountancy by:

- 1) Providing a rigorous educational experience as a framework for lifelong learning to individuals of diverse academic backgrounds
- 2) Creating, expanding and disseminating knowledge through scholarly activities
- 3) Serving the academic, professional and business communities

#### Lower or Upper Division Non Accounting Courses Required

One of:

**COMM 1030**, Interpersonal Communication I

or

**COMM 1040**, Introduction to Public Speaking

or

**BUS AD 3100**, Contemporary Business Communications  
and one of:

**PHIL 1130**, Approaches to Ethics

or

**PHIL 2254**, Business Ethics

#### Upper Division Accounting Courses Required

#### Business Administration (BUS AD)

**ACCTNG 3401**, Financial Accounting and Reporting I

**ACCTNG 3402**, Financial Accounting and Reporting II

**ACCTNG 3411**, Cost Accounting

**ACCTNG 3441**, Income Taxes

and one of either

**ACCTNG 3421**, Accounting Information Systems or

**ACCTNG 3810**, Information Systems Analysis

The prerequisite for enrollment in **ACCTNG 3402**, **3411**, **3441**, **3451** and all 4000-level accounting courses is an upper-level accounting grade point average of 2.2. or higher.

See the Office of Undergraduate Academic Advising for alternatives to satisfy the State of Missouri's requirement of 150 hours for eligibility to take the Uniform Certified Public Accounting Examination.

### **Post-Baccalaureate Certificate in Accounting**

**Prerequisite:** Bachelor's degree (in any subject)

**Prerequisite courses:** MATH 1030, ACCTNG 2400, ACCTNG 2410, MATH 1030 (College Algebra) is a prerequisite for the required accounting courses. It may be taken concurrently with ACCTNG 2400, but must be completed prior to enrollment in ACCTNG 2410. ACCTNG 2400 (Fundamentals of Financial Accounting) and ACCTNG 2410 (Managerial Accounting) are also prerequisites for the 3000-level accounting courses.

**Required:** Complete 27 hours of accounting courses at the 3000-level or above, at least 15 hours of which are completed at UMSL. The accounting courses must include the six required courses listed below and three accounting electives. Courses previously completed can be waived upon presentation of appropriate documentation. Waived courses will not count toward the 15-hour residency requirement.

Courses must be completed with a grade of C- or higher. The grade point average for all courses counting toward the Post-Baccalaureate Certificate in Accounting must be 2.0 or higher. The prerequisite for enrollment in ACCTNG 3402, 3411, 3441, 3451 and all 4000-level accounting course is an upper-level accounting grade point average of 2.2 or higher.

**Required courses:**

ACCTNG 3401, Financial Accounting & Reporting I  
ACCTNG 3402, Financial Accounting & Reporting II  
ACCTNG 3411, Cost Accounting  
ACCTNG 3421, Accounting Information Systems  
ACCTNG 3441, Income Taxes  
ACCTNG 4435, Auditing

**Electives (most of these are offered only once a year)**

ACCTNG 3451, Accounting for Governmental and Non-profit Entities  
ACCTNG 4401, Financial Accounting & Reporting III  
ACCTNG 4402, Financial Accounting & Reporting IV  
ACCTNG 4405, Professional Accounting Research  
ACCTNG 4441, Advanced Federal Income Tax and Business Taxation

Notes on qualifying for the CPA exam in Missouri:

Successful completion of the Post-Baccalaureate Certificate in Accounting includes all the accounting courses needed to qualify for the CPA exam in Missouri. However, Missouri law also requires a total of 60 credit hours in business (including the accounting courses). Many students with undergraduate degrees in business have satisfied this requirement. A student who has not satisfied this requirement must take additional business classes in order to qualify for the CPA exam.

In addition, Missouri requires 150 credit hours of college level coursework in order to qualify for the CPA exam. A student who has completed a 120 hour undergraduate business degree and the Post-Baccalaureate Certificate in

Accounting will need additional coursework in order to satisfy the 150-hour requirement.

### **Bachelor of Science in Business Administration Degree**

#### **General Business**

For those undecided regarding a specific emphasis area, a general business degree option is available. Students must complete a minimum of 18 hours of upper division approved business electives (see comprehensive list of business courses in the course descriptions section of this publication)

#### **Emphasis in Finance**

Finance is a multidisciplinary field that combines various concepts from management, economics and accounting with financial techniques to make sound business decisions and solve problems.

A minimum of 15 hours of upper division finance electives must be selected from the following:

FINANCE 3501, Financial Policies  
FINANCE 3502, Treasury Management  
FINANCE 3503, Computer Applications in Finance  
FINANCE 3520, Investments  
FINANCE 3521, Financial Risk Management  
FINANCE 3525, Practicum in Investments  
FINANCE 3540, Financial Services Industry and Instruments  
FINANCE 3541, Commercial Bank Management  
FINANCE 3542, Principles of Real Estate  
FINANCE 3560, Practice of Personal Financial Planning  
FINANCE 3561, Principles of Insurance  
FINANCE 3562, Life Insurance  
FINANCE 3563, Retirement Planning and Employee Benefits  
FINANCE 3564, Estate Planning and Trusts  
FINANCE 3580, International Finance  
FINANCE 3582, International Investment  
FINANCE 3599, Independent Study (approved)

#### **Track Certification**

Students may combine selected courses from the list above, and other specified upper division business electives, to fulfill a designated track with dual objectives of acquiring in depth knowledge, and to prepare and be eligible for various professional certification examinations. Detailed information is available in the Office of Undergraduate Academic Advising. The specific tracks available include:

Corporate Finance  
Financial Institutions and Services  
Investment and Portfolio Management  
Financial Planning  
Insurance

#### **Emphasis in International Business**

National markets are becoming increasingly integrated. The study of international business focuses on understanding the forces behind this globalization of markets and production.

Twelve (12) hours are required of all individuals seeking an emphasis in International Business:

Two of the following courses:

**Business Administration (BUS AD)**

**FINANCE 3580**, International Finance

**MGMT 3682**, Managing the Global Workforce

**MKTG 3780**, International Marketing

Plus two additional approved international business courses other than BA 3289, the international business practicum. (Lists of approved courses are available in the CoBA student advising office.) Proficiency in a foreign language of international commerce (determined by the College of Business Administration) must be demonstrated - 13 credit hours in one approved language or satisfactory performance on the UMSL foreign language placement test.

An international experience is encouraged for all parties in the program: such experience is required for those individuals seeking the International Business emphasis through the Pierre Laclède Honors College. (International students in the Honors College program are required to demonstrate a three-month, full-time work experience in the United States.)

**Emphasis in Logistics and Operations Management**

This discipline has as its objective to get the appropriate goods or services to the right place, at the right time, in the right quality and quantity—thereby making the greatest contribution to the organization.

Students must complete a minimum of 12 credit hours selected from the following:

**Business Administration (BUS AD)**

**LOG OM 3399**, Independent Study (approved)

**INFSYS 3843**, Decision Support Systems

**LOG OM 4312**, Business Forecasting

**LOG OM 4322**, Lean Production in Manufacturing and Service Operations

**LOG OM 4324**, Service Operations Management

**LOG OM 4326**, Quality Assurance in Business

**LOG OM 4330**, Business Logistics Systems

**LOG OM 4350**, Management Science Methods

**LOG OM 4354**, Operations Research II

**LOG OM 4381**, International Logistics & Operations Mgmt

At most, one of the following courses may be counted toward the LOG OM emphasis area.

**INFSYS 3806**, Managerial Applications of Object-Oriented Programming I (programming)

**INFSYS 3842**, Management of Telecommunications

**INFSYS 3844**, Developing Business Applications in .NET

**Emphasis in Management**

The study of management focuses on the behavior of individuals and groups in an organizational setting.

Students must complete MGMT 3611, Advanced Management and Organizational Behavior, plus 3 courses selected from

**BUS AD 3289**, Practicum in International Business

**MGMT 3621**, Human Resource Management

**MGMT 3622**, Industrial and Labor Relations

**MANGMT 3623**, Industrial and Organizational Psychology (same as Psychology 3318)

**MGMT 3624**, Employee Training and Development

**MGMT 3680**, International Management

**MGMT 3682**, Managing the Global Workforce

**MGMT 3684**, The Japanese Management System

**MGMT 3685**, Role of the Global Corporation

**MGMT 3699**, Independent Study (approved)

**MGMT 4614**, Entrepreneurship/Small Business Management

**MGMT 4689**, International Strategic Management

**Emphasis in Marketing**

Marketing involves the activities needed to facilitate an exchange. This includes selling products, services, or ideas to both individual consumers and business buyers.

Students must complete 4 upper division marketing courses in addition to the capstone course, MKTG 4700, Marketing Management.

The four courses may be selected from:

**MKTG 3710**, Consumer Behavior

**MKTG 3720**, Management of Promotion

**MKTG 3740**, Marketing Research

**MKTG 3750**, Sales Management

**MKTG 3760**, Business to Business Marketing

**MKTG 3770**, Introduction to Transportation

**MKTG 3780**, International Marketing

**MKTG 3790**, Internship in Marketing

## Bachelor of Science in Information Systems Degree

### Mission

The Information Systems (INFSYS) area endeavors to prepare high-potential students of diverse backgrounds for successful careers in the IS profession. Careers in IS may include programming, systems analysis and design, database administration, end-user support, network administration, and management consulting. The goal is to provide students with the skills to deal with the challenges confronting IS through teaching, research, and service to the profession. Students are required to complete a minimum of 7 courses beyond required business core courses

Programming – 2 courses (6 hours)

INFSYS 3806, Managerial Applications of Object Oriented Programming I

INFSYS 3816, Managerial Applications of Object Oriented Programming II

Analysis and Design—2 courses—(6 hours)

INFSYS 3810, Information Systems Analysis

INFSYS 4850, Information Systems Design

Database—1 course (3 hours)

INFSYS 3845, Database Management Systems

Students must complete 2 courses (at least one 3800-level business Information Systems course) from the following list:

INFSYS 3807, Legacy Systems

INFSYS 3815, Object Oriented Applications in Business

INFSYS 3841, Enterprise Information Systems

INFSYS 3842, Management of Telecommunications

INFSYS 3843, Decision Support Systems

INFSYS 3844, Developing Business Applications in .NET

INFSYS 3846, e-Commerce

INFSYS 3847, Web Design

ACCTNG 3421, Computer Applications in Accounting

FINANCE 3503, Computer Applications in Finance

A pre-approved Computer Science Class

Seminars and Independent Studies are restricted to those offered by and approved by the Area faculty and approved by the Area Coordinator

INFSYS 3899, Independent Study in Information Systems

### Minors in Business Administration

#### General Requirements

All minors are 15 credit hours or 5 courses, including business core courses.

Students must attain a 2.0 grade point average for all courses in the minor.

Students must attain a minimum grade of C- in each course included in the minor.

All courses in the minor must be on a graded basis.

A minimum of 9 credit hours of coursework included in the minor must be taken in residence at UMSL.

One must complete a baccalaureate degree at UMSL in order for a minor to be conferred.

A minor may be added for up to two years following completion of the baccalaureate degree.

#### Minor in General Business

This minor is available only to students seeking a baccalaureate degree outside the College of Business Administration

Five courses selected from

INFSYS 1800, Computers and Information Systems

ACCTNG 2400, Fundamentals of Financial Accounting

BUS AD 2900, Legal Environment of Business

LOG OM 3320, Introduction to Operations Management

FINANCE 3500, Financial Management

MGMT 3600, Management and Organizational Behavior

MKTG 3700, Basic Marketing

#### Minor in Accounting

Available to all students except those pursuing the Bachelor of Science in Accounting degree. Students must complete

ACCTNG 2400, Fundamentals of Financial Accounting

ACCTNG 2410, Managerial Accounting

plus any three upper division accounting electives

#### Minor in Finance

Available to all students except those pursuing the Bachelor of Science in Business Administration degree. Students must complete:

FINANCE 3500, Financial Management

plus any four upper division finance electives

#### Minor in Information Systems

Available to all students except those pursuing the Bachelor of Science in Information Systems degree.

Students must complete

One Required Course:

INF SYS 2800, Information Systems Concepts and Applications

Four of the Following Courses:

At least three of the courses must be 3800-level IS courses.

INFSYS 3807, Legacy Systems

INFSYS 3806, Managerial Applications of Object Oriented Programming I

INFSYS 3810, Systems Analysis

INFSYS 3815, Object Oriented Applications in Business

INFSYS 3816, Managerial Applications of Object Oriented Program II

INFSYS 3841, Enterprise Information Systems

INFSYS 3842, Management of Telecommunications

INFSYS 3843, Decision Support Systems  
INFSYS 3844, Developing Business Applications in .NET  
INFSYS 3845, Database Management Systems  
INFSYS 3846, e-Commerce  
INFSYS 3847, Web Design  
INFSYS 4850, Information Systems Design  
ACCTNG 3421, Accounting Information Systems  
FINANCE 3502, Computer Applications in Finance  
A pre-approved Computer Science Class  
INFSYS 3898, Business Administration Seminar-IS  
INFSYS 3899, Independent Study in IS  
(Seminars and Independent Studies are restricted to those offered by and approved by the Area faculty and approved by the Area Coordinator.)

#### **Minor in International Business**

Available to all students except those pursuing the Bachelor of Science in Business Administration degree with an emphasis in International Business. Students must complete any 5 courses in International Business.

#### **Minor in Logistics and Operations Management**

Available to all students except those pursuing the Bachelor of Science in Business Administration degree. Students must complete:

LOG OM 3320, Introduction to Operations Management plus any four upper division logistics/operations management electives, including no more than one programming course selected from:

INFSYS 3806, Managerial Applications of Object Oriented Programming I  
INFSYS 3844, Developing Business Applications in .NET

#### **Minor in Management**

Available to all students except those pursuing the Bachelor of Science in Business Administration degree. Students must complete:

MGMT 3600, Management and Organizational Behavior  
MGMT 3611, Advanced Management and Organizational Behavior  
plus any 3 upper division management and organizational behavior electives

#### **Minor in Marketing**

Available to all students except those pursuing the Bachelor of Science in Business Administration degree. Students must complete:

MKTG 3700, Basic Marketing  
plus any 4 additional upper division marketing electives

#### **Minor in Transportation Studies**

Available to all students. (For those pursuing the BSBA degree, this will result in an emphasis in marketing if the marketing capstone course, MKTG 4700, Marketing

Management, is taken in addition to the requirements listed below. Such individuals will have completed both LOG OM 3320, Introduction to Operations Management, and MKTG 3700, Basic Marketing.)  
Students must complete five courses to include:

MKTG 3770, Introduction to Transportation  
MKTG 3771, Traffic and Transportation Management  
Plus three additional courses selected from:

BUS AD 3090, Internship in Business Administration  
BUS AD 3099, Independent Study in Business Administration  
BUS AD 3198, Business Administration Seminar: Topics vary  
LOG OM 3320, Introduction to Operations Management  
MKTG 3700, Basic Marketing

\*No more than one approved independent study course may count towards the minor.

#### **Graduate Studies**

The College of Business Administration offers four graduate degrees: the Doctor of Philosophy in Business Administration (Ph.D.) the Master of Business Administration (MBA), the Master of Science in Information Systems (MS in IS), and the Master of Accounting (MAcc). All programs carry the prestigious accreditation of the AACSB-International.

#### **Admission Requirements**

The admissions decision is based on a combination of factors. Consideration is given to a candidate's academic record, scores on the Graduate Management Admissions Test (GMAT), work and leadership experience, a personal narrative on the application form, and recommendations.

As in most AACSB-accredited graduate business programs, the UMSL College of Business generally requires Graduate Management Admissions Test (GMAT) scores. Information on the GMAT exam can be obtained from the Office of Graduate Business Studies, or on the Internet at [www.mba.com](http://www.mba.com). The examination tests one's ability to read, understand, and to reason logically with both verbal and quantitative material. The test is not a measure of achievement or business knowledge. Under certain conditions, the applicant may petition for waiver of the GMAT requirement, based on possession of an advanced degree and/or the ability to supply acceptable scores from an equivalent test.

#### **Doctor of Philosophy in Business Administration (Ph.D.)**

The Ph.D. program includes emphases in Information Systems (IS) and Logistics & Supply Chain Management (LSCM). This is the only LSCM emphasis in a doctoral business program offered in Missouri and the only IS emphasis in a doctoral business program offered at a public

university in Missouri. Courses are taught by fulltime, nationally known scholars who have been recognized as one of the most academically prolific faculties in America. The Ph.D. program is designed to prepare scholars who will excel in the national and international marketplace, especially in academic and research organizations, but graduates may also find opportunities in the growing private sector demand for advanced IS and LSCM expertise.

#### **Master of Business Administration Program (MBA)**

The MBA is available in three formats: the evening MBA program, the Internet-enhanced, weekend based Professional MBA program and the International MBA program. All are fully accredited by AACSB International – The Association to Advance Collegiate Schools of Business, the premier accrediting body in collegiate business education. The MBA programs are designed to prepare students for administrative and professional positions. They also provide an appropriate foundation for students contemplating doctoral work and eventual careers in college teaching and research. The programs are designed for students who have bachelor's degrees from accredited institutions, including those with undergraduate backgrounds in the sciences, engineering, humanities, or arts, as well as business. Graduate Business program information is available online at <http://mba.umsl.edu>.

#### **The Evening MBA Program**

The MBA curriculum provides training in the fundamental areas of business administration. The core program is designed to generate a working knowledge of the concepts and interrelationships of four broad categories fundamental to management training:

- The external environment confronting business organizations and management's response to legal, economic, social, and political issues.
- The internal operation of various business organizations and management's role in channeling human behavior to satisfy both personal and organizational goals.
- Basic concepts, terminology, and interaction of the accounting, marketing, finance, information technology and operations management disciplines.
- Quantitative management decision-making models put to use in the context of current management information systems.

The total degree program is integrated by a course in strategy formulation and implementation in the student's last semester. There is no thesis requirement; however, students interested in undertaking an individual research project may earn elective credit by enrolling in a supervised independent study course.

#### **Degree Requirements**

Depending on the student's previous background, programs will range from 39 to 54 hours. Coursework must be completed within a six-year period. At least 30 hours of coursework must be taken while enrolled as an MBA candidate at UMSL.

#### **Learning Outcomes**

1. Develop the ability to write and deliver a professional presentation.
2. Develop the ability to form teams and work in teams.
3. Understand ethical considerations in all dimensions of business.
4. Be aware of international issues in business.
5. Have the ability to critically evaluate information
6. Be able to independently research a topic in business.
7. Develop skill in using technology to solve business problems.
8. Understand basic management principles and practices and how they affect the success of an organization.
9. Understand basic finance principles and practices and how they affect the success of an organization.
10. Understand basic accounting principles and practices and how they affect the success of an organization.
11. Understand basic operations and logistic management principles and practices and how they affect the success of an organization.
12. Understand basic marketing principles and practices and how they affect the success of an organization.
13. Understand basic information systems principles and practices and how they affect the success of an organization.
14. Develop skill to think strategically about the business.

Candidates must take at least one course at either the core level or from the business breadth requirements list in each of the following six areas: accounting, finance, management, marketing, information systems, and logistics and operations management. Also, no more than 15 credit hours may be taken in any one of the six areas.

Students are also required to have completed the equivalent of ECON 4105, Quantitative Methods and Modeling in Economics, Business, and the Social Sciences, by the end of their first 15 hours in the program.

#### **Required Courses**

The following courses or their equivalents are required of all degree candidates.

#### **General Requirements – 18 hours**

**ECON 4105**, Quantitative Methods and Modeling in Economics, Business, and the Social Sciences

**BUS AD 5000**, Economics for Managers

**BUS AD 5100**, Managerial Communication

**BUS AD 6990**, Strategy Formulation and Implementation

**LOG OM 5300**, Statistical Analysis for Management:

Decisions

**BUS AD 5900**, Law, Ethics, and Business



### Core Requirements – 18 hours

ACCTNG 5400, Financial and Managerial Accounting  
FINANCE 6500, Financial Management  
MGMT 5600, Organizational Behavior and Administrative Processes  
MKTG 5700, Contemporary Marketing Concepts  
INFSYS 5800, Management Information Systems  
LOG OM 5320, Production and Operations Management

### Business Breadth Requirements – 9 hours

A student must take a second-level course in three of the following areas:

**Accounting:** ACCTNG 5401, Financial Reporting and Analysis

**Finance:** Any approved graduate-level course beyond FINANCE 6500

**Management:** Any approved graduate-level course beyond MGMT 5600

**Marketing:** Any approved graduate-level course beyond MKTG 5700

**Information Systems:** Any approved graduate-level course beyond INFSYS 5800

**Logistics and Operations Management:** Any approved graduate-level course beyond LOG OM 5320

### Electives

The student must take a minimum of nine hours of elective courses. A maximum of six hours of electives may be taken at the undergraduate level. Graduate students may be required to complete additional work in these courses. Nine elective hours may be taken outside the College of Business Administration if the student has approval in advance from a graduate adviser for the specific courses desired.

### Emphasis Areas

MBA students may obtain emphasis areas in Accounting, Finance, Information Systems, Logistics and Supply Chain Management, Management, Marketing or Operations Management. In addition to the requirements articulated above, the requirements for each emphasis area are shown below.

#### Emphasis in Accounting

MBA students seeking an Emphasis in Accounting must complete a minimum of 12 hours of accounting electives. Of these electives, six hours must be numbered ACCTNG 5401 or above, and six hours must be numbered ACCTNG 4400 or above. ACCTNG 5400 does not count toward the Emphasis in Accounting. A maximum of 15 hours in any functional area will count toward degree requirements. Only courses that are substantially different from courses taken for credit in a student's undergraduate program will be acceptable. The total number of elective courses required will depend on the number of hours waived. Students must complete at least 39 credit hours to earn the MBA.

#### Emphasis in Finance

MBA students seeking an Emphasis in Finance must complete a minimum of 12 hours of Finance electives beyond FINANCE 6500. A maximum of 15 hours in any functional area will count toward the degree requirements. One Finance course may apply toward the Business Breadth requirement, and the remainder toward the Elective requirement. The total number of elective courses required will depend on the number of hours waived. Students must complete at least 39 credit hours to earn the MBA degree.

#### Emphasis in Information Systems

##### Required Course

INFSYS 5800, Management Information Systems

##### Four Courses from the following:

INFSYS 6805, Applications of Programming for Business Solutions

INFSYS 6835, IT-Enabled Business

INFSYS 6836, Telecommunications; Design & Mgmt

INFSYS 6837, IS/IT Architecture

INFSYS 6838, Business Processes: Design, Management, and Integration

INFSYS 6840, Information Systems Analysis

INFSYS 6845, Database Management Systems

INFSYS 6846, Management of Global Sourcing

INFSYS 6847, IS Financial and Project Management

INFSYS 6848, Knowledge Management & Business Intelligence

INFSYS 6850, Information Systems Design

INFSYS 6881, Management of Transnational IS

INFSYS 6891, Seminar in Management Information Systems

A maximum of 1 course outside IS (Courses outside the College of Business must be approved by the IS Area Coordinator)

#### Emphasis in Logistics and Supply Chain Management

MBA students seeking an Emphasis in Logistics & Supply Chain Management must complete 9 hours from approved courses in addition to LOG OM 5300 and LOG OM 5320. Up to 3 hours may be transferred from another AACSB-accredited graduate program at the discretion of the Area Coordinator of the LOM Area. A maximum of 15 hours in any functional area will count toward the degree requirements. The total number of elective hours required will depend on the number of hours waived. Students must complete at least 39 credit hours to earn the MBA degree.

#### Emphasis in Management

MBA students seeking an Emphasis in Management may choose one of the tracks specified below. Regardless of the track chosen, one must complete a minimum of 12 hours of Management electives beyond MGMT 5600. A maximum of 15 hours in any functional area will count toward the degree requirements. The total number of elective courses required will depend on the number of hours waived. Students must take at least 39 credit hours to earn the MBA degree.

**General Management Track**  
Any 4 MGMT courses.

**Human Resource Management Track**  
MGMT 5621, Managing Human Resources + 3 courses selected from MGMT 5622, 5624, 5625.

**Emphasis in Marketing**  
MBA students seeking an Emphasis in Marketing must complete a minimum of 12 hours of Marketing electives beyond MKTG 5700, including MKTG 5701. A maximum of 15 hours in any functional area will count toward the degree requirements. The total number of elective courses required will depend on the number of hours waived. Students must complete at least 39 credit hours to earn the MBA degree.

**Emphasis in Operations Management**  
MBA students seeking an Emphasis in Operations Management must complete 9 hours from approved courses in addition to LOG OM 5300 and LOG OM 5320. Up to 3 hours may be transferred from another AACSB – accredited graduate program at the discretion of the Area Coordinator. A maximum of 15 hours in any functional area will count toward the degree requirements. The total number of elective hours required will depend on the number of hours waived. Students must complete at least 39 credit hours to earn the MBA degree.

A student cannot receive an emphasis in both Operations Management and Logistics & Supply Chain Management for the same set of courses. An overlap of up to 3 credit hours out of the 9 hours required is allowed.

**Previous Education**  
Based on a formal review and evaluation by the Office of Graduate Studies in Business, students may be granted waivers of certain courses from the general and core requirements. Waivers depend on the applicability of prior coursework and the student's performance in these courses. Regardless of the number of courses waived, all students must take at least 39 hours to earn the degree.

**Professional MBA Program**  
A weekend-based Internet-enhanced version of the MBA program exists as an alternative to the traditional part-time evening program. This program is a 48-credit-hour program for professionals with busy work or travel schedules. Students meet on campus monthly, with the remainder of the interaction between instructor and students taking place online. Students proceed through the program as part of a cohort group and complete the requirements for the degree in two years.

The first 30 hours of the Internet-based program consist of the same core courses required in the evening program (except for the mathematics and economics requirements, which are treated as prerequisites and must be satisfied prior

to starting the program). The remaining 18 hours consist of the following courses:

ACCTNG 5401, Financial Reporting and Analysis  
FINANCE 6590, Seminar in Finance  
MGMT 5695, Seminar in Management  
MKTG 5795, Seminar in Marketing  
INFSYS 6891, Seminar in Management Information Systems  
LOG OM 6395, Seminar in Logistics and Operations Management

**International MBA Program**  
An International version of the MBA program also exists as an alternative to the evening MBA program. This program is a two-year, full-time program. Students take courses the first year outside the U.S. at a partner university and then take courses the second year on the University of Missouri – St. Louis campus.

**International MBA Program Degree Requirements:**  
In addition to the requirements of the evening MBA program, the International MBA program requires an internship (outside the U.S. for Americans and in the U.S. for all others). The program also requires a proficiency in at least one major commercial language in addition to English as a prerequisite. (Coursework is generally in English). All participants in the International MBA program must meet the same General and Core Requirements as those in the evening MBA program.

**Master of Science in Information Systems (MS in IS)**  
The Master of Science in IS program is designed to provide the technical and managerial knowledge to operate successfully in careers associated with the design, development and management of computer-based information, telecommunications, and Internet applications. The program accommodates students with undergraduate degrees specializing in IS, business, and computer science, as well as students with undergraduate degrees outside business.

**MS in IS Program Degree Requirements**  
The program may require as few as 30 hours for students with undergraduate business degrees from AACSB-accredited institutions. Because of the need to attain general business core competencies as a foundation of the MS in IS requirements, students with no academic business background will be required to take additional hours as outlined below.

**General Requirements**  
All students must meet course requirements in quantitative reasoning, general business and IS. Students must complete a minimum of 30 credit hours beyond the general business core. Of the 30 hours beyond the general business core, at least 24 hours must cover topics beyond INF SYS 5800 and INF SYS 6805. Students with a B.S.B.A. with an emphasis in IS or a B.S. in IS from an AACSB-accredited institution

may, at the student's discretion, substitute two electives for INF SYS 5800 and INF SYS 6805. Waivers may be granted for other courses with appropriate undergraduate course work.

### **Quantitative Reasoning Requirement**

Students are required to have completed by the end of their first semester in the program the equivalent of ECON 4150, Quantitative Methods in Modeling in Economics, Business and the Social Sciences with a grade of C or better. Students are also required to complete the equivalent of LOG OM 5300 Statistical Analysis for Management Decisions with a grade of C or better. These courses do not count towards the graduate degree, but waivers may be granted with appropriate undergraduate course work.

### **General Business Core**

Students must have a B.S. in IS, or a B.S.B.A. with an emphasis in MIS that requires a managerial communication course, and coursework equivalent to at least five of the following courses:

**BUS AD 5900**, Law, Ethics, and Business  
**ACCTNG 5400**, Financial and Managerial Accounting  
**FINANCE 6500**, Financial Management  
**MGMT 5600**, Organizational Behavior and Administrative Processes  
**MKTG 5700**, Contemporary Marketing Concepts  
**LOG OM 5320**, Production and Operations Management  
**BUS AD 6990**, Strategy Formulation and Implementation

Students who have not met this prerequisite must complete BUS AD 5100 Managerial Communication and course work from at least five of the courses listed above.

### **Program Requirements**

#### **A. Basic IS courses 15 credit hours**

**INFSYS 5800**, Management Information Systems  
**INFSYS 6805**, Applications of Programming for Business Solutions  
**INFSYS 6840**, Information Systems Analysis  
**INFSYS 6845**, Database Management Systems  
**INFSYS 6850**, Information Systems Design

#### **B. IS Electives 15 credit hours**

Students choose 5 *elective courses* from the following:  
**INFSYS 6808**, Internet Programming for Business  
**INFSYS 6835**, IT-Enabled Business  
**INFSYS 6836**, Telecommunications: Design & Mgmt  
**INFSYS 6837**, Information Systems Architecture  
**INFSYS 6838**, Business Processes: Design, Management, and Integration  
**INFSYS 6846**, Management of Global Sourcing  
**INFSYS 6847**, Financial & Project Management  
**INFSYS 6848**, Knowledge Management & Business Intelligence  
**INFSYS 6881**, Management of Transnational Information Systems

### **INFSYS 6891**, Seminar in Management Information Systems

A maximum of 2 courses outside IS. Courses outside the College of Business must be approved by the IS Area Coordinator.

### **Master of Accounting Program (MAcc)**

The MAcc program prepares students to enter the accounting profession or to further existing accounting careers. It is designed to accommodate both students with undergraduate accounting majors and students with other undergraduate backgrounds. It may require as few as 30 credit hours for students with undergraduate accounting degrees.

Because of the need to attain general business and professional accounting core competencies as a foundation for the MAcc requirements, students with no academic business or accounting background will be required to take additional credit hours as outlined below.

### **General Requirements**

All students must meet course requirements in mathematics, general business, and accounting. Students must complete a minimum of 30 credit hours beyond the general business core and the professional accounting core. At least 15 credit hours in accounting must be completed, including at least 12 credit hours at the graduate level. At least 9 credit hours of the student's 30 credit hour program must be in graduate level non-accounting courses. Of the 30 credit hours beyond the general business and professional accounting core, 21 credit hours must be earned in courses at the graduate level.

### **Mathematics Background Requirement**

Students are required to have completed by the end of their first semester in the program the equivalent of ECON 4150, Quantitative Methods and Modeling in Economics, Business, and the Social Sciences, with a grade of C or better. Graduate credit is not given for this course but it may be waived with appropriate undergraduate coursework.

### **General Business Core**

Students must have credit for the equivalent of one 3-hour course in each of the following subject areas: macroeconomics, microeconomics, financial accounting, managerial accounting, marketing, financial management, organizational behavior, and business strategy. These requirements may be met with graduate-level course work or may be waived with appropriate courses taken as an undergraduate.

### **Professional Accounting Core**

Students must have credit for the equivalent of each of the following three-credit-hour courses. Some of these courses may be taken concurrently with MAcc degree requirements (listed below) or may be waived with appropriate courses taken as an undergraduate.

**ACCTNG 5404**, Professional Accountancy I\*

**ACCTNG 5405**, Professional Accountancy II\*  
**ACCTNG 5421**, Information Systems in Accounting\*  
**ACCTNG 5411**, Concepts in Management Accounting\*  
**ACCTNG 5447**, Taxation of Individuals and Businesses\*

**MAcc Degree Requirements** (minimum: 30 credit hours)  
Accounting Courses (minimum: 15 credit hours, 12 credits at the graduate level)

**ACCTNG 4401**, Financial Accounting & Reporting III\*  
**ACCTNG 4402**, Financial Accounting & Reporting IV\*  
**ACCTNG 4435**, Auditing\*

Research course-At least **one** of the following courses must be completed:

**ACCTNG 5402**, Professional Accounting Research Seminar- At least **one** of the following courses must be completed:

**ACCTNG 5403**, Seminar in Financial Accounting  
**ACCTNG 5435**, Seminar in Auditing

**Accounting Electives** to meet 15 credit-hour and graduate level requirements

**Non-Accounting Courses** (minimum: 9 credit hours at the graduate level)

**BUS AD 5100**, Managerial Communication\*  
**BUS AD 5900**, Law, Ethics, and Business\*  
**INFSYS 5800**, Management Information Systems\*  
**LOG OM 5300**, Statistical Analysis for Management Decisions\*  
**LOG OM 5320**, Production and Operations Management\*

Electives may be necessary to meet 9-credit-hour graduate level non-accounting requirements or minimum 30-credit-hour requirement (\*May be waived with appropriate undergraduate courses).

### **Ph.D. in Business Administration**

#### **Admissions Requirements**

Admission decisions are made on the basis of past academic record, intellectual ability, GMAT or GRE score, and career commitment. Applications are accepted from students who have baccalaureate or graduate degrees. Past graduate work may be credited toward degree requirements where appropriate. Applicants must submit:

Official academic transcripts.

Official GMAT or GRE results in fields approved by the College of Business Administration.

Three letters of recommendation (at least two from individuals with earned doctorates).

A statement of objectives for the course of study.

#### **Graduate Assistantships**

Stipends for research and teaching assistantships (20 hours per week) are awarded on a competitive basis. Educational fees are waived for graduate assistants.

### **Degree Requirements**

The Ph.D. in the College of Business Administration requires a minimum of 69 course credit hours and a minimum of 6 dissertation credit hours beyond the baccalaureate degree. To ensure sufficient background for doctoral-level courses, students must demonstrate appropriate competence in quantitative reasoning, which is evidenced through completion of ECON 4105 and BUS AD 5000 or their equivalent. Students must also demonstrate appropriate competence in managerial communication, which is evident through completion of BUS AD 5100 or equivalent to be determined by the Ph.D. Coordinator.

### **Course Requirements**

The Ph.D. in Business Administration has a common set of requirements in three areas: Business & Research Foundation (Section I), Supporting Field (Section II), and Other Requirements (Section IV). Requirements specific to the area of emphasis are in Section III.

#### **I. Business & Research Foundation Requirement: 27 credit hours (9 courses)**

Students are required to take:

**INFSYS 5800**, Management Information Systems  
**LOG OM 5300**, Statistical Analysis for Management Decisions  
**BUS AD 5900**, Law, Ethics, and Business  
**ACCTNG 5400**, Financial and Managerial Accounting  
**FINANCE 6500**, Financial Management  
**MGMT 5600**, Organizational Behavior  
**MKTG 5700**, Contemporary Marketing Concepts  
**LOG OM 5320**, Production and Operations Management

The first eight courses 6800, 5300, 5900, 5400, 6500, 5600, 5700, 5320 will normally be waived if students had the courses as part of an UMSL MBA, MS in IS, or MAcc degree, or had equivalent graduate course work at an institution approved by the Graduate Business Programs Office and the Ph.D. Coordinator.

#### **II. Supporting Field Requirement: (9 credit hours)**

Students must take 9 credit hours of graduate-level courses beyond foundation course work in a supporting field approved by the Ph.D. Coordinator. Supporting fields may include courses within or outside the College of Business Administration and are designed in consultation with the Ph.D. Coordinator.

#### **III. Emphasis Area Requirements:**

Students must complete the requirements for one of the emphasis areas.

#### **Information Systems Emphasis**

The Information Systems emphasis requirement includes 36 credit hours.

Students are required to take the following courses:

**INFSYS 6805**, Applications to Programming for Business Solutions

**INFSYS 6836**, Telecommunications: Design and Management

**INFSYS 6840**, Information Systems Analysis

**INFSYS 6845**, Database Management System

**BUS AD 7021**, Qualitative Methods and Philosophical Foundations of Business Administration Research

**INFSYS 7890**, IS Research Seminar

**INFSYS 7891**, Quantitative Research Methods in IS

**INFSYS 7892**, Doctoral Seminar in current Information Systems Topics

**INFSYS 7893**, Special Topics in IS

**INFSYS 7894**, Theoretical Foundations of Information Systems Research

#### **Logistics & Supply Chain Management (LSCM) Emphasis**

The Logistics & Supply Chain Management emphasis requirement includes 33 credit hours.

Students are required to take the following eight courses:

**MKTG 5770**, Supply Chain Management

**LOG OM 6330**, Business Logistics Systems

**LOG OM 6331**, Logistics and Supply Chain Operations Modeling

**LOG OM 6332**, Logistics and Supply Chain Strategic Modeling

**LOG OM 6350**, Management Science Methods

Students are required to take nine credit hours (three courses) (not included elsewhere) from the list of approved elective courses for the LSCM emphasis.

#### **IV. Other Requirements:**

Upon completion of coursework, students are advanced to candidacy by successfully completing a comprehensive examination in their area of emphasis and a supporting field examination in their chosen area.

Students admitted to the program with a relevant Masters degree should pass the comprehensive examination and the supporting field examination within three years of admission to the Ph.D. program. Students admitted to the program with an undergraduate business degree should pass the comprehensive examination and the supporting field examination within four years of admission to the Ph.D. program. Students admitted to the program with an undergraduate degree outside of business should pass the comprehensive examination and the supporting field examination within five years of admission to the Ph.D. program. In these cases, prior coursework will be evaluated for equivalency to Section I course requirements. Exceptions may be made, contingent on approval by the Ph.D. Coordinator.

Students will be evaluated annually for satisfactory progress. Students deemed not to be making adequate progress are subject to the policies of the College of Business Administration regarding continuation of their assistantship. Students deemed not to be making adequate progress are subject to the policies of the Graduate School and the

College of Business Administration regarding probation and dismissal from the program.

Students are required to take a minimum of 6 dissertation credit hours and to defend a dissertation proposal within one year of advancement to candidacy.

Students are required to present one paper at a regional, national, or international conference.

Students are required to submit one paper, approved by his/her dissertation advisor, to a refereed journal.

At least two semesters of supervised teaching in the College of Business Administration are required of all doctoral students.

Students are required to demonstrate competency in teaching during the first year in which they teach in the College of Business Administration. This requirement may be met by successfully completing one or more courses.

Students must satisfy all Graduate School requirements.

The degree is awarded upon successful completion and defense of the Ph.D. dissertation. The dissertation must be defended within three years of approval of a Ph.D. dissertation proposal.

#### **Graduate Certificate Programs in Business Studies**

The College of Business Administration offers four 18-hour Graduate Certificates. To be admitted to a graduate certificate program, students must meet the same requirements as those needed for a graduate degree program in business (see Admission Requirements in the Graduate Studies in Business Administration section of this Bulletin). Certificate programs allow qualified graduate students to pursue an intensive course of study in a specialized business topic without requiring completion of a full graduate business degree program. Certificate programs provide students with the opportunity to obtain the advanced knowledge available through a graduate course of study in relatively brief period.

In order to successfully complete a certificate program, students must earn a 3.0 cumulative GPA in certificate classes. Unless otherwise specified, the coursework must be completed within six years. Students must also comply with all requirements related to matters such as prerequisites, academic probation, and other graduate business program policies.

#### **Graduate Certificate Program in Business Administration**

This is an 18-hour program designed to accommodate individuals with an undergraduate/graduate degree in a non-business field seeking core business knowledge. The program emphasizes coursework designed to cover the major disciplines within the field of business. Upon

completion, the student will have knowledge of common business theories, practices, and procedures.

To earn the certificate, students must complete six courses as prescribed below. All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate Area Coordinator and the Director of Graduate Studies in Business. In all cases, 18 hours are needed to complete the graduate certificate.

**Program Requirements: (5 courses)**

**ACCTNG 5400**, Financial and Managerial Accounting  
**MGMT 5600**, Organizational Behavior and Administrative Processes  
**MKTG 5700**, Contemporary Marketing Concepts  
**INFSYS 5800**, Management Information Systems

One of the following:

**FINANCE 6500**, Financial Management  
**LOG OM 5320**, Production and Operations Management

**Elective Course (1 course):**

**BUS AD 5100**, Managerial Communication  
**BUS AD 5900**, Law, Ethics and Business  
**\*FINANCE 6500**, Financial Management  
**\*LOG OM 5230**, Production and Operations Management

\*Cannot be used as an elective if used as a program requirement.

**Graduate Certificate in Human Resources Management**

The Graduate Certificate in Human Resources Management is an 18-hour course of study designed to focus on the multidimensional aspects of personnel operations within business organizations. The course of study emphasizes both formal and informal aspects of human resources management.

**Requirements**

Students must complete the following six courses or appropriate substitutes if course waivers are appropriate:  
**MGMT 5600**, Organizational Behavior and Administrative Processes  
**MGMT 5621**, Managing Human Resources  
**MGMT 5222**, Union-Management Relations and Collective Bargaining  
**MGMT 5625**, Selected Topics in Human Resource Management  
**LOG OM 5300**, Statistical Analysis for Management Decisions

MGMT 5600, MGMT 5621 and LOG OM 5300 may be waived with equivalent undergraduate courses. If a student is able to waive any or all of these three courses, substitute courses (approved by both the Coordinator of the Management area and the Director of Graduate Studies in Business) will be provided. Substitute courses may include MGMT 5611, Advanced Organizational Behavior and Administrative Processes, or a course from outside the

College of Business Administration. In all cases, 18 hours are needed to complete the Graduate Certificate in Human Resources Management.

**Graduate Certificate in Logistics and Supply Chain Management**

The Graduate Certificate in Logistics and Supply Chain Management is an 18-hour program designed to provide a focused, intensive study of important issues within logistics and, more broadly, in supply chain management. Three required courses provide thorough background in operations, logistics and supply chain management. Three elective courses allow specialization in areas such as logistics and supply chain software, international logistics, operations research, e-commerce, and quality. Students must complete the following six courses or approved substitutes if course waivers are appropriate:

**Required Courses:**

**LOG OM 5320**, Production and Operations Management  
**LOG OM 6330**, Business Logistics Systems  
**MKTG 5770**, Supply Chain Management

**Nine additional hours (generally 3 courses) from:**

**LOG OM 5326**, Quality Management  
**LOG OM 5312**, Advanced Statistical Methods for Management Decisions  
**LOG OM 5354**, Simulation for Managerial Decision Making  
**LOG OM 5322**, Lean Production  
**LOG OM 5381**, International Logistics and Operations Management  
**LOG OM 6331**, Logistics and Supply Chain Operational Modeling  
**LOG OM 6332**, Logistics and Supply Chain Strategic Modeling  
**LOG OM 6350**, Management Science Methods  
**INFSYS 6835**, IT-Enabled Business  
**INFSYS 6833**, Decision Support System  
**BUS AD 5198**, Seminar in Business Administration\*  
**BUS AD 5299**, Individual Research\*  
\*Subject to approval of the Area Coordinator of the LOM Area.

Substitute courses must be approved by the Coordinator of the LOM Area and the Director of Graduate Studies in Business. In all cases, 18 hours are needed to complete the Graduate Certificate in Logistics and Supply Chain Management.

**Graduate Certificate in Marketing Management**

The Graduate Certificate in Marketing Management is an 18-hour program designed to provide a focused intensive study of the marketing management activity within organizations. This program is designed to serve a broad group of marketing managers, including those with an interest in sales, brand management, promotion, and consumer behavior.