

U M - S t . L o u i s
BULLETIN



University of Missouri-St. Louis

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Instructional Areas

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

accounting
 adult education
 Africana Studies
 American studies
 anthropology
 applied mathematics
 archaeology
 art
 art history
 astrophysics
 astronomy
 athletic coaching
 biochemistry
 biology
 biotechnology
 black studies
 business administration
 chemistry
 Chinese
 classical studies
 clinical laboratory science
 communication
 communication theory and rhetoric
 comparative politics
 computer science
 conservation biology
 counselor education
 creative writing
 criminology and criminal justice
 cytotechnology
 early childhood education
 East Asian studies
 economics
 educational administration
 educational foundations
 educational psychology
 educational research and evaluation methods
 educational technology
 elementary education
 employee training and development
 engineering
 English
 English as a second language
 European studies
 fine arts
 finance
 foreign languages
 French
 German
 gerontology
 graphic design
 Greek
 Hebrew
 history
 interdisciplinary studies
 International business
 international relations
 Italian

Japanese
 jazz studies
 Korean
 Latin American Studies
 Latin
 legal studies
 logistics and operations management
 management and organizational behavior
 management information systems
 management science
 marketing
 mass communication
 mathematics
 medical physics
 middle school
 music
 music education
 museum studies
 non-profit organization management and leadership
 nursing
 optometry
 painting
 philosophy
 photographic studies
 physical education
 physics
 physiological optics
 political science
 pre-architecture
 pre-engineering
 pre-journalism
 pre-law
 pre-medicine
 pre-optometry
 pre-pharmacy
 printmaking
 probability and statistics
 psychology
 public administration
 public affairs journalism
 public law
 radio and television
 religions
 Reserve Officer Training Corps
 secondary education
 social work
 sociology
 Spanish
 special education
 statistics
 studio art
 trauma studies
 tropical ecology
 urban politics
 urban studies
 women's and gender studies
 writing

Preface

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

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

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

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

For the benefit of prospective students, academic departments generally maintain current employment information including average starting salary, forecast of job opportunities, number of students being graduated, and number employed. Students may contact their major department for the latest information available.

While students should study current employment data, these points should also be considered:

- (1) Employment conditions are subject to sudden change and may change considerably over a four-year period;
- (2) A student who excels is most likely to find employment;
- (3) A degree from a quality institution generally provides a competitive edge in the job market;
- (4) A degree offers more than a job opportunity.

Information regarding the provision of auxiliary aids and services to qualified students with disabilities can be found in Admissions and Academic Policies of the University of Missouri-St. Louis *Bulletin*. Students considering such assistance should contact the Administrator for Special Student Programs at 516-5211 voice or 516-5212 TT for further details.

Address inquiries regarding admission to all divisions of the University of Missouri-St. Louis to the Director of Admissions, University of Missouri-St. Louis, 8001 Natural Bridge Road, St. Louis, Missouri 63121-4499.

For information concerning the University of Missouri-Columbia, the University of Missouri-Rolla, or the University of Missouri-Kansas City, write directly to the Director of Admissions at the campus concerned.

Course Numbering

Each course bears a distinguishing number which identifies it within the department or academic unit and indicates, broadly, its rank. The numbering system is as follows:

Course Descriptions and Guide to Course Lists

1 to 99, primarily for freshmen and sophomores.

100 to 199, primarily for upperclassmen, no graduate credit.

200 to 299, for undergraduates and appropriate professional and graduate students, except those whose graduate majors are in the department in which the course is given.

300 to 399, for undergraduate, appropriate professional, and graduate students without restriction as to students' graduate majors.

400 to 499, primarily for graduate and appropriate professional students in special programs; upper-class students are admitted to courses in this series only with the approval of the graduate dean.

500 to 599, for professional optometry students. Other students are admitted to courses in this series only with the approval of the Optometry Dean. In addition, these numbers are used for courses offered in the cooperative MSN program between UM-St. Louis and UM-Kansas City.

General Education Requirement Courses

Courses which fulfill the University's general education requirements, as outlined in the Academic Policy section of this *Bulletin*, are listed at the beginning of each departmental course section.

Each list of course numbers also is identified by one of the following breadth of study areas:

[H] Humanities requirement

[SM] Natural sciences and mathematics requirement

[SS] Social sciences requirement

Preface

Eye Protection Law

It is now a law in the state of Missouri that every student, teacher, and visitor must wear approved eye protection devices when participating in or observing certain university courses. Definitely included in this act, which is posted along with University policy in selected buildings on this campus, are courses requiring chemical, physical, combined chemical-physical laboratories and shops, as well as certain vocational, technical, and industrial arts courses. Consult your instructors for exact requirements. Approved safety glasses and goggles must meet ANSI Standard Z87.1-1968 and are available from the UM-St. Louis Bookstore.

University Policy on Equal Opportunity

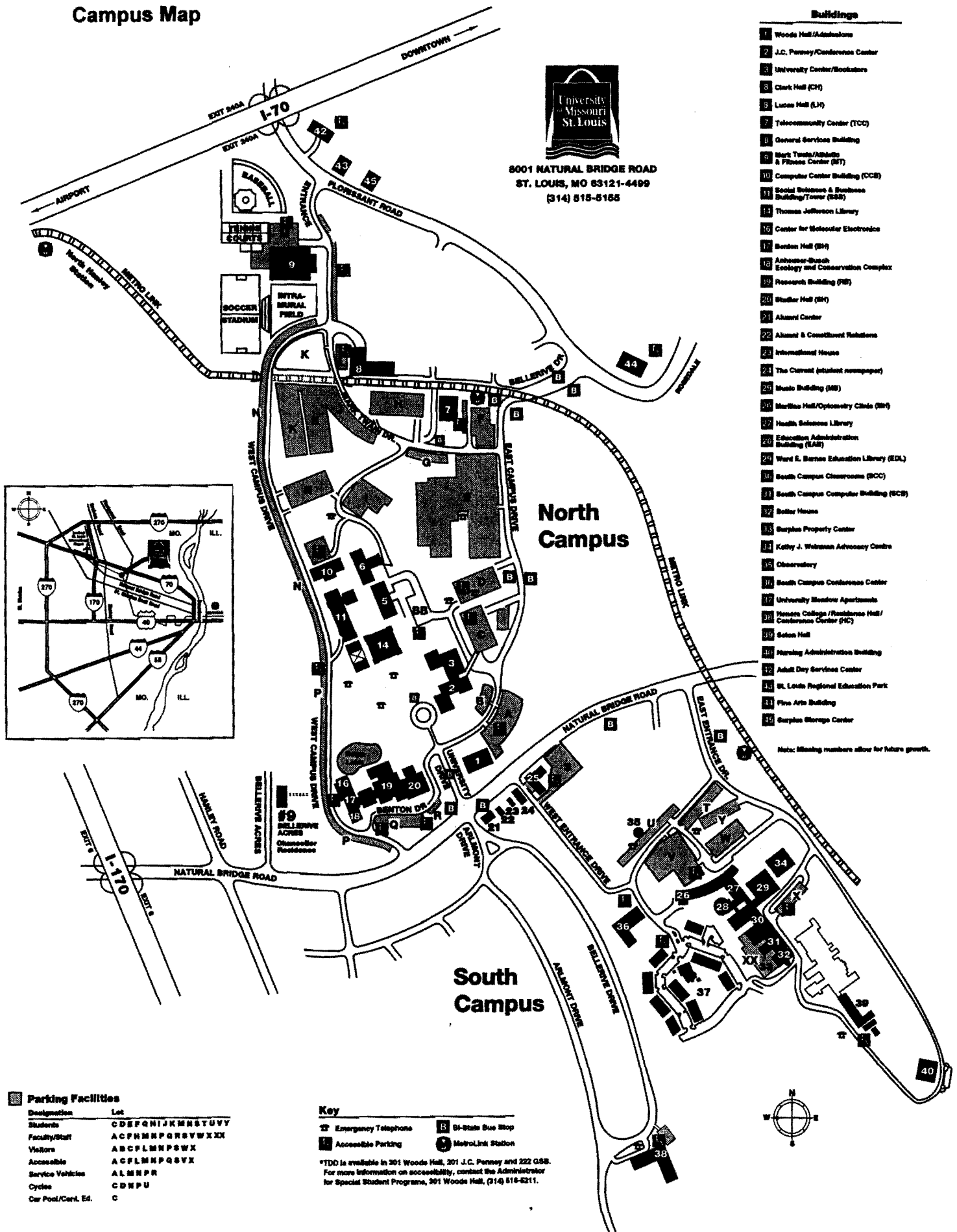
The Curators of the University of Missouri do hereby reaffirm and state the policy of the University of Missouri on Equal Employment/Educational Opportunity. Equal Opportunity is and shall be provided for all employees and applicants for employment on the basis of their demonstrated ability and competence without discrimination on the basis of their race, color, religion, sex, national origin, age or disability. Equal opportunity is and shall be also provided for all students and applicants for Admission in compliance with existing legislation. The President of the University shall establish affirmative action procedures to implement this policy.

Inquiries regarding compliance with these regulations may be directed to the: Office of Equal Opportunity/Affirmative Action, the University of Missouri-St. Louis, St. Louis, Missouri 63121-4499. (314) 516-5695.

Campus Map



8001 NATURAL BRIDGE ROAD
ST. LOUIS, MO 63121-4499
(314) 515-5155



Buildings

- 1 Woods Hall/Admissions
- 2 J.C. Penney/Conferences Center
- 3 University Center/Bookstore
- 4 Clark Hall (CH)
- 5 Lucas Hall (LH)
- 6 Telecommunity Center (TCC)
- 7 General Services Building
- 8 Mark Tassin/Athletic & Fitness Center (MT)
- 9 Computer Center Building (CCB)
- 10 Social Sciences & Business Building/Tower (SSB)
- 11 Thomas Jefferson Library
- 12 Center for Molecular Electronics
- 13 Benton Hall (BH)
- 14 Ambrose-Quash Ecology and Conservation Complex
- 15 Research Building (RB)
- 16 Student Hall (SH)
- 17 Alumni Center
- 18 Alumni & Constituent Relations
- 19 International House
- 20 The Current (student newspaper)
- 21 Music Building (MB)
- 22 Marilee Hall/Optometry Clinic (MH)
- 23 Health Sciences Library
- 24 Education Administration Building (EAB)
- 25 Ward E. Barrow Education Library (EDL)
- 26 South Campus Classroom (SCC)
- 27 South Campus Computer Building (SCCB)
- 28 Boiler House
- 29 Surplus Property Center
- 30 Kathy J. Whisman Advocacy Centre
- 31 Observatory
- 32 South Campus Conferences Center
- 33 University Student Apartments
- 34 Florence College /Florence Hall/Conferences Center (FC)
- 35 Selous Hall
- 36 Nursing Administration Building
- 37 Adult Day Services Center
- 38 St. Louis Regional Education Park
- 39 Fine Arts Building
- 40 Surplus Storage Center

Note: Missing numbers allow for future growth.

Parking Facilities

| Designation | Let |
|--------------------|------------------|
| Students | CDEFQHIJKMNSTUVY |
| Faculty/Staff | ACFNMPQRSVWXX |
| Visitors | ABCFMNPQSWX |
| Accessible | ACFLMNPQSWX |
| Service Vehicles | ALMNP |
| Cycles | CDWPU |
| Car Pool/Conc. Ed. | C |

Key

| | |
|-----------------------|---------------------|
| ☎ Emergency Telephone | Ⓡ Bi-State Bus Stop |
| Ⓜ Accessible Parking | Ⓜ MetroLink Station |

*TDD is available in 301 Woods Hall, 301 J.C. Penney and 222 GSB. For more information on accessibility, contact the Administrator for Special Student Programs, 301 Woods Hall, (314) 515-5211.



University Programs and Offices**Academic Affairs, Vice Chancellor**

401 Woods, 516-5371

Administrative Services, Vice Chancellor

243 General Services Bldg., 516-6100

Admissions

101 Woods, 516-5451

Alumni Relations

421 Woods, 516-5776

Alumni Center

7956 Natural Bridge, 516-5722

Anthropology Department

507 Clark, 516-6020

Art and Art History Department

590 Lucas, 516-5975

Arts and Sciences, College of

305 Lucas, 516-5501

Academic Advising

303 Lucas, 516-5300

Athletics Office

225 Mark Twain, 516-5641

Behavioral Studies Department

469 Marillac, 516-5782

Biology Department

223 Research Bldg., 516-6200

Bookstore

50 University Center, 516-5763

Bridge Program

201 WEB Education Library, 516-5196

Business Administration, School of

487 SSB Bldg., 516-5881

Cable TV Studio

116 Lucas, 516-6180

Cafeteria, "Underground"

University Center

Career Services

308 Woods, 516-5111

Cashier's Office

204 Woods, 516-5151

Center for Academic Development (CAD)

507 Tower, 516-5194

Center for Business and Industrial Studies

461 SSB Bldg., 516-5857

Center for Cornea and Contact Lens Research

441 Marillac, 516-6259

Center for Economic Education

306 Tower, 516-5248

Center for Humanities

406 Lucas, 516-5699

Center for International Studies

366 SSB Bldg., 516-5753

Center for Metropolitan Studies

362 SSB Bldg., 516-5273

Center for Molecular Electronics

3115-I Benton, 516-5340

Center for Excellence in Urban Education

359 Marillac Hall, 516-5862

Center for Neurodynamics

333 Benton, 516-6150

Center for Science and Technology

315 Benton, 516-5349

Chancellor's Office

401 Woods, 516-5252

Chemistry Department

315 Benton, 516-5311

Child Development Center

130 South Campus Classroom Bldg., 516-5658

Communication Department

590 Lucas, 516-5485

Computing, Office of

103 SSB Bldg., 516-6000

Continuing Education & Outreach, Office of, 201

J.C. Penney; Credit Courses, 516-5655;

Noncredit Courses, 516-5961

Counseling Services

427 SSB Bldg., 516-5711

Criminology and Criminal Justice Department

598 Lucas, 516-5031

Development Office

421 Woods, 516-5664

Disabled, Students

301 Woods, 516-5211

Dispute Resolution Program

362 SSB Bldg., 516-6040

Economics Department

347 SSB Bldg., 516-5351

Education, School of

201 Education Administration Bldg., 516-5109;

Office of Teacher Education,

155 Marillac, 516-5937;

Graduate Studies in Education,

201 WEB Library, 516-5483

Educational Studies Department

269 Marillac, 516-5944

Adult Day Services Center

8351 S. Florissant, 524-0155

Elementary, Early Childhood, and Physical**Education Department**

369 Marillac, 516-5791

English Department

484 Lucas, 516-5541

Engineering

228 Benton, 516-6800

Evening College

324 Lucas, 516-5161

Facilities Management

234 General Services Bldg., 516-6300

Financial Aid

209 Woods, 516-5526

Fine Arts

204 Fine Arts, 516-6967

Foreign Languages and Literatures Department

554 Clark, 516-6240

Gallery 210

218 Lucas, 516-5976

Gerontology

406 SSB Bldg., 516-5280

Graduate School

341 Woods, 516-5900

Graphics

252 General Services, 516-5167

Health Center

127 Woods, 516-5671

History Department

484 Lucas, 516-5681

Horizons

427 SSB, 516-5730

University Programs and Offices**Human Resources**

211 General Services Bldg., 516-5804

Instructional Technology Center

304 SSB Bldg., 516-6171

KWMU 90.7 FM Radio

105 Lucas, 516-5968

Libraries**Thomas Jefferson**, 516-5050;**Ward E. Barnes Education Library**, South Campus Complex, 516-5571;**Health Sciences Library**, South Campus Complex, 516-5110**Mathematics and Computer Science Department**

500 Clark, 516-5741

Mathematics and Science, Education Center

246 Benton, 516-5650

Multicultural Relations/Academic Affairs

110 Clark, 516-6807

Music Department

211 Music Bldg., 516-5980

Nursing, Barnes College of

218 Administration Building-South Campus, 516-6066

Office of Equal Opportunity/Affirmative Action

414 Woods, 516-5689

Optometry, School of

331 Marillac, 516-5606

Academic Advising,

343 Marillac, 516-5607

Admissions,

344 Marillac, 516-6263

Optometry, Clinic

152 Marillac, 516-5131

Payroll

211 General Services, 516-5237

Philosophy Department

590 Lucas, 516-5631

Physical Education Program

225 Mark Twain, 516-5226

Physics and Astronomy, Department

517 Benton, 516-5931

Pierre Laclède Honors College

516-6870

Police

44 Telecommunity Center, 516-5155

Political Science Department

347 SSB, 516-5521

Pre-Employment Training Program

313 Marillac, 516-5746

Printing Services

261 General Services Bldg., 516-5233

Psychology Department

325 Stadler, 516-5391

Public Policy Administration

406 Tower, 516-5145

Public Policy Research Centers

362 SSB Bldg., 516-5273;

The James T. Bush Sr., Center; Metropolitan Studies; Public Policy, Extension/Survey and Applied Research**Purchasing**

201 General Services Bldg., 516-5366

Records and Transcripts

232 Woods, 516-5676

Registrar's Office

232 Woods, 516-5545

Registration

232 Woods, 516-5545

Research, Office of

338 Woods, 516-5897

Residential Life

Seton Center, 516-6877

ROTC

Washington University, 935-5546

Safety & Risk Management

265 General Services Bldg., 516-6363

Social Work Department

590 Lucas, 516-6385

Sociology Department

347 SSB, 516-6364

Spirit

440 Woods, 516-5663

Sports Information

225 Mark Twain, 516-5660

Student Affairs, Vice Chancellor

301 Woods, 516-5211

Student Employment Program

346 Woods, 516-5317

Telecommunity Center

1 Mark Twain Drive, 679-1400

Tutorial Services

507 Tower, 516-5194

UM-Rolla Engineering Education Center

34 Telecommunity Center, 516-5431

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

228 Benton, 516-6800

University Center

267 University Center, 516-5291

University Communications

421 Woods, 516-5827

University Meadows

516-7500

University Relations

426 Woods, 516-5778

Urban Information Center

442 CCB Bldg., 516-6000

Veteran Affairs, Office of

232 Woods, 516-5546

Video Instructional Program

115 Lucas 516-5370

Women's Center

211 Clark, 516-5380

Women's and Gender Studies

548 Lucas, 516-5581

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University of Missouri

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Terms Expire January 1, 2003

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Everette Ellis Nance, Evening College
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Pierre LaClede Honors College

Robert Bliss, Ph.D., Dean

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 Bob Roeseler, Director, Institutional Safety
 Gloria L. Schultz, M.Ed., Director, Auxiliary and Management Services; Manager, Bookstore
 Michael Sims, Director, Physical Plant
 James L. Hickerson, Ph.D., Coordinator for Environmental Health and Safety

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 Gloria J. Leonard, M.Ed., Director, Business Services
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Communications
Mark O'Reilly, Director, Graphics and Printing
Phillury Platte, Associate Director, Development
Robyn Wahby, Manager, Alumni Relations
Lucinda R. Vantine, B.A., Manager, Special Events
Maureen Zegel, B.A., Manager, Media Relations

Academic Calendar**1998 Fall Semester****August**

25 Monday, Classes begin: 8:00 a.m.

September

5 Saturday, Labor Day holiday begins: 3:00 p.m.

8 Tuesday, classes resume: 8:00 a.m.

November

24 Tuesday, Thanksgiving holiday begins: 11:00 p.m.

30 Monday, classes resume 8:00 a.m.

December

9 Wednesday, classes end 11:00 p.m.

10,11 Thursday, Friday, intensive study days*

14 Monday, final examinations begin

22 Tuesday, first semester closes end of day

1999 Winter Semester**January**

10 Sunday, mid-year commencement

11 Monday, Classes begin: 8:00 a.m.

18 Monday, Dr. Martin Luther King holiday

March

20 Saturday, Spring recess begins: 3:00 p.m.

29 Monday, classes resume: 8:00 a.m.

May

3 Monday, classes end: 11:00 p.m.

4,5 Tuesday, Wednesday, Intensive study days*

6, Thursday, final examinations begin

13 Thursday, second semester closes end of day

15 Saturday, annual commencement

*intensive study days — no classes held, no exams scheduled

1999 Four-Week May Intersession**May**

17 Monday, classes begin: 8:00 a.m.

31 Monday, Memorial Day holiday

June

11 Friday, session closes end of day

1999 Eight-Week Summer Session**June**

14 Monday, classes begin: 8:00 a.m.

July

5 Monday, Independence Day holiday

August

4,5 Wednesday, Thursday, final examinations

5 Thursday, session closes end of day

8 Sunday, summer commencement

Introduction to UM-St. Louis

The University of Missouri-St. Louis is one of four campuses that constitute the University of Missouri, the ninth largest university in the United States. Founded in 1839 upon the ideals of Thomas Jefferson, the University of Missouri became a land-grant institution following passage of the Morrill Act by Congress in 1862.

The University remained a single-campus institution until 1870 when the Rolla campus was opened. Two campuses were added in 1963. The private University of Kansas City became UM's Kansas City campus, and an entirely new campus was started in St. Louis.

In the 1960s a movement began across the country toward the creation of public universities located within metropolitan centers. That movement marked the most significant change in higher education in the twentieth century, and the University of Missouri-St. Louis is a product of that educational development.

UM is governed by a nine-member Board of Curators appointed by the governor and confirmed by the state Senate. The Curators name the president of the University. Each campus is supervised by a chancellor.

UM-St. Louis, the fourth campus of the University of Missouri, was established in 1963. The notion of a major public institution serving the St. Louis area evolved from a dream to a solid reality, and today exceeds the expectations of those who created it.

Since the doors of the old Administration Building opened more than 30 years ago, UM-St. Louis has become the largest university serving St. Louisans and the third largest university in the state.

The University faculty has grown from 30 in 1963 to more than 900 members, committed to the future of the St. Louis area through teaching, research, and service.

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

Student enrollment has grown from 600 in 1963 to more than 16,000 in the 1996-97 school year. The numbers have changed, but not the spirit. Faculty and students are still most concerned with the education of new talent, which is the basis for the future social, intellectual, and economic health of Missouri's largest metropolitan area.

From its beginning on what was once the site of a country club with a single building, the University of Missouri-St. Louis has grown to a large modern campus of some 73 buildings on 250 acres, offering a full university experience.

The curriculum has grown to include 42 undergraduate programs, 26 master's programs, seven pre-professional programs, ten doctoral programs, and one professional degree program. There are programs which answer the particular needs of older students returning to school; of students pursuing pre-architecture, pre-law, pre-medicine, pre-pharmacy, pre-engineering, or pre-journalism courses; and of students interested in urban careers. There are also many opportunities for students to combine their academic course work with internships that often lead to job offers.

Mission Statement

As one of the four campuses comprising the University of Missouri, the University of Missouri-St. Louis has served the citizens of the St. Louis metropolitan area since 1963. It shares the University's land-grant tradition and is committed to research and public service. The productive scholars on the campus' faculty contribute significantly to the theoretical and applied research in their fields. The campus' business, chemistry, political science, and metropolitan studies programs already are internationally recognized. As it develops, the campus will support other centers of excellence in departments or clusters of departments as the quality of scholarship achieves consistent international recognition.

In addition to its role to advance knowledge as part of a comprehensive research university, the University of Missouri-St. Louis has a special mission determined by its urban location and its shared land-grant tradition. It works in partnership with other key community institutions to help the St. Louis region progress and prosper.

Through its seven schools and colleges, the campus provides opportunities for all the people of the metropolitan area, including the economically disadvantaged, to receive high quality and accessible liberal arts, career, professional, and graduate education.

Introduction to UM-St. Louis

Through a careful melding of strengths in scholarly research, teaching, and community service, the University of Missouri-St. Louis plays a leadership role in advancing scholarship; providing quality undergraduate, graduate, and professional instruction to the large and diverse numbers of students in the St. Louis area, while it contributes to economic development throughout the state and region.

In shaping and evaluating its undergraduate curriculum, the University of Missouri-St. Louis fosters intellectual independence, sound judgment, clarity of expression in writing, aesthetic refinement, and sharpened analytical skills. The campus provides high quality undergraduate, graduate, and professional instruction to an ethnically, racially, and economically diverse student body. Special efforts are made to fulfill the University's land-grant mandate to serve the working people of the state. Because most of the campus' graduates remain in the metropolitan area, they enhance the economic development and quality of life of the metropolitan area and the state.

These research, instructional, economic development and community service missions are accomplished by on-campus and extension programs in the schools and colleges of Arts and Sciences, Business, Education, Nursing, and Optometry, as well as the Evening College and the Division of Continuing Education-Extension. In addition, the campus' humanities, fine arts, and performing arts programs enrich the cultural life of the metropolitan area.

The University of Missouri-St. Louis will work vigorously to achieve equal opportunity for all within the campus community through a strong affirmative action program.

The University: Academic Structure

The academic structure of the University consists of the College of Arts and Sciences, School of Business Administration, School of Education, Evening College, Graduate School, Barnes College of Nursing, School of Optometry, UM-St. Louis/Washington University Joint Engineering Program and Continuing Education-Extension.

The **College of Arts and Sciences**, the largest of the divisions, includes 18 academic departments that combine the best features of two different educational worlds. One world consists of general educational offerings and provides students with opportunities to acquire a breadth of knowledge and a foundation in the basic skills of intellectual inquiry. The other world supplies the basic preparation for the student's professional life by providing learning experiences leading to a career in a specific field.

The **School of Business Administration** maintains a balance between the specialization of professional courses and the diversity of liberal arts. Besides training students as qualified professionals for the business world, the School of Business Administration, through its bachelor's degree and master's degree programs expands student capability in communication, analysis, and judgment, thus enabling our graduates to deal more effectively with today's complex economic environment.

The **School of Education** provides undergraduate and graduate programs to prepare and sustain educational leaders for a variety of school and nonschool settings. The School is consistently one of the top three institutions in the state in the production of educators. Consistent with the School's theme of "Creating the 21st Century School of Education," programs emphasize state-of-the-art technological applications to enhance teaching and learning as well as collaboration among university, school, agency, and corporate partners to prepare and revitalize educators. The faculty, including a number of nationally recognized endowed professors, is committed to a continuous exchange between research and practice that improves the learning environment for diverse learners.

The **Evening College** was established to provide a university education for those who cannot attend classes during the day. For those interested in traditional university study, the Evening College offers almost all of the degree programs available to day students and ensures that these programs conform to the same standards and requirements as their daytime counterparts. For students seeking innovative approaches to education, the Evening College has the Bachelor of General Studies (BGS) Program, a unique concept designed for mature individuals who want more flexibility in reaching their educational goals. BGS students choose courses from the UM-St. Louis curriculum that they view as important to their education, and their degree program's structure will thus vary according to their needs. Most campus services available to day students are also available to Evening College students.

Introduction to UM-St. Louis

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

The **School of Optometry** is one of 17 schools of optometry in the United States. The School provides its students with a professional optometric education and clinical experience. Facilities are furnished with equipment for teaching and research. The School operates the University Eye Center located on campus, the Optometric Center of St. Louis located in the Central West End, and the East St. Louis Eye Center, jointly owned and operated by the UM-St. Louis School of Optometry and Southern Illinois University at Edwardsville.

The **Pierre Laclède Honors College**, inaugurated in 1989, brings together a highly select group of intellectually curious and gifted students who are pursuing various career goals and earning degrees in disciplines offered by the University's other undergraduate schools and colleges. These Honors Scholars follow a special curriculum that combines a series of innovative Honors College classes and course work done for Honors credit in their major areas. They actively engage in their education in small seminars led by some of the University's finest teachers. In addition to offering scholarships and stipends, the Honors College has unique features such as the Community Mentorship Program which links Scholars with model urban citizens who share their interests.

The **Barnes College of Nursing** offers innovative programs at the bachelor's, master's and doctoral levels. The Bachelor of Science in Nursing is available for the individual wishing to pursue a program of studies which will lead to eligibility to complete state licensure examinations to become a registered nurse (R.N.). In addition, an upper level option designed for the associate degree or diploma educated registered nurse is available which avoids repeating basic nursing course work. The Master of Science in Nursing is a cooperative program with UM-Kansas City School of Nursing and offers studies in Adult, Children and Women's Health. Practitioner options are also available (Adult, Family, Pediatric, and Women) as part of the MSN program. The Ph.D. in Nursing offers studies focused on Health Promotion and Protection, Health Restoration and Support, and Health Care Systems. Studies at all three levels may be pursued full-time or part-time.

UM-St. Louis/Washington University Joint Undergraduate Engineering Program. In a pioneering program, the University of Missouri-St. Louis and Washington University have joined forces to offer Bachelor of Science degrees in mechanical, electrical and civil engineering. Students who enter the program take about half of their course work - mathematics, physics, chemistry, humanities and social sciences, and some elementary engineering subject- on the campus of UM-St. Louis. 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. Students register for all courses at UM-St. Louis, pay tuition at UM-St. Louis rates (plus a small surcharge on engineering courses), and receive their degrees from the University of Missouri.

The **Continuing Education-Extension Division** extends the University's expertise to the community by offering a variety of credit and non-credit courses, both on and off campus. It also sponsors programs in the community, such as the annual St. Louis Storytelling Festival. In 1996-97, more than 89,700 participants were served in 3,000 credit and non-credit programs.

The **Office of International Student Services of the Center for International Studies** assists international students and scholars to excel at UM-St. Louis and in the U.S. Services include undergraduate and graduate admission, credential and transfer credit evaluations, visa and immigration advising, pre-arrival and cultural adaptation assistance, new international student and scholar orientation, prospective student information requests, and personal advising.

The Office also coordinates activities for the successful integration of students and scholars into the community by facilitating cultural events and activities, coordinating the annual International Student Speaker's Bureau, and working closely with other campus and community organizations. For additional information about international student applications, see the section on Students from Other Countries, page 19.

The University: Student Life

UM-St. Louis is an educational institution that provides opportunities for all students through a demanding curriculum. But the life of the University is not all work. There are a great many leisure-time activities, either free or at reduced cost to students. Numerous student organizations, from the Accounting Club to Zeta Tau Alpha sorority, seek members-and leaders. Interesting speakers, concerts, film series, plays, exhibits, recitals and a host of informal gatherings

Introduction to UM-St. Louis

crowd each week's schedule. And, if that's not enough, the St. Louis area offers still more recreational, sports, and cultural events.

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

The Mark Twain athletic facility offers a state-of-the-art fitness center, weight room, a swimming pool, basketball, volleyball, handball, and racquetball courts. Outdoor facilities include tennis and handball courts, a fitness trail, and baseball, soccer and softball fields.

Students will find fitness activities, both organized and individual, to suit their interests and needs. Intramural sports are available to all students, with schedules designed for maximum participation.

The University: Its Graduates

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

The University is a major force in providing the region with a highly educated and diverse work force. Our alumni can be found in companies and organizations throughout the region and nation. UM-St. Louis has graduated more than 6,000 accountants, 600 nurses and 400 doctors of optometry. With more than 8,000 graduates, the School of Education is the largest educator of teachers in the St. Louis metropolitan area.

The graduates of UM-St. Louis are establishing a new kind of university - a public, metropolitan institution with a commitment to academic excellence and service to the community. We are proud of the tradition these alumni have established and we are committed to continue to be a valuable asset to our community and to the region.

Undergraduate Study

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

Admission and Application Procedure

Application Fee

Effective Winter Semester, 1999, a non-refundable fee of \$25 (\$40 for International Students) by check or money order made payable to The University of Missouri must accompany all first-time applications for Graduate or Undergraduate Student classifications.

Admission for First-Time Freshmen

The University of Missouri has a uniform policy for the admission of freshman students to its four campuses. The four campuses are of equal stature in the University system, and a common standard is applied at each campus. The procedure for regular admission from high school is described in this publication.

Selection of students for regular admission is based on high school class rank, performance on a standardized college aptitude test, and required high school units. Students must also submit their high school transcripts and, where appropriate, recommendations by persons knowledgeable of their potential for success in university-level education.

Admission Procedure: Students applying as first-time freshmen (i.e., students without previous college work) need to submit to the University of Missouri-St. Louis Director of Admissions three documents:

1) Undergraduate Application for Admission form: You may request one by calling the Office of Admissions at (314) 516-5451. The application is also available via the Internet. Applicants may apply by visiting the UM-St. Louis home page (www.umsl.edu)

2) High School Transcript and Class Rank: The transcript must be sent directly from the high school to the UM-St. Louis Admissions Office. The transcript should indicate the class rank at the time of application and all courses satisfactorily completed. For those students applying during their senior year in high school, which will include most applicants, class rank as of the end of six semesters (end of junior year) will be used. If a later class rank is available at the time application is made, it should be used.

3) College Aptitude Test: The University's freshman admissions procedure requires that a test score be submitted for each applicant. This requirement may be met by a score from any one of the following College Aptitude Examinations:

American College Testing Program (ACT) These tests are administered at many locations across the country under the auspices of the ACT program. Students who participate in this program should request that score reports be sent to the university campuses to which they apply.

Scholastic Aptitude Test (SAT) This test is administered at many locations across the country under the auspices of the College Entrance Examination Board. Students who take the SAT should request that score reports be sent to the campuses to which they apply.

Admission Requirements Any high school graduate is admissible without further data upon submission of a transcript or other evidence indicating he or she meets both the following requirements:

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

English: Two units emphasizing composition or writing skills are required. One of the remaining two units may be in speech or debate-4 units

Mathematics: (Algebra 1 and higher)-4 units

Science: Not including general science, one of 3 units which must be a laboratory course-3 units

Social Studies: 3 units

Fine Arts: 1 unit

Foreign Language: Must be 2 units of a single language.-2 units

2) In addition, each student will be evaluated on the basis of High School Rank Percentile (HSCR) and Test Score.

The University seeks a heterogeneous student body reflecting diversity of race, ethnicity, age, geography, (including international students) and physical disability. Factors given prime consideration for admission to undergraduate study are an applicant's previous academic success and the quality of the record presented. Applicants who do not meet the criteria set forth in sections 1 and 2 may be considered by applying to the Director of Admissions. Additional factors considered for admissions include:

- Extensive extracurricular activity involving school, church, or community;
- Outstanding talent and/or abilities;
- Number and scope of college preparatory courses taken;
- Evidence of marked improvement over time in high school academic record;
- Significant work experience and/or family responsibilities;
- Supporting evidence attesting to one or more of the above in student's own hand (in the form of essay).

Undergraduate Study

Out-of-State Freshmen The same admissions requirements apply to all out-of-state freshmen who have graduated from an accredited high school. Students should be aware that the University of Missouri-St. Louis provides limited Residence Hall facilities. Nonresident students must pay nonresident educational fees in addition to regular educational fees.

When to Apply: Qualified applicants are admitted and notified by letter of their admission in the order that completed applications are received. Applications are accepted after October 1 for the next Fall Semester on the basis of six or more high school semesters. Completed applications, including high school transcripts and test scores, should be on file by July 1 to guarantee that they will receive full consideration. Datelines are July 1 for the Fall Semester; December 1 for the Winter Semester; and May 1 for the Summer Session.

Acceptance: Upon acceptance to the Fall or Winter Semester, students must submit a final high school transcript indicating their class rank and graduation date. First-time freshmen may be required to take placement examination in mathematics. Arrangements for this exams are made with students through the Office of Admissions after notification of admission.

Advanced Standing for Entering Freshmen: The University of Missouri-St. Louis grants credit hours to entering freshmen who, through their performance on College Entrance Examination Board Advanced Placement Tests and faculty-administered tests, demonstrate proficiency in certain college-level courses, such as accounting, biology, chemistry, English, foreign languages, history, mathematics, political science, and physics. For further information and applications, write to College Board Placement Examinations, Box 592, Princeton, New Jersey 08540. The score-reporting institution code number for the University of Missouri-St. Louis is 6889. Test scores should be sent to the Director of Admissions and must be on file before the first day of classes. A brochure with detailed information is available in the Office of Admissions.

Dual High School/University Enrollment: Superior high school students may be admitted in a special, student category for the purpose of taking one or more university courses concurrently with their final year or two of high school or during the summer session prior to these years. Students must submit a regular application for admission, as well as a special request which includes a high school recommendation. Students are admitted on an individual basis on the basis of academic standards that exceed those required for regular admission from high school. Admission is limited and governed by available space, and students must meet the prerequisites for the desired course or courses.

College Level Examination Program: Individuals over age 18 who have had no previous college work may earn advanced credit through the College Level Examination Program (CLEP) General Examination, provided they score at or above the 50th percentile. A maximum of 28 semester hours of credit may be earned. In addition, CLEP offers subject examinations for credit in one specific area. These examinations can be taken any time, provided the student has not taken a course in the test area. A score at or above the 50th percentile must be earned to receive credit. Consultation with an adviser is recommended. CLEP tests are given the third week of every month. Contact the Office of Admissions at 516-5451 for complete information. A brochure with detailed information is available.

Credit for Military Service: Credit may be allowed for service training programs conducted by the various Armed Forces branches. The American Council of Education recommendations in A Guide to the Evaluation of Educational Experiences in the Armed Services generally serve as a basis for granting such credit. To count toward a degree, the credit granted must be appropriate to the student's curriculum.

Trial Admission: High school graduates who do not meet the regular admission standards may be admitted on a trial basis. Usually enrollment is for nine hours and if grades of C or better are earned, the student will be allowed to continue for the following semester.

High School Equivalency Applicants: Individuals may seek admission on the basis of high school equivalency earned from performance on the United States Armed Forces Institute General Educational Development (GED) tests. Admission is based on an evaluation of the educational merits of military and other experiences since leaving school, GED test scores, and performance on other aptitude tests.

Veterans and Mature Adults: Applicant may be admitted as special or irregular students, not degree candidates, if they are veterans of the military service or over age 21 and have not previously earned college credit, have not been in school for several years, have not earned a high school diploma, or passed the GED; or if they have a diploma, but do not meet regular admission requirements from high school. Admission is based on special preparation, attainment, or exceptional aptitude as judged by an evaluation of military and other experiences, test scores, and other indicators of potential success at the University. Students can become degree candidates on the basis of their performance in university course work.

Undergraduate Study

Transfer Students: Missouri state institutions of higher education welcome transfer students; however, students should be aware that actual requirements for degrees vary from institution to institution. This factor makes it particularly important that students who plan to transfer make contact, very early in their academic career, with the campus from which they eventually wish to graduate. By arranging in advance for appropriate courses to be taken prior to transfer, they can likely minimize their problems. Your own campus dean's office or Office of Admissions can help you contact the institution to which you might transfer if you need assistance.

Students transferring from other colleges and universities must submit the following information to the UM-St. Louis Director of Admissions:

- 1) Undergraduate Application for Admission;
- 2) High School Transcript: (if one of the following applies)
 - a) applicant has less than 24 hours of college level course work
 - b) applicant is pursuing a degree or certification in Education
 - c) applicant is a non-resident of Missouri
- 3) Official Transcripts from all colleges/universities attended.

Official transcripts must be sent by each institution directly to the Admissions Office. Hand-carried credentials are not accepted. All credentials submitted for admission become the property of the University. The above material should be submitted by July 1 for the Fall Semester; December 1 for the Winter Semester; and May 1 for the Summer Session.

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

Transfer applicants applying to the University of Missouri-St. Louis from regionally accredited colleges or universities with grade point averages of 3.0 or higher, based on a 4-point system, may be admitted at any time. Students with grade point averages of 2.5 or higher may be accepted **any time during the semester before desired admission**, while students with grade point averages of 2.0 or higher may be accepted any time during the **last half of the semester before desired admission**. UM-St. Louis may not admit any student who is under suspension or dismissal or whose previous record shows work of an inferior or unsatisfactory quality.

CBHE Statement: Students transferring to the University of Missouri-St. Louis and students transferring out of UM-St. Louis may utilize the Coordinating Board of Higher Education Articulation Agreement. The agreement outlines statewide undergraduate general education requirements which satisfy the general requirements for students transferring into UM-St. Louis and students transferring out of UM-St. Louis to other public higher education universities in the state. These requirements are detailed on the page prior to the Appendix in this catalogue.

Advanced Standing: According to a recent Articulation Agreement among public institutions within the state of Missouri, the following guidelines will govern transfer of credit to the University of Missouri-St. Louis from colleges and universities within the state of Missouri. These guidelines also apply to students transferring to the University of Missouri-St. Louis from schools located outside the state of Missouri.

Advanced standing in the form of credit hours may be allowed for work satisfactorily completed in another college or university of recognized standing, public or private, located in the state of Missouri, as long as the work satisfies the requirements of the university division in which the student registers.

The academic record at a given institution will include all courses attempted. Grades of D or better, earned in college-level work at an accredited or approved institution of higher education, should receive full credit when transferred to the University of Missouri-St. Louis. The University, however, will treat all grades on courses attempted on the same basis as that of the UM-St. Louis student. For example, if a UM-St. Louis student is required to repeat a specified course, having earned a D grade, a transfer student will also be required to repeat the same course, if it carried a D grade. Advanced standing for work of the senior year is not granted. To receive recognition, claims for advanced standing must be made by students within one semester after entrance.

Shortly after all official transcripts are on file, a student's previous academic record will be evaluated to determine which courses are applicable. Should there be any question concerning the applicability of any courses, the student should contact the advising office of the their academic unit.

Undergraduate Study

The University of Missouri-St. Louis *Bulletin*: Undergraduate Catalogue in effect at the time of the transfer student's initial enrollment in a college will govern the degree requirements, provided the student has had continuous, full-time enrollment and remains in the same degree program after transferring to UM-St. Louis. If full-time continuous enrollment has not been maintained, or if students change their program objective, the catalogue in effect at the time of a student's latest enrollment, or at the time the student elects the new program, may be followed.

Degree checks, that is, determining whether courses meet a specific degree requirement and whether courses are accepted as a part of the student's academic major, are made in the office of the dean concerned. Should any questions arise, a student should contact the advising office of their academic unit.

Associate Degree Transfers from Junior Colleges: A student admitted to the University and holding an associate degree oriented toward the baccalaureate degree will be accepted in junior standing. Students fulfilling the general education requirements outlined by the Missouri Coordinating Board of Higher Education and certified by the sending institution will have met the lower division general education requirements at UM-St. Louis. However, this does not exempt the student from meeting the specialized lower division degree requirements of departments or divisions of the University. Courses completed in the associate degree program are evaluated for application to specific degree requirements by the same criteria used for transfer students from other colleges and universities located in Missouri, other University of Missouri campuses, and other divisions on this University campus.

Credit earned in or transferred from a community college shall normally be limited to approximately half the baccalaureate degree program requirement, and to the first two years of the undergraduate educational experience.

Transfer Within the University of Missouri System: A student not in good standing at another campus of the University of Missouri (suspended or dismissed) is not eligible to enroll at the University of Missouri-St. Louis campus.

Any course that leads to an undergraduate degree on any campus of the University of Missouri shall be accepted in transfer toward the same degree on any campus of the University offering that degree. Grades, including D and F grades, and honor points earned in such courses will also transfer and will be included in the cumulative grade point averages of the transferring student. Questions concerning acceptability of credit should be referred to the Director of Admissions. Unresolved problems related to transferability of credit may be appealed to the Senate Committee on Admissions and Student Financial Aid.

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

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

Beginning in the Fall semester, 1998, all students in F-1 and J-1 status will be required to purchase an inexpensive insurance policy with excellent coverage for illness and accidents, which will be billed directly to the students' account. For further details, please contact :

Office of International Student Services
University of Missouri-St. Louis
SSB-304
8001 Natural Bridge Road
St. Louis, MO 63121-4499

Former Students: Former students not currently enrolled should file a request for a Permit to Re-Enroll with the Director of Admissions at least 30 days before the registration period. If Fall Semester applicants receive an Early Admission decision, they may preregister in July and August; preregistration for the Winter semester and the Summer Session is limited to students enrolled during the preceding term.

Visiting Students: Students who do not wish to earn a degree from the University of Missouri-St. Louis may be admitted to the Summer Session as visiting college students. Admission requires certification by the student's college or university that the student is in good standing and has permission to enroll in approved course work for transfer credit back to that institution. Application forms for certification can be obtained from the Office of Admissions. At the end of the session, students must request that their grades be reported by transcript to their respective schools.

Undergraduate Study

Auditor: A student may enroll as an auditor in any course with the prior consent of the instructor and dean of the School or College in which the auditor is registered. They may be dropped from the course when, in the judgment of the instructor and dean, their record justifies such action. Auditors are charged full fees and receive no academic credit.

Evening College Applicants: The admission procedure for the Evening College is the same as for the day division. For further information, see the next section, "Enrollment and Academic Advising: Evening College," and the Evening College special section of this *Bulletin*.

Registration

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

Former Students: Former students not currently enrolled must submit requests for permits to re-enroll to the Office of Admissions.

Currently Enrolled Students: Currently enrolled students are given the opportunity to preregister, by appointment, before all other students. Students wishing to preregister for the next semester in a different Division or School must complete a Change of Division form at the Office of Admissions.

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

Registration Cancellation: Students who have enrolled and paid their fees but do not wish to attend the University may cancel their registration any time before the first day of the semester. Cancellation forms may be obtained at the Office of the Registrar. If cancellation is made before the first day of class work begins, a full refund of fees (less \$20 for the cost of handling registration) will be made by mail. For the refund schedule for cancellation of registration after class work begins, see the "Fees: Refund of Fees" section of this *Bulletin*.

Enrollment and Academic Advising

Incoming undergraduate students are admitted to the college or professional school that offers the degree that was specified on the student's application form. Undecided students, visiting students and non-degree students are admitted to the College of Arts and Sciences. Students indicating a desire to take coursework during the evening are admitted to the Evening College regardless of major and students seeking admission to the nursing program are advised by the Barnes College of Nursing.

Students in the Evening College who have completed 40 semester hours must declare their majors. They are assigned according to their choice of major to departmental advisers in the College of Arts and Sciences or advisers in the appropriate School. Nursing students meeting all requirements are admitted directly to and advised by the Barnes College of Nursing. Those not meeting admission requirements are admitted to the College of Arts and Science or the Evening College until requirements are met. Such students continue to be advised by the Barnes College of Nursing even though enrolled in one of the other colleges.

Each division will assist students with the following matters: planning or changing a course schedule, evaluating transfer credit, withdrawing from school, placing a course on a satisfactory/unsatisfactory basis, filing for grade modification, and applying for graduation.

College of Arts and Sciences

All incoming students may receive professional academic advice in the dean's office, 303 Lucas Hall (314) 516-5300. Students expecting to major in business administration or education who have completed fewer than 30 credit hours and students who have not declared a major in the College of Arts and Sciences may receive academic advising in the dean's office as well. Faculty advisers for those students considering a career in one of the health sciences or in law may also be contacted through the dean's office.

Since it is important for students to determine what specific requirements must be satisfied to complete their chosen baccalaureate program, they are urged to declare a major as soon as possible. Once students have declared a major, they should inform the department's office so that the appropriate academic adviser can be assigned. The adviser, usually a faculty member in the student's area of interest, will assist in selecting suitable courses and advise the student in matters relating to degree requirements.

Undergraduate Study

Students transferring into the College from other institutions may seek assistance from the dean's office to effect as smooth a transition as possible. The College will evaluate all transfer credit to determine its applicability to the specialized degree requirements of the College.

School of Business Administration

The School of Business Administration's Office of Academic Advising has available a staff of professional academic advisors who provide assistance to students in planning their academic careers and in dealing with the following concerns:

Appropriate Course Selection; School of Business Administration Requirements; General Education Requirements; Evaluation of Transfer Credit; Course Prerequisites; School Policy and Regulations; Graduation Requirements

Other matters related to a student's academic matriculation should also be directed to this office.

Prospective business students who are admitted to the Evening College should submit an official declaration of their major to that office. When they have completed 39 hours of credit, they will then be assigned to the School of Business Administration for advisement.

Transfer students who have been admitted to the School of Business Administration should contact the advising office and plan to meet with an advisor early in the semester for an evaluation of transfer credit and the planning of their degree programs.

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

School of Education

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

- 1) Students who intend to teach in elementary, early childhood, middle, special education, business education, or physical education settings must apply for admission to the School of Education.
- 2) Students who intend to teach in other secondary school classrooms may elect to apply for admission to the School of Education to pursue the Bachelor of Science in Education degree (B.S.Ed.) or they may elect to earn a degree from another College or School at UM-St. Louis and take courses additionally to meet state teacher certification requirements.

With either option, students must meet University and departmental requirements, as well as those for teacher education in Missouri. Teacher education curricula vary considerably. Regardless of which option a student

chooses, he or she must complete the Formal Application to the Teacher Education Program. Careful planning of individual schedules is necessary to ensure selection of appropriate courses and to avoid extending programs. Students should, therefore, seek advisory help from the Office of Teacher Education at the earliest opportunity. Regular consultation with advisers is essential. For information, call (314) 516-5937.

The Office of Teacher Education provides assistance to all students interested in professional education programs and certification requirements. Questions about admission to the Teacher Education Program, sequences of courses, prerequisites, graduation requirements, and related matters should be directed to that Office.

Evening College

The Evening College academic advising staff helps students plan degree programs or select courses appropriate for their individual needs. Academic advising is available to all new and current undergraduate Evening College students. Advisers will review transfer credit courses, prerequisites, and degree requirements. Once Evening College students have declared a major, usually after completing approximately 40 semester hours of credit, they are assigned to an adviser in the student's area of study. A Declaration of Major form must be completed in the Evening College office so that the faculty adviser may be assigned. For an appointment, call the Evening College Office, (314) 516-5161.

Barnes College of Nursing

The Barnes College of Nursing offers the Bachelor of Science in Nursing degree (B.S.N.) for non RNs through a four year program of study. RNs who are graduates of diploma or associate degree nursing programs complete a junior-senior B.S.N. track (B.S.N. Completion) which avoids repeating previous nursing education.

With both options, students must meet University and Barnes College of Nursing requirements. Careful planning is necessary to assure appropriate course sequencing. Students are strongly encouraged to develop a plan of study in conjunction with a nursing academic advisor to avoid extending the program of study.

Faculty maintain the right to make appropriate curriculum changes to comply with standards for accreditation as stipulated by the National League for Nursing and Missouri Board of Nursing's minimum standards.

Undergraduate Study

Pierre Laclède Honors College: Honors Scholars receive both academic advising and personal counseling from the College's administrative and teaching staff throughout their undergraduate careers. During the first two years, particular attention is given to the ways in which students fulfill their Honors College and University General Education Requirements and prepare themselves for their majors by taking the necessary prerequisites. After a major is declared, Honors College advisement with regard to work done for Honors credit continues and is supplemented by major-related advising provided by the appropriate academic unit. The College identifies candidates for major graduate fellowships and assists them in preparing their dossiers. Similar assistance is given to Scholars planning to go on to graduate and professional schools or seeking career opportunities immediately upon graduation.

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.

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 100 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.

Basic Skills: All students must show from their high school or college transcript, by examination or by appropriate courses, competency in basic communicative and mathematical skills. Students should check with their divisional dean's office at the end of the first year to verify that their proficiency in these skills has been properly recorded.

An additional communicative skill requirement must also be completed before graduation. Students should check with their divisional dean's office at the beginning of their senior year to verify that fulfillment of this requirement has been recorded.

Communicative Skills (two requirements):

- 1) All students are required to complete a Freshman English Composition course with a grade of C- or better (English 10 - Freshman Composition at UM-St. Louis).
- 2) Effective since the Fall Semester, 1985, students must also complete English 210 - Advanced Expository Writing, or its equivalent, with a grade of C- or above.

Mathematical Skills: Proficiency in the basic mathematical skills area will be demonstrated by obtaining either:

- 1) A grade of C- or better in a college-credit mathematics course having at least intermediate algebra as a prerequisite, or
- 2) A satisfactory score on the University's Mathematics Proficiency Test. The proficiency test is over mathematics at the level of college algebra. The test should be passed before the student completes 24 hours of course work at UM-St. Louis. The test may be taken at most twice. Test dates are given in the Schedule of Classes.

Breadth of Study: Students must complete at least 42 hours in the following three areas, with at least three courses in each area. (Courses meeting these requirements are listed at the beginning of each departmental section.)

1) **Humanities:** art history or art appreciation; selected communication courses; literature; music history, literature, theory, or appreciation; philosophy and logic; theatre appreciation, theory, and history. (Applied Art/Music courses do not count.) (Symbol [H])

2) **Natural sciences and mathematics:** applied mathematics; astronomy; atmospheric science; biology; chemistry; computer science; geology; mathematics; physics; statistics. (Symbol [SM])

3) **Social sciences:** anthropology; communication (select courses only); criminology and criminal justice economics; geography; history; political science; psychology; social work; sociology. (Symbol [SS])

Other Requirements

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

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

CCJ 10, Introduction to Criminology and Criminal Justice
CCJ 226, Law and the Individual

Undergraduate Study

Hist 3, American Civilization I
Hist 4, American Civilization II
Hist 5, American Biography
Hist 6, African-American History
Hist 7, The History of Women in the United States
Hist 207, The History of Missouri
Hist 302, United States History: Revolution and the New Nation, 1763 to 1815
Hist 311, Topics in American Constitutional History
PolSci 11, Introduction to American Politics
PolSci 130, State Politics
PolSci 135, Introduction to Urban Politics
PolSci 140, Public Administration
PolSci 226, Law and the Individual
PolSci 230, The American Presidency
PolSci 231, Congressional Politics
PolSci 232, African-Americans and the Political System
PolSci 233, Introduction to Political Behavior
PolSci 235, Political Parties and Elections
PolSci 236, The Federal Budget: Politics & Policy
PolSci 240, Bureaucratic Politics
PolSci 242, Introduction to Public Policy
PolSci 245, Urban Administration
PolSci 320, Introduction to American Constitutional Law
PolSci 321, Civil Liberties
PolSci 326, Judicial Decision-Making
PolSci 333, Mock Constitutional Convention
PolSci 346, Urban Planning and Politics

Business Education Courses: The following courses are approved for degree credit only in the Business Education degree program and in the Bachelor of General Studies degree program with the dean's approval:

SEC ED 162, Computer Keyboarding and Formatting
SEC ED 362, Shorthand/Alpha Systems: Theory and Application

Reserve Officers Training Courses: Courses in ROTC do not receive Arts and Sciences credit, nor are they counted in the student's grade point average.

Other Considerations

Assessment: The University of Missouri has been directed by the Board of Curators to implement a variety of studies designed to assess the outcomes of university education. All students are required to participate in such studies as requested. Students who do not comply will not be able to register for the next semester or if in their final semester not be allowed to graduate. In subsequent years as alumni, graduates are encouraged to participate in assessment by completing questionnaires sent to them by the university.

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

Graduation: Students must file a degree application form with their respective dean's office at least one year before the expected graduation date. The dean's office makes a final check to determine that all graduation requirements have been met. Students should check with the dean's office or an adviser to be sure their program fulfills the requirements of the department and College or School, as well as the University general requirements.

To assure graduating at the end of a specific semester, all work for that semester and any delayed grades from previous semesters must be completed with the grades sent to the Office of Admissions no later than the official date for submission of final semester grades.

Academic Policy

Three times during the year, a Schedule of Courses is published, listing the specific courses offered that semester and their meeting times and locations. This Schedule is available as follows:

Fall Semester Schedule: in the preceding March.

Winter Semester Schedule: in the preceding October.

Summer Session Schedule: in the preceding March.

The schedule is also on the UM-St. Louis web site: <http://www.umsl.edu> The University reserves the right to cancel without notice any course listed in the *Bulletin* or the course schedules for any semester or to withdraw any course which does not have adequate enrollment at the close of registration.

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

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

Undergraduate Study

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

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

S/U = Satisfactory/Unsatisfactory (applied when a student has formally requested this option for a course—see information below)

EX = Excused DL = Delayed

Y = No basis for a grade

Faculty have full discretion in using full-letter grades, plus/minus grades, or any combination of full-letter and plus/minus grades.

The student's grade point average is computed by dividing the total quality points (number of credit hours for a course, multiplied by the grade value received) by the number of hours taken (excluding grade-modified hours).

At the end of each semester and summer session, the Registrar informs students of their grades. A copy will be mailed to parents at the student's request.

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

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

Notice of change in a delayed grade shall be given to the Registrar on a special form.

Y Grade: When, in the instructor's judgment, there is no basis for evaluating the work of students who do not officially drop a course or officially withdraw from the University, a mark of Y (unauthorized withdrawal—no basis for evaluation) is given. After a two-semester waiting period has elapsed, the Y will be changed to an F, unless the student can demonstrate sufficient reason for not having completed the requirements of the course. The instructor (or the chairperson of the department, if the instructor is no longer on the faculty) may then change the Y to "Excused." Initiating the process is the student's responsibility.

Examinations:

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

Satisfactory/Unsatisfactory Option: Undergraduate students may elect to take up to 18 credit hours during their academic careers at UM-St. Louis on a satisfactory/unsatisfactory (S/U) grading basis. This includes courses taken as electives or those which satisfy the general education requirements. Most courses required for a specific degree may not be taken on a satisfactory/unsatisfactory basis, and academic departments may designate other courses within their jurisdiction which may not be taken under the option.

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

A satisfactory grade—"S"—is recorded when an instructor assigns the grade of "A," "A-," "B+," "B," "B-," "C+," "C," "C-," and has no numerical value in computing one's cumulative grade point average; however it does satisfy credit-hour graduation requirements. An unsatisfactory grade—"U"—is recorded when an instructor assigns the grades of "D+," "D," "D-," or "F," and has no numerical value in computing one's cumulative grade point average, nor does it satisfy any credit-hour graduation requirements. Grades will be recorded on transcripts as "S" or "U."

Repeating Courses: Students may not repeat for grade point average or credit hour purposes courses in which grades of "A," "A-," "B+," "B," "B-," "C+," "C," or "C-" have been earned. If a student earns a "D+," "D," "D-," or "F," the course may be repeated. All grades earned will affect the calculation of one's cumulative grade point average; the course hours, however, will only be counted once in calculating hours towards one's degree. (See Grade Modification.)

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

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

Enrollment Policies

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

Course Load: A normal full-time semester work load is 15 hours. Six hours is normal for the Summer Session. Minimum full-time enrollment is 12 hours. Students who have demonstrated the ability to carry more than 17 hours successfully may enroll for additional hours with the approval of their dean.

Attendance: Students are expected to attend class regularly, and, in accordance with the UM-St. Louis Bylaws, faculty may establish penalties for excessive absences. Students absent for more than three successive classes may be reported to the dean.

Students should tell their divisional dean's office of an extended absence. An absence known in advance should be reported to the instructors of courses that will be missed. Make-up of examinations or work missed is allowed at the instructor's discretion.

Students, excused from class for valid reasons by their deans, shall be permitted, if possible, to make up work missed; the dean must have notified the instructor in writing.

Dropping/Adding Courses: To add courses to their original enrollment, students must get approval from their advisers. Students may not enter courses after the first two weeks of the semester or the first week of the Summer Session. Courses may be dropped, without approval, through the fourth week of a regular semester and the second week of a Summer Session. Students may withdraw from courses without a grade up to the end of the fourth week of the semester and the second week of the Summer Session.

From the fifth through the twelfth weeks of the Fall or Winter Semesters (for Summer Session, the third through the sixth weeks) students may withdraw from a course with an "Excused" grade, providing they are passing the course and receive the approval of their instructor, adviser, and dean's office representative. Otherwise, a failing grade is given. Students not attending classes who fail to drop officially receive F or Y grades. The Y later changes to F or, with the instructor's permission, to "Excused." (See page 25 for a fuller explanation of the Y grade.)

After the allowable period mentioned previously, "Excused" grades are given only in exceptional instances where the instructor's approval and dean's approval are given. These grades are recorded on the students' official records at the end of the term. If an F grade is recorded, it is counted in computing the grade point average. No partial credit is granted to students who withdraw from a course during any semester or otherwise fail to complete the work required for full course credit.

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Section Changing: Section changing is normally done during the first two weeks of a regular semester and the first week of a Summer Session. No approvals need be received during this time. However, after the second week of a regular semester and the first week of a Summer Session, a section change form must be obtained from the departmental or dean's office. The signatures of both instructors (of both sections) are required. The form is to be submitted to the Registration Office, 230 Woods Hall.

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

Withdrawal after Classes Begin: After classes begin, students may withdraw from the University by completing the withdrawal form, available in the dean's office. During the first four weeks of the semester and the first two weeks of a Summer Session, students may withdraw from the University without receiving grades. After this period, grades of F or "Excused" are issued, based on whether the student is passing or failing. After the semester's twelfth week (or the sixth week in the Summer Session), "Excused" grades are given only in exceptional instances with the instructor's and dean's approval.

These grades are recorded on the student's official record at the end of the term. An F grade is counted in computing the grade point average. No partial credit is granted to students who withdraw from school during any semester or otherwise fail to complete the work required for full course credit. Students who stop attending classes without withdrawing officially from the University are issued an F or the temporary Y grade. Any F grades are counted in computing grade point averages.

Academic Probation, Suspension, and Dismissal

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

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

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

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

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

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

Honors

Pierre Laclède Honors College: The Pierre Laclède Honors College offers a select group of academically qualified and intellectually serious students the opportunity to focus a significant portion of their undergraduate careers upon a special Honors curriculum. Prospective Honors Scholars must apply for admission into the Honors College.

Undergraduate Study

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

Alpha Phi Sigma (Criminology and Criminal Justice)
Alpha Sigma Lambda (Evening College)
Beta Alpha Psi (School of Business Administration, Accounting Majors)
Beta Gamma Sigma (School of Business Administration)
Beta Sigma Kappa (School of Optometry)
Financial Management Association National Honor Society (Finance)
Kappa Delta Pi (School of Education)
Omicron Delta Epsilon (Economics)
Phi Alpha Theta (History)
Phi Epsilon Kappa (Physical Education)
Phi Kappa Phi (Campus-wide)
Pi Sigma Alpha (Political Science)
Psi Chi (Psychology)
Sigma Delta Pi (Spanish)
Sigma Iota Rho (International Studies)
Sigma Tau Delta (English)

Dean's List: At the end of each semester the College of Arts and Sciences, School of Business Administration, School of Education, the Evening College, and the Barnes College of Nursing send letters of commendation to undergraduates completing at least nine hours of graded courses with grade point averages of 3.2 or above for the semester.

In addition, each College and School, on an annual basis, sends letters of commendation to part-time undergraduate students who have earned a 3.2 grade point average or above in at least nine but not more than 17 graded hours during the Fall and Winter Semesters combined.

Who's Who Among Students in American

Universities and Colleges: Eligible students may be nominated to Who's Who Among Students in American Universities and Colleges by students (whether for themselves or others), faculty members, or administrators. Nominees are selected on the basis of scholastic ability (a cumulative grade point average of 2.5 or higher), participation and leadership in academic and extracurricular activities, service to the University, and a promise for future usefulness. Nomination forms and further information may be obtained in room 267 of the University Center or by visiting the Who's Who Web Site at <http://www.umsl.edu/studentlife/dsa/whos.html>.

Latin Honors: To graduate with Latin honors, students must have attended the University of Missouri-St. Louis for at least 60 graded hours and must meet the following qualifications: cum laude 3.2 to 3.49 grade point average; magna cum laude 3.5 to 3.79 grade point average; summa cum laude 3.8 to 4.0 grade point average. If a student has the necessary GPA at UM-St. Louis to qualify for Latin honors but has fewer than 60 graded hours at UM-St. Louis, all credit hours and the associated grades earned within the UM-System will be

included when the total credit hours earned in the UM-System are at least 80 graded hours. In determining one's eligibility for Latin honors, all graded hours will be considered, including the original grade in each grade-modified course. No Latin honor higher than that which is consistent with the UM-St. Louis grade point average will be awarded. All honors must be recommended by the student's major department. (Effective August 1990.)

Transcripts and Commencement

The Registrar will furnish transcripts of credits to a student upon written request. Transcripts are furnished to students' parents or guardians or other parties or institutions only if students have filed written consent with the Registrar's Office. There is a \$3.00 charge per transcript.

Students transferring to another University of Missouri campus may ask the UM-St. Louis Registrar to furnish a transcript to the Office of Admissions at the other UM campus.

Requests for transcripts by organizations either financially supporting a student or with fee compensation programs are not honored unless the student has filed a consent form with the Registrar's Office authorizing the release of such information.

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

Commencement

Degrees are conferred at commencement with candidates present for the awarding of diplomas. Only in unusual circumstances may degrees be conferred in absentia.

Veteran Affairs

The Veteran Affairs Office, 232 Woods Hall, serves as liaison to various government offices to provide information on educational benefits, privileges, and responsibilities relating to Veteran Administration benefits. A certifying official is available to answer veterans' questions and process official paperwork.

Veterans are certified to the Veteran Affairs Regional Office (VA) beginning with the date of initial registration, and regularly until the expected completion date of the

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VA approved program or degree. Veteran students must promptly inform the certifying official in 232 Woods of any changes in status which might affect benefits. Failure to report such changes can result in overpayments and other complications in receipt of benefits.

Veteran students are expected to attend classes, perform academic duties as assigned by instructors, and adhere to academic policies. Failure to do so will result in reports to the VA of unsatisfactory progress, which may result in discontinuance of benefits. Veteran students who cease attending, but do not officially withdraw from class or from the University, will be reported as not making satisfactory progress. If enrollment status is altered in any way, the VA will be notified and an overpayment may be charged against the veteran. For complete details and information, contact the Veteran Affairs Office at 516-5676.

Fees for Undergraduate Study:

Detailed information regarding current fees and residency regulations is furnished in the Schedule of Courses, a newspaper schedule, distributed before each semester registration, available at the registrar's office. Students should be aware that fees shown are current as this publication goes to press, but fee changes may occur while this *Bulletin* is still in use.

The University reserves the right to change fees and other charges at any time without advance notice.

Educational Fees (1998-99)

All students enrolled in the University must pay an Educational Fee based on either the schedule for Missouri residents or the schedule for nonresidents which follows.

Undergraduate Educational Fee

Regular Semester

Missouri Residents \$128.50 per credit hour
*Nonresidents \$384.10 per credit hour

Intersession and Summer Sessions

The Educational Fee per credit hour for these sessions follows the same schedule as listed previously.

Partial Enrollment

Since the Educational Fee owed by a student is on a per-credit-hour basis, the Educational Fee for partial enrollment is assessed according to the above schedule.

Fees for Auditing Courses

Courses taken as an auditor for reduced credit are counted at their normal credit value in computing the fees to be paid. Students enrolling in zero credit courses are also required to pay according to the equivalent

course credit.

For **Graduate Student Educational Fees**, see section titled "Graduate Study: Fees"

For **Optometry Student Educational Fees**, see the section of this catalogue for the School of Optometry.

*Nonresident Students

Students who do not meet the residency requirements must pay the Nonresident Educational Fee according to the schedule above. A definition of "residency" is outlined in Tuition and Residency Rules, available in the cashier's office. Students are responsible for registering under the proper residence and paying the proper Educational Fee. They are also responsible for raising any questions if there is a possibility that they are subject to the Nonresident Educational Fee schedule.

Late Registration Fee

There is a \$30 late registration fee for registering after the end of the first week of the Fall or Winter Semester, after the third day of Summer session and after the second day of Intersession. There is no late registration fee for those students who drop or add a course or for change a section.

Other Fees

Instructional Computing Fee

Students registered in the University are required to pay an Instructional Computing Fee of \$8.00 per credit hour.

Student Facility and Student Activity Fee

All students registered in the University are required to pay a Student Facility and Student Activity Fee. The fee shall be calculated at the rate of \$21.80 per credit hour up to a maximum of \$261.60 for 12 credit hours in regular sessions. In the Summer Session, the maximum fee is \$130.80 for six or more credit hours.

The Student Facility and Student Activity Fee is used for programs of broad interest within the University community. The fee for a full-time, regular semester is distributed as follows:

University Center □\$115.80
Athletic Program □\$87.60
Student Activities □\$24.36
Student Services □\$5.64
Recreation/Facility Fee □\$28.20
Total (for 12 credit hours) □\$261.60

Health Fee

Students registered in the University are required to pay a Health Fee of \$9.00 per semester; \$4.50 for Summer and Intersession.

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Parking Fees

Students wishing to operate motor vehicles on campus must register them and pay a fee at the time of registration. Failure to comply with traffic regulations may subject students to disciplinary action, payment of an additional fee, and the denial of the privilege to operate a motor vehicle on campus. Copies of Traffic Regulations for the University of Missouri-St. Louis are available at the UM-St. Louis Police Office.

The parking fee for 1998-99 is \$8.00 per credit hour, up to a maximum of \$128.00 for 16 credit hours in the regular semester, for each motor vehicle used by a student on campus. Parking fees in the Summer Session are at the same per-credit-hour-rate up to a maximum of \$64.00 for eight or more credit hours. Students who do not drive regularly may park in the daily parking lot for a fee of \$5.00 a day. Special parking rates are available for car pools. Motorcycle and motor scooter fees are \$4.00 per credit hour up to a maximum of \$64.00 in the regular semester and \$32.00 in the Summer Session.

The revenue from parking fees is used to construct and maintain roads, parking garages, and surface parking; to rent parking space off campus when necessary; to pay for the printing of parking stickers and regulations; and to pay for all other related expenses. Detailed information on parking regulations and fee refunds is available from the cashier's office.

Parking fees are refundable under the same schedule as other fees. Students must return the scraps of the parking sticker to obtain a refund if they decide to cancel parking privileges. See the following "Refund of Fees" section.

Transcript Fee

There is a \$3.00 fee for a transcript.

Payment of Fees

All fees are due and payable at the time of registration. Students with delinquent accounts will not be allowed to enroll in subsequent semesters. A minimum payment plan is available for students unable to complete their financial arrangements at the time of registration. Interest will be assessed on the unpaid balance of all students at the rate of one percent per month. More information about this plan is available at the cashier's office.

Personal Checks

Personal checks in payment of fees or other obligations to the University will be accepted only when the amount of the check does not exceed the amount due from the student.

A student, presenting a check to the University that is returned unpaid, shall pay a returned check charge of \$10.00.

Credit Cards

MasterCard, VISA, or Discover credit cards are accepted in payment of fees.

Delinquent Indebtedness

All delinquent indebtedness to the University must be cleared before transcripts or diplomas will be released.

Student Insurance

An optional accident and sickness insurance plan is available at low cost to students and their dependents. Information concerning premiums and coverage is available upon request from the cashier's office.

Beginning in the Fall semester, 1998, all students in F-1 and J-1 status will be required to purchase an inexpensive insurance policy with excellent coverage for illness and accidents, which will be billed directly to the students' account.

Refunds

A student may be eligible for a refund after completion of fee reassessment having already paid an amount in excess of fee percentage due the University as defined within the "Fee Reassessment for Dropping Classes or Withdrawal from School" section.

Note: All refunds are made by mail and require three (3) to five (5) weeks processing time after withdrawal or dropped classes. Deductions may be made from the refund amount for any financial obligation due the University of Missouri.

Withdrawal

Students who wish to withdraw from the University after registering (or preregistering) MUST officially withdraw through the Registrar's Office. Failure to pay fees, failure to receive financial aid, failure to attend class, or refusing financial aid does not constitute an official withdrawal from the University.

Fee Reassessment for Dropping Classes or Withdrawal from School

Fees will be reassessed for students who officially withdraw from the University or drop classes. Fees included in this reassessment are the Educational Fee, Student Activity Fee, Instructional Computing Fee and Parking Fee (if applicable). Such fees are reassessed

Undergraduate Study

and reduced in accordance with the following schedule:

Regular Semester

| | |
|------------------|------|
| First full week | 100% |
| Second full week | 80% |
| Third full week | 60% |
| Fourth full week | 40% |
| Thereafter | 0% |

Intersession

| | |
|--|-----|
| Second day of the semester | 00% |
| Fourth day of the semester | 80% |
| Monday of the second week of the semester | 60% |
| Wednesday of the second week of the semester | 40% |
| Thereafter | 0% |

Summer Session

| | |
|--|------|
| Third day of the semester | 100% |
| First week of the semester | 80% |
| Wednesday of the second week of the semester | 60% |
| Second week of the semester | 40% |
| Thereafter | 0% |

Graduate Study

Admission and Application Procedure

The University of Missouri-St. Louis offers courses for graduate credit to qualified individuals to fulfill two kinds of student objectives: (1) completion of academic and professional degrees and certificates, and (2) continuing personal or professional development.

Students with a bachelor's degree or the equivalent from an accredited college or university may apply for admission to the Graduate School. Applications are reviewed by the graduate program in which students propose to do graduate study and by the Graduate School. Within limitations, students may be admitted to the Graduate School if their previous academic record and background suggest reasonable likelihood for success in their proposed programs. Students are admitted by the Dean of the Graduate School only upon recommendation of the graduate program involved.

Inquiries concerning admission and requests for application forms should be sent to the Office of Graduate Admissions. A list of admission requirements for the particular degree program is sent with each application form. Application forms for financial assistance are also sent on request. All of the above information and forms are available on the Web at <http://www.umsl.edu/divisions/graduate>.

Different departments have different application deadlines, the earliest being Clinical Psychology which has a January 1 deadline for the Fall semester. In general, completed applications should be filed with the Office of Graduate Admissions by July 1 for the Fall semester; December 1, for the winter semester; and May 1, for the Summer session. Applicants requesting financial aid should submit the application by March 15. Some graduate programs with heavy enrollments have earlier final acceptance dates for admission and financial assistance. The University of Missouri-St. Louis supports the Council of Graduate Schools Resolution Regarding Graduate Scholars, Fellows, Trainees, and Assistants". This "Resolution defines the obligations of students and institutions regarding acceptance of support offers after April 15. Inquiries concerning Graduate School admission should be made as early as possible.

All doctoral programs require the Graduate Record Examination (GRE) General Test. It is also required for the M.A. in Economics, English, History, Political Science, Psychology, and Sociology, the M.S. in Physics and Physiological Optics, and the M.F.A in Creative Writing.

Advanced GRE examinations in the subject area are required for the Ph.D. program in Chemistry, Physics, and Psychology and the M.S. in Physics programs. The Graduate Management Admissions Test (GMAT) is required for applicants to the M.B.A., M.I.S. and M.Acc. and all graduate business certificate programs. Students who have not taken these examinations should do so at the earliest possible test date.

Application Fee

Applicants for admission into the Graduate School for the Winter 1999 and subsequent sessions must remit an application fee of \$25 for Permanent Residents of the United States, and \$40 for Non-permanent Residents or international applicants. An application fee, in the form of a personal check, bank check, or money order payable in U.S. currency, to the University of Missouri-St. Louis, must be submitted with the application.

Admission of International Students

In addition to the general requirements for admission to the Graduate School, other special provisions apply to international students. Prospective students should contact the Office of International Student Services. Phone 314-516-5229 Fax 314-516-5636 E-Mail: intelstu@umslvma.umsl.edu Web page: <http://www.umsl.edu/~intelstu>

International students whose native language is not English must take the TOEFL examination, and score 500 or above, to gain admission to the Graduate School. Teaching assistantships will not be awarded to students whose TOEFL scores are below 570.

For information on applications and test dates for GRE, GMAT and TOEFL examinations please contact Education Testing Service at <http://www.ets.org>.

Admission Categories

Any student who receives graduate credit for a course at the University of Missouri-St. Louis must have been admitted to the Graduate School under one of the categories specified for admission:

Matriculated Student

- Regular
- Restricted
- Provisional

Non-matriculated Student

- Non-degree
- Education Certification
- Inter-campus Exchange
- Postdoctoral

Graduate Study

Matriculated Students

Students who wish to take courses to obtain a UM-St. Louis certificate or degree must apply for status as a matriculated graduate student.

Regular Students

Students may be admitted as Regular graduate students if the undergraduate GPA and major field GPA are both 2.75 or above on a 4 point scale. A graduate program may establish additional or more restrictive standards of admission for a particular program.

Restricted Students

Students with an undergraduate GPA of 2.5 to 2.75 may be admitted as Restricted graduate students if there is strong supporting evidence in other areas: test scores, work in major field, strongly supportive letters, sharp improvement in undergraduate work, previous successful graduate work, evidence of academic maturity following completion of the undergraduate degree, etc. The courses in which such a student enrolls will apply to a degree or certificate program. However, a student may acquire no more than 12 credit hours on Restricted status. Shift from Restricted to Regular status requires (a) a "B" average on courses taken on Restricted status, (b) a positive recommendation from the graduate program, and © approval from the Graduate School.

Students with GPA's below 2.5 will not normally be admitted to the Graduate School.

Provisional Students

A Provisional student is one who seems qualified for admission to the Graduate School but who has not submitted all materials required for admission (official transcripts, test scores, etc.). The courses in which such a student enrolls will apply to a degree or certificate program. A student may enroll provisionally for one semester or summer term only. When all admission materials have been received, the graduate program will review the additional material before finally recommending Regular, or Restricted admission, or denial.

Because admission to doctoral-level studies is limited to people of demonstrably superior academic ability, the doctoral admission categories do not include Restricted status. Only two categories of admission to the doctoral level exist: Regular and Provisional.

Non-matriculated Students

Students who wish to take courses solely for personal or professional development should apply for status as non-matriculated, non-degree graduate students. They must provide an official transcript showing completion of a baccalaureate or higher degree, with a GPA of 2.5 or greater, and they must generally meet the same requirements for admission as a matriculated student with Restricted status. They do not need to submit test scores or letters of recommendation. Change from non-matriculant to matriculant requires the submission of a new graduate admission application, and it occurs only upon subsequent recommendation by the graduate program and approval by the Graduate School.

Non-degree Students

Students may be admitted as non-degree students if they are visiting students, they do not intend to pursue a degree, they intend to enter a program not yet established, or they are participants of graduate workshops or institutes. They must be accepted by the appropriate graduate program or a department without an established graduate program.

A non-degree student must maintain at least a 3.00 G.P.A. A non-degree student wishing to take more than nine credit hours may be allowed to do so, contingent upon departmental recommendation. However, course work completed by a non-degree student is not regarded as completed within a degree program. If such work is later to be transferred into a program, it must be approved by the department and may not exceed nine credit hours. It may not be counted as part of the residence requirement for a degree.

Education Certification Students

Education Certification Students are students who are taking courses for state Department of Education certification. They do not need specific departmental approval to take more than 9 credit hours. All other conditions regarding admission and registration that apply to Non-Degree Students apply to Education Certification Students.

Inter-campus Exchange Students

Students who have been admitted to an accredited graduate school and who wish to take courses at UM-St. Louis for later transfer to the degree-granting university are Inter-campus Exchange Students. Such students should apply for admission as non-matriculated students.

Postdoctoral Students

Individuals with doctoral degrees wishing to pursue special studies at the University of Missouri-St. Louis may be appointed postdoctoral research fellows by the Dean of the Graduate School on the recommendation of the appropriate University division.

Graduate Study

Traveling Scholars and Inter-University Graduate Exchange Students

There are two categories of students who may take graduate courses at UM-St. Louis without applying for admission to UM-St. Louis. Traveling Scholars are graduate students at one of the other UM campuses. Traveling Scholars register on their own UM campus to take courses at UM-St. Louis, using a special form to register for each course, and they report to the UM-St. Louis campus when classes begin. Inter-University Graduate Exchange Students are Washington University or St. Louis University students who enroll by special arrangement through the Registrar on the home campus for courses not offered on their own campus. Students are usually restricted to one exchange program course during their academic program.

Unclassified Students

Students who are not qualified for admission to the Graduate School may request admission to UM-St. Louis as Unclassified Students. Students so admitted are not admitted to the Graduate School, do not take 400-level courses, and do not receive graduate credit. Credits earned by an Unclassified Student cannot later become graduate credits should the student subsequently be admitted to the Graduate School.

Enrollment

Enrollment in Off-Campus and Continuing Education Courses

Students may enroll in off-campus and Continuing Education graduate courses on one of two bases. Students who have been admitted to the Graduate School may enroll without further application. Courses they complete satisfactorily may be included as part of a graduate program, subject to departmental and Graduate School approval.

Students holding a baccalaureate degree who have not been admitted to the Graduate School must simultaneously apply for admission as a non-matriculated graduate student. If admission is not obtained by the end of the semester, graduate credit will not be received.

Specific courses offered off-campus may be designated as taken in residence. Courses taken at the UM-St. Louis Lindbergh satellite center are considered as taken in residence. Unless otherwise specified, all other off-campus and Continuing Education courses are considered non-resident courses.

Non-resident courses may make up no more than one-third of a master's program. Non-resident courses are not normally included in the final two-thirds of a program.

Undergraduate Enrollment in 400-Level Courses

Undergraduate students at UM-St. Louis may enroll in 400-level courses for undergraduate credit. Approvals from the adviser, department chairperson, divisional dean, and Graduate Dean are required. Students subsequently admitted to the Graduate School may petition for graduate credit for 400-level courses which they took as undergraduates over and above those needed for their undergraduate degrees.

Enrollment in Relation to Admission

A student who has been admitted to the Graduate School may begin enrollment in any term of the following calendar year after admission. An approved application will be kept on active file for one year. After initial enrollment, students must enroll for at least one term each calendar year to remain in good standing. Students not meeting this enrollment requirement will be dropped from the Graduate School and required to re-apply for admission if they subsequently wish to continue. If students so terminated decide to reapply and if they are readmitted, they will be subject to all regulations in effect at the time of readmission. Doctoral students are required to register each semester after they achieve candidacy.

Leave of Absence

Graduate students who are forced to interrupt their studies for a period of one or more years should request a leave of absence from the University. In consultation with their department and adviser, students should define the program modifications the leave of absence requires. Requests should indicate the reason for leaving and the expected date of return to the University. Approval of the Graduate School is required. A leave of absence does not affect the maximum time limitation set for a degree program, unless a specific exception is approved. The primary effect of a leave of absence is to suspend the requirement for continuous enrollment.

Class Attendance

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

Preregistration

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

Graduate Study

Maximum Course Load The normal full-time course load for a regular semester is 9 to 12 credit hours. For an eight-week summer session, the maximum course load is two courses consisting of no more than 6 credit hours. Three hours is the maximum load during intersession.

Graduate students who are employed full-time may not register for more than six hours. Students employed part-time must adjust their course loads according to the number of hours employed. Students may either work full-time or carry a full load of courses, but not both. Graduate assistants may not work full time.

Petitioning Into or Out of a Course

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

Entering a Course in Progress

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

Dropping a Course

Students may drop courses before the end of the fourth week of a regular semester or the second week of the summer session without receiving grades.

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

Transcripts

The Registrar will furnish transcripts of credits to a student upon written request. Transcripts are furnished to students' parents or guardians or other parties or institutions only if students have filed written consent with the Registrar. There is a charge per transcript.

Students transferring to another University of Missouri campus may ask the UM-St. Louis director of Admissions to furnish a transcript to the Office of Graduate Admissions at the other UM campus.

Requests for transcripts by organizations either financially supporting a student or with fee compensation programs are not honored unless the student has filed a consent form with the Registrar, authorizing the release of such records. Transcripts are not issued to or for students who have financial obligations to the University until those obligations are paid in full.

Academic Policy

Course Level

All UM-St. Louis 300- and 400-level courses can be taken for graduate credit unless they have been designated in advance, "Not for graduate credit." For both master's and doctoral degrees, at least half of the credits must be from 400-level courses. Individual graduate programs may have more restrictive requirements, requiring a higher proportion of 400-level credits.

Within the department in which a student is pursuing a degree, no 200-level course may be taken for graduate credit. However, outside the student's department, one 200-level course may be taken for graduate credit with the approval of the student's adviser and the instructor. In every such case, the student's adviser must consult with the instructor to ensure that the instructor is aware that the course is being taken for graduate credit. The instructor may assign the additional work to the student commensurate with the student's graduate status. Courses numbered from 0 to 199 cannot be taken for graduate credit.

Transfer credit may be granted only for regular graduate courses for which a grade of A or B, or equivalent, was achieved.

Institute and Workshop Courses

Degree credit is allowed for institutes and workshops only if they are offered by a Missouri public university. All institute and workshop credit is considered transfer credit. No more than three hours of transfer credit in this category is permitted.

Graduate workshops or institutes are short-term offerings intended to meet the needs of specialized groups and to provide opportunities to explore new developments and current issues. Graduate study experiences not readily available in existing courses are appropriate for workshop or institute offerings.

A student who completes a workshop or institute course while not enrolled in the Graduate School may not subsequently include the course as part of a degree program. Inclusion of the workshop or institute credit in a graduate program is subject to the approval process inherent in the filing of a degree program. In instances where workshops or institutes are offered on a credit/non-credit or pass/fail basis, such credit may not be applied to a graduate degree.

Graduate Study

Foreign Language Requirement

The Graduate School does not have any general foreign language requirements for advanced degrees. Where graduate programs establish required levels of competence in one or more foreign languages, that competence shall be shown in one of the following ways, as determined by the graduate programs:

- 1) An examination given by the graduate programs.
- 2) Satisfactory completion of a language course at a specified level.

Evidence that the foreign language requirement has been satisfied shall be presented to the Graduate School in each case.

Grades

Faculty have complete discretion in assigning grades in their courses. Point assignments for grades are as follows:

| | | |
|--------------|---------|----------|
| | A = 4.0 | A- = 3.7 |
| B+ = 3.3 | B = 3.0 | B- = 2.7 |
| C+ = 2.3 | C = 2.0 | C- = 1.7 |
| F = 0 | | |
| EX = Excused | | |
| DL = Delayed | | |

The Graduate School does not recognize a "D" grade for a graduate student enrolled in a course carrying graduate credit. According to the regulations of the Graduate School, grades lower than "C-" are recorded as "F".

The satisfactory/unsatisfactory (S/U) option is not available to students taking courses at any level (200, 300, or 400) for graduate credit. Students may enter courses as auditors but may not change from audit to credit or credit to audit after the first week of class. Auditors are charged full fees and receive no academic credit.

Delayed grades may be given when a student's work is incomplete but otherwise worthy of credit. Delayed grades must be removed within two regular semesters after the time recorded or they automatically become F grades. Delayed grades recorded for courses in thesis or dissertation research are left as delayed grades until the final regular grades are reported by the instructor.

Students cannot earn a graduate degree with any delayed grades on their transcript. The only exception to this rule is for students enrolled in doctoral programs who are obtaining a master's degree or graduate certificate on the way to the doctorate. For these students, delayed grades in dissertation research are allowed at the time they receive their master's degree or graduate certificate.

Grade Point Average (GPA) on a 4.0 Scale

All courses taken at UM-St. Louis for graduate credit figure into the calculation of the transcript GPA, including courses that may not be a part of the degree program. However, only those courses included in the degree or certificate program are included in the calculation of the program GPA. The program GPA must be at least 3.0 for a student to receive a graduate degree or certificate.

Graduate courses taken by UM-St. Louis undergraduates and then petitioned into graduate credit will be included in GPA calculations. Extension work, institutes, workshops, and courses transferred from other universities or other UM campuses will not be included in any GPA calculation, even though the courses may be included as part of a degree program.

Probation

A graduate program must place a graduate student on probation if the transcript GPA, based on a minimum of 3 courses (9 credit hours), falls below 3.0 or if it regards the student's progress as unsatisfactory. The student will be placed on probation for one semester, during which time progress will be formally reviewed by the appropriate graduate program. After one semester the student will be removed from probation, continued on probation, or dismissed. A student may not continue on probation for more than one calendar year without permission of the Dean of the Graduate School. Probation letters will be sent out by the graduate program, with copies sent to the Graduate School and the Graduate Admissions Office.

Dismissal

A graduate student can be dismissed from the Graduate School on the recommendation of the graduate program and concurrence of the Graduate School. Dismissal letters will be sent out by the Graduate School, with copies sent to the graduate adviser and the Graduate Admissions Office. Notification will be sent by the Graduate School to the Registrar's Office. Non-degree students must maintain the same standards required of students enrolled in degree or certificate programs. Upon recommendation of the graduate program, non-degree students may be dismissed if their grade point averages fall below 3.0. They are dismissed if their grade point averages is below 3.0 at the end of 12 completed credit hours of study.

Graduate Study

Certificate Programs

Credit Requirements

A minimum of 18 hours of course work is required for a graduate certificate. At least 12 of these credit hours must consist of courses drawn from the list of core courses for the particular certificate program. At least 12 credit hours must be completed in residence at UM-St. Louis. At least nine credit hours must be at the 400 level. No more than six credit hours may be independent study.

Filing the Degree Program

A graduate student enrolled in a certificate program is required to file a degree program with the Graduate School before completing the first two-thirds of the number of hours required in the program.

Master's Degree Requirements

Credit Requirements

A minimum of 30 semester hours carrying graduate credit is required for every master's degree program.

Filing for Degree Program

Before completing the first two-thirds of the required hours in a degree program, graduate students, in consultation with their advisers, should file a program of study. This program must be approved by the graduate program involved and the Dean of the Graduate School.

Thesis and Comprehensive Examinations

Although not a general Graduate School requirement, a thesis may be required in particular degree programs. Where required, the thesis is directed by a three-member committee of graduate faculty appointed by the Dean of the Graduate School on the recommendation of the graduate program. Microfilming of master's theses by UMI is required by the Graduate School as a condition of degree conferral. Information on requirements, costs and optional copyrighting can be obtained from the Graduate School or the Library representative.

Comprehensive examinations, oral, written, or both, are required in most master's degree programs. Examinations are administered by a committee of no fewer than three graduate faculty members appointed by the Dean of the Graduate School on the recommendation of the graduate program.

Dual Master's Degrees

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

With approval of the graduate programs involved and the Dean of the Graduate School, students may simultaneously pursue two master's degrees under the following conditions:

- 1) No more than one-third of the credit hours required by either program may be applied to both programs.
- 2) Students must obtain approval of the graduate program and graduate advisers from both areas before they have completed 12 hours in either program. Under normal circumstances, two degrees will be pursued consecutively rather than concurrently.

An exception to the above one-third limit may be granted by the Dean of the Graduate School if the two degree programs have filed with the Graduate School approved guidelines addressing specific allowable transfers between those two degree programs.

Credit From a Certificate Program

Students who have completed course credits in certificate programs may transfer such credits into a master's degree program with the consent of the graduate program, as long as the credits fall within the time limitations set for master's degrees. If the master's degree is in a different graduate program from that awarding the certificate, then no more than one-third of the credits from the certificate program may apply to the master's degree. Students engaged in established multi-disciplinary studies governed by guidelines approved by the relevant graduate programs and the Graduate School may apply appropriate certificate credits in excess of this limit.

Time Limitation

The maximum amount of time allowed for completion of a master's degree is six years after the first graduate course enrollment. All courses included in a master's degree program, whether taken at UM-St. Louis or at another institution, must have been completed within six years of the awarding of the degree.

Residence Requirement

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

Continuous Enrollment

All master's degree students who regularly utilize faculty or facilities for the purpose of advisement, data gathering, or examinations, must be enrolled for credit commensurate with this activity.

Degree Conferral

Candidates for the master's degree are expected to attend commencement.

Graduate Study

Doctoral Degree Requirements

The doctoral degree is based on evidence that candidates have achieved a high level of scholarship and proficiency in research. The proficiency of students and their ability to work independently are established by a series of qualifying and comprehensive examinations and by the quality of their dissertations.

Credit Requirements

A minimum of 60 credit hours carrying graduate credit is required for every doctoral degree program. Graduate programs may require a greater number of credit hours.

Residence Requirement

The majority of credits used to satisfy requirements for a doctoral degree must be completed in residence at UM-St. Louis. For example, for a doctoral degree requiring 90 hours of work beyond the bachelor's degree, at least 46 hours must be completed at UM-St. Louis.

At some point in their course work, doctoral students must successfully complete a minimum of 15 hours over two consecutive terms ("term" meaning a regular semester or a summer session). The 15 hours may not all be taken in one term.

Work completed as a post-master's degree student, prior to admission to a doctoral program, may be counted toward a doctoral degree, up to a maximum of 12 credit hours. Inclusion of such course work is subject to graduate program approval and must have been completed within eight years of the time the doctoral degree is awarded. Exceptions to this regulation must be justified on academically defensible grounds and must be approved by the Graduate Dean prior to filing the program of study.

When doctoral students have earned a master's degree appropriate credits may be applied toward meeting the requirement for the doctoral degree, subject to graduate program approval. Such credits must constitute less than half of the total credits required for the doctorate.

For example, for a doctoral degree requiring 90 credit hours of work beyond the bachelor's degree, no more than 44 credit hours from a master's degree may apply to the doctoral degree. Credit for courses taken for a master's degree is exempt from the eight-year time limitation.

Time Limitation

Doctoral degree work must be completed within eight years after the first course of the doctoral program of study.

Comprehensive Examinations

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

Appointment of the Comprehensive Examination Committee is made by the Graduate Dean upon recommendation of the graduate program.

The Comprehensive Exam format must be approved by the graduate program and the Dean of the Graduate School. The format may consist of an oral and/or written portion. No revision of the approved format is permitted without the approval of the graduate program and the Dean.

Application for Candidacy

An Application for Candidacy should be filed immediately after the student has passed all comprehensive and language examinations, as required by the graduate program and completed all course work.

Dissertation Proposal

A Doctoral Dissertation Proposal should be filed before the student conducts any substantial research. Prior to this filing, the dissertation committee will meet with the student for an oral defense of the dissertation proposal. The dissertation proposal must be accepted by the Graduate School before a doctoral student completes the sixth semester of study, or before the student takes more than four credit hours of dissertation credit, whichever comes later.

It is understood that the dissertation research may evolve in directions quite different from the Dissertation Proposal, and the proposal is not intended to restrict the development of a research project. The dissertation proposal is in no way a contract between the University and the students. Depending on the outcome of the research, the dissertation may require substantially more work than anticipated at the stage of the dissertation proposal. The termination of a line of research and the adoption of a substantially new dissertation project will require the preparation, oral defense, and acceptance by the dissertation committee and the Dean of the Graduate School of the new dissertation proposal.

Graduate Study

Continuous Enrollment

When students are advanced to candidacy, they must remain in continuous enrollment until the degree is conferred. If students are actively engaged in degree activities on campus, they shall enroll for credit commensurate with this activity. If away from campus, students shall enroll for at least one credit hour each semester.

Dissertation Committee

The Doctoral Dissertation Committee will consist of at least four members of the UM-St. Louis graduate faculty. Included in this number is the committee chair, who must be a member of the doctoral faculty. Also included in this number is at least one person from outside the division, college, or school. The majority of members of the committee must be from the department in which the student is obtaining the degree.

When the dissertation committee deliberates on a dissertation or on an oral defense of the dissertation, two negative votes are sufficient for failure, even if outnumbered by positive votes. An abstention will be considered a negative vote. A student failing an oral defense should be provided with an opportunity for an additional defense. The timing and format of the subsequent defense will be determined by the dissertation committee and the second defense will take place before the same committee.

Dissertation and Final Examination

One copy of the dissertation, certified as complete and provisionally acceptable by all dissertation committee members, must be submitted to the Graduate School at least six weeks before commencement. The Dean of the Graduate School may assign the dissertation to other readers, on or off campus, or seek such other advice as the Dean feels pertinent.

Upon preliminary acceptance of the dissertation, the Dean of the Graduate School appoints the Defense of Dissertation Committee to conduct the final examination. The Dean appoints members of the dissertation committee and such other members of the Graduate Faculty as seem appropriate.

Candidates must submit an oral defense announcement, including an abstract of the dissertation, at least three weeks before the oral examination.

The Defense of Dissertation Committee certifies the final acceptability of the dissertation to the Dean of the Graduate School on the basis of a final examination open to all Graduate Faculty members. The chairperson of the dissertation committee is responsible for verifying that all the changes suggested by the Graduate Dean and the dissertation committee have been incorporated in the final draft of the dissertation or have been discussed further with the Graduate Dean or the committee. This certification is made by signing the "Final Approval of the Doctoral Dissertation" form. Microfilming of doctoral dissertations by UMI is required by the Graduate School. Information on requirements,

costs and optional copyrighting can be obtained from the Graduate School or the Library representative.

Degree Conferral

Candidates for the doctoral degree are expected to attend Commencement.

Fees for Graduate Study

Detailed information regarding current fees and residency regulations is furnished in the Schedule of Courses, a newspaper schedule, distributed before each semester registration, available at the registrar's office. Students should be aware that fees shown are current as this publication goes to press, but fee changes may occur while this Bulletin is still in use.

The University reserves the right to change fees and other charges at any time without advance notice.

Educational Fees (1998-99)

All students enrolled in the University must pay an Educational Fee based on either the schedule for Missouri residents or the schedule for nonresidents which follows.

Missouri Residents \$162.60 per credit hour
*Nonresidents \$489.10 per credit hour.

Nonresident Graduate Students

Students who do not meet the residency requirements must pay the Nonresident Educational Fee according to the schedule above. A definition of "residency" is outlined in Tuition and Residency Rules, available in the cashier's office. Students are responsible for registering under the proper residence and paying the proper Educational Fee. They are also responsible for raising any questions if there is a possibility that they are subject to the Nonresident Educational Fee schedule.

Partial Enrollment

Since the Educational Fee owed by a student is on a per-credit-hour basis, the Educational Fee for partial enrollment is assessed according to the above schedule.

Fees for Auditing Courses

Auditors are charged full fees and receive no academic credit.

Application Fee

Effective Winter Semester, 1999, a non-refundable fee of \$25 (\$40 for International Students) by check or money order made payable to The University of Missouri must accompany all first-time applications for Graduate or Undergraduate Student classifications.

Graduate Study

Other Fees

Instructional Computing Fee

Students registered in the University are required to pay an Instructional Computing Fee of \$8.00 per credit hour.

Student Facility and Student Activity Fee

All students registered in the University are required to pay a Student Facility and Student Activity Fee. The fee is calculated at the rate of \$21.80 per credit hour up to a maximum of \$261.60 for 12 credit hours in regular sessions. In the Summer Session, the maximum fee is \$130.80 for six or more credit hours.

The Student Facility and Student Activity Fee is used for programs of broad interest within the University community. The fee for a full-time, regular semester is distributed as follows:

| | |
|--------------------------------------|----------|
| Bond Retirement on University Center | \$115.80 |
| Athletic Program | \$87.60 |
| Student Activities | \$24.36 |
| Student Services | \$5.64 |
| Recreation/Facility Fee | \$28.20 |
| Total (for 12 credit hours) | \$261.60 |

Parking Fees

Students wishing to operate motor vehicles on campus must register them and pay a fee at the time of registration. Failure to comply with traffic regulations may subject students to disciplinary action, payment of an additional fee, and the denial of the privilege to operate a motor vehicle on campus. Copies of Traffic Regulations for the University of Missouri-St. Louis are available at the UM-St. Louis Police Office.

The parking fee for 1998-99 is \$8.00 per credit hour, up to a maximum of \$128.00 for 16 credit hours in the regular semester, for each motor vehicle used by a student on campus. Parking fees in the Summer Session are at the same per-credit-hour-rate up to a maximum of \$64.00 for eight or more credit hours. Students who do not drive regularly may park in the daily parking lot for a fee of \$5.00 a day. Special parking rates are available for car pools. Motorcycle and motor scooter fees are \$4.00 per credit hour up to a maximum of \$64.00 in the regular semester and \$32.00 in the Summer Session.

The revenue from parking fees is used to construct and maintain roads, parking garages, and surface parking; to rent parking space off campus when necessary; to pay for the printing of parking stickers and regulations; and to pay for all other related expenses. Detailed information on parking regulations and fee refunds is available from the cashier's office.

Parking fees are refundable under the same schedule as other fees. Students must return the scraps of the parking sticker to obtain a refund if they decide to cancel parking privileges. See the following "Refund of Fees" section.

Final Semester Educational Fee

Students must enroll in the semester in which they graduate.

Thesis and Dissertation Fee

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

Payment of Fees

All fees are due and payable at the time of registration. Students with delinquent accounts will not be allowed to enroll in subsequent semesters. A minimum payment plan is available for students unable to complete their financial arrangements at the time of registration. Interest will be assessed on the unpaid balance of all students at the rate of one percent per month. More information about this plan is available at the cashier's office.

Personal Checks

Personal checks in payment of fees or other obligations to the University will be accepted only when the amount of the check does not exceed the amount due from the student.

A student, presenting a check to the University that is returned unpaid, shall pay a returned check charge of \$10.00.

Credit Cards

MasterCard, VISA, or Discover credit cards are accepted in payment of fees.

Delinquent Indebtedness

All delinquent indebtedness to the University must be cleared before transcripts or diplomas will be released.

Refund of Fees

A student may be eligible for a refund after completion of fee reassessment having already paid an amount in excess of fee percentage due the University as defined within the "Fee Reassessment for Dropping Classes or Withdrawal from School" section of the schedule of courses flyer.

Graduate Study

Financial Assistance

Teaching Assistantships

Most departments with established graduate programs offer teaching assistantships to qualified graduate students. Appointments are usually half-time appointments and carry stipends. Students receiving assistantships must pay 50% of the Educational Fees required of Missouri residents. Students with these assistantships must register for a minimum of six credit hours in semesters in which they hold the assistantship.

Teaching assistant appointments are made directly by the departments. Inquiries and applications for assistantships should be addressed to the Director of the graduate program of the appropriate department. Applications should be submitted no later than March 15 for the Fall Semester. Occasionally a few teaching assistantships are available for the Winter Semester. Interested students should contact the director of the appropriate graduate program as soon as possible.

Since some departments observe different deadlines, applications should be submitted as early as possible. Appointments are normally announced by April 1 for the Fall Semester and by November 1 for the Winter Semester.

Research Assistantships

A small number of research assistantships are available in some departments and schools. Conditions of appointments are generally similar to those of teaching assistantships. Inquiries should be addressed to the director of the graduate program in the appropriate department.

Fellowships and Scholarships

A small number of doctoral fellowships may be available for graduate students. In addition, certain graduate programs have available a limited number of traineeships, fellowships, or scholarships. For more information contact the director of the graduate program in the appropriate department.

Other Graduate Financial Aid

Contact the Student Financial Aid office for current information on the availability or eligibility requirements for financial aid for graduate students.

Confidentiality Policy

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

The University of Missouri-St. Louis as charged in the Act will annually inform its eligible students by including in the Student Handbook, the Schedule of Courses, the UM-St. Louis *Bulletin*, and the Current (student newspaper) the following information:

1) "Education Records" are those records, files, documents, and other materials which contain information directly related to a student and are maintained by the University. Those records, made available under The Family Educational Rights and Privacy Act of 1974, are student financial aid, the student's cumulative advisement file, student health records, disciplinary records, the admissions file, and the academic record.

Confidential letters and statements of recommendation which were placed in student credential folders at the Office of Career Placement Services after January 1, 1975, are also made available, if the student has not waived the right to view these recommendations.

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

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

2) The University of Missouri-St. Louis recognizes "Directory Information/Public Information" to mean a student's name, address, telephone listing, date and place of birth, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, and the most recent previous educational agency or institution attended by the student. All students must inform the Office of Admissions and Records before the end of the two-week period following the first day of classes that any or all of the information designated as directory information should not be released without the student's prior consent. The information listed above will become directory information or public information as of the first day of classes following the end of the two-week period in a regular semester and the first day of classes following the end of the one-week period during the Summer Session.

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

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

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

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

6) Students desiring to challenge the content of their record may request an opportunity for a hearing to challenge the content of his or her educational record in order to insure that the record is not inaccurate, misleading, or otherwise in violation of the privacy or other rights of the student, to provide an opportunity for the correction or deletion of any such inaccurate,

Confidentiality Policy

misleading, or otherwise inappropriate data contained therein, and to insert into such records a written explanation respecting the content of such records.

- 7) The University official charged with custody of the records will attempt to settle informally any disputes with any student regarding the content of the University's educational records through informal meetings and discussions with the student.
- 8) Upon request of the student or the University official charged with custody of the records of the student, a formal hearing shall be conducted as follows:
 - a) The request for a hearing shall be submitted in writing to the campus chancellor who will appoint a hearing officer or a hearing committee to conduct the hearing.
 - b) The hearing shall be conducted and decided within a reasonable period of time following the request for a hearing. The parties will be entitled to written notice 10 days prior to the time and place of the hearing.
 - c) The hearing shall be conducted and the decision rendered by an appointed hearing official or officials who shall not have a direct interest in the outcome of the hearing.
 - d) The student shall be afforded a full and fair opportunity to present evidence relevant to the hearing.
 - e) The decision shall be rendered in writing within a reasonable period of time after the conclusion of the hearing.
 - f) Either party may appeal the decision of the hearing official or officials to the campus chancellor. Appeal from the chancellor's decision is to the president. Appeal from the president is to the Board of Curators.
- 9) The University of Missouri-St. Louis will mail grade reports only to a student's permanent mailing address. Grades will not be mailed to parents unless the students in question have completed the necessary authorization in the registrar's office.
- 10) The University of Missouri-St. Louis may permit access to or release of the educational records without the written consent of the student to the parents of a dependent student as defined in Section 152 of the Internal Revenue Code of 1954.
- 11) If any material or document in the educational record of a student includes information on more than one student, the student may inspect and review only such part of such material or document as relates to him or her or to be informed of the specific information contained in such part of such material.

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

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

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

Requests for the assessments must be made to the Director of Disability Access Services no later than six weeks prior to the beginning of the next semester. If an unfavorable determination is made, the student may appeal the decision. See Discrimination Grievance Procedure, Appendix.

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

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

Student Financial Aid Programs

The University of Missouri-St. Louis maintains an Office of Student Financial Aid to assist students with the cost of their education. Financial assistance is available in the form of grants, loans, scholarships and work-study. Funds for these programs are available from federal, private, state and institutional resources. To apply for financial aid, students must complete a Free Application for Federal Student Aid (FAFSA). Preference will be given to those students who have completed the FAFSA by April 1st. Preference means that the financial aid office will begin awarding FWS (Federal College Work-study), Federal SEOG (Federal Supplemental Educational Opportunity Grant) and Federal Perkins Loan funds. A completed financial aid application means that the Financial Aid Office has received an official Student Aid Report from the Federal Processing Center.

The Student Financial Aid Office publishes a Scholarship Directory each year. Students can obtain a catalog by writing or stopping by the financial aid office located in room 209 Woods Hall.

To be considered for all University Scholarships offered through the Financial Aid Office, you must be accepted for admission. We will consider you for University Scholarships based on your admission information. Currently enrolled students are considered automatically. Scholarships are awarded on a rolling basis for the upcoming new academic year beginning November 1 of the preceding year.

We encourage students to contact the department in which they are majoring for other possibilities for scholarships.

Library Services

UM-St. Louis Libraries

Joan Rapp, Director of Libraries
M.L.S., Rutgers; M.A., University of Washington;
M.B.A., Southern Illinois University-Edwardsville

Librarians

Amy Arnott, Head, Access Services
M.A., University of Missouri-Columbia
Frances Behrman, Reference Librarian
M.S., University of Illinois-Urbana-Champaign
Clinton Berry, Reference Librarian
M.A., University of Missouri-Columbia
Cheryle Cann, Head, Health Sciences Library
M.A., University of Missouri-Columbia
Mary Doran, Reference Librarian
M.S., University of California-Los Angeles
Judith Friedrich, Technical Services Librarian
M.A.L.S., University of Missouri-Columbia
Ellen Grewe, Head, Technical Services
M.A., University of Missouri-Columbia
John Hoover, Director, St. Louis Mercantile Library at
UM-St. Louis and Associate Director of Libraries for
Special Collections
M.L.S., University of Missouri-Columbia;
M.A., History, Southern Illinois University-Edwardsville
Peter Monat, Reference Librarian
M.A., St. Louis University
M.S., University of Illinois-Urbana-Champaign
Raleigh Muns, Reference Librarian
M.L.S., University of California-Los Angeles
David Owens, Technical Services Librarian
M.A., University of Missouri-Columbia
Frances Piesbergen, Reference
Librarian/Government Documents
M.A., University of Missouri-Columbia
Marilyn Rodgers, Reference Librarian
M.A., University of Missouri-Columbia
John Mark Scheu, Reference Librarian
M.A., A.B.D., University of Kansas;
M.S., University of Illinois-Urbana-Champaign
Helen Shaw, Reference Librarian
M.Ed., University of Illinois-Champaign;
M.L.S., University of Missouri-Columbia
Sandra Snell, Head, Reference
M.A., University of Wisconsin; M.S., University of
Illinois-Urbana-Champaign
Anne Taylor, Reference Librarian
M.L.S., University of Pittsburgh
Virginia Workman, Head, Ward E. Barnes Education
Library
M.A., University of Missouri-Columbia

The University Libraries support the educational objectives of the University and meet the teaching, research, and informational needs of the campus community. Housed in three locations—the Thomas Jefferson Library (North Campus), the Ward E. Barnes Education Library and the Health Sciences Library (both on South Campus)—the Libraries' collections consist of more than 845,000 volumes, 2,900 periodical subscriptions, one million U.S. Government documents, and over one million items in microform. Effective March 3, 1997, the St. Louis Mercantile Library became part of the UM-St. Louis Libraries. This collection will move to the Thomas Jefferson Library in early 1998.

Materials from all University of Missouri libraries can be identified through MERLIN, the online catalog. Interlibrary Loan provides fast delivery of materials from other libraries across the country. Many automated databases are available, in both online and CD-ROM formats.

The libraries are open more than 85 hours per week during regular sessions. Specific hours for various library services are posted in all libraries.

Western Historical Manuscript Collection and University Archives

Archivists

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

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

The Archives contain official records, campus publications, student newspapers, photographs, and other material on the history of the University of Missouri-St. Louis.

Located on Level II in the Thomas Jefferson Library, the office is open for reference service Monday through Friday, 8 am to 4:45 p.m. and until 9 p.m. on Tuesday. Archival and manuscript material does not circulate.

University Center

The University Center houses University food services, the Bookstore, Nations Bank, University Center, and Student Activities administrative offices and meeting rooms. Student government offices and the Black Culture Room are also located in the University Center. Lounge space provides a comfortable environment for relaxation or study and a TV room and amusements area provide places for recreation.

University Center Funding

At the University of Missouri-St. Louis, as is the case with the majority of universities and colleges, students themselves made the financial commitment necessary to construct the University Center and administer its functions. Every semester a Facilities Fee is collected from each student. This money is used to retire the bonds which were originally sold to raise the \$2,000,000 spent in construction. In addition, some money is spent on administering the facility and some is set aside for major repairs and replacements. (All student money collected for the building is used to support it.)

Food Services

The University Center's dining area features a "food market" or "scramble-type" food service in the lower level Underground, offering customers a complete menu selection ranging from popular fast-food items to hot meal service, between the hours of 7:30 a.m. and 7:00 p.m., Monday through Thursday, and 7:30 a.m. to 2 p.m. on Friday. The upper level Summit is designed as a comfortable lounge-dining area, with vending service available for those seeking snacks or beverages.

Complete catering services are also available and may be arranged through the reservations office in room 267 of the University Center.

Audiovisual Services

The University Center can provide rental audiovisual equipment for student organizations and campus departments scheduling events in the University Center and J. C. Penney Building only. Equipment includes 16mm, slide, and overhead projectors; record and tape players; a 1/2" and a 3/4" VHS player/recorder with a 25" color monitor; lecterns and portable sound systems. Experienced operators are also available for an additional charge.

Bookstore

In addition to the programs and services listed above, the Bookstore is located in the University Center and is headquarters for ordering and selling textbooks and supplementary reading materials, including paperback books. The Bookstore also sells class and study supplies, college jewelry, and insignia items. Commencement announcements, caps, and gowns are ordered through the Bookstore.

Division of Student Affairs

Office of the Vice Chancellor for Student Affairs

The Office of the Vice Chancellor for Student Affairs, located in 301 Woods Hall, 516-5211 (voice) or 516-5212 (TDD) offers assistance and a wide variety of services to students. The office is responsible for administering the Student Conduct Code, confidentiality of student records, and Discrimination Grievance Procedure for Students.

The **Director of Disability Access Services** is located in the Office of the Vice Chancellor for Student Affairs, 301 Woods Hall. This staff member provides information, guidance, referral services, and assistance for students with disabilities. Special arrangements and assistance in providing for the accessibility needs of students in providing for the accessibility needs of students with permanent or temporary disabling conditions are available through this office. A TDD is provided for individuals with a hearing impairment. For more information or questions, call 516-5211 (voice) or 516-5212 (TDD).

The Division of Student Affairs was awarded a federal grant to provide specialized educational services to students with disabilities through the TRIO program, Student Support Services. This office is located in 121 Woods Hall, telephone 516-6554 (voice) or 516-5212 (TDD). Applications for these services are available in the office or you may call to request an application by mail.

Admissions

The Admissions Office is located in 101 Woods Hall, 516-5451. Admissions is generally the first point of contact for prospective students who require information and assistance as they go about the planning and college decision process. The Office of Admissions arranges tours of campus, sponsors open houses throughout the year for both first-time freshmen and transfers, and processes admission applications. Prospective students and families as well as applicants can arrange to meet personally with admission counselors. Counselors can provide information on applying for financial aid and scholarships, placement tests, new student orientation, and academic advisement.

Registrar/Registration/Records

The Office of the Registrar is located in 232 Woods Hall, 516-5545. This office is responsible for registration, academic records, grades, transcripts, enrollment verification, Veterans certification, change of name and/or address, I.D. cards, MetroLink authorizations, ordering diplomas, and many other enrollment-related services. No appointment is needed for service, and hours are convenient to both day and evening students.

The **Degree Audit** office, located in Seton Center, 516-6814, was established to provide students, faculty, and advisors with a summary of a student's progress towards academic requirements. This record is very useful in planning a major, tracking graduation requirements, and investigating other areas of study. Academic advisors have access to this information, and are available to assist students in interpreting the degree audit record.

Student Financial Aid

The Office of Student Financial Aid is located in 209 Woods Hall, 516-5526. The staff in this office assist students with applying for financial aid, including scholarships, grants, loans, and work study. The office is open various hours to accommodate both day and evening students, and appointments for some services are strongly encouraged. Do not hesitate to call for further information.

Office of Residential Life On campus housing is available to students year round. The Office of Residential Life offers air conditioned furnished residence halls, in which 98% of rooms are singles. It is possible for students to live in the halls throughout the year. Rates for the residence halls include all utilities, local phone service and a tax exempt declining balance board plan. The University Meadows is a privatized complex offering efficiencies, one- and two-bedroom units. Nine and twelve month leases are available. A variety of amenities are available in all housing choices, including swimming pool, laundry facilities, recreational facilities, and data communications hook-ups in each room.

A variety of social, cultural, and educational programs and activities are offered by the Office of Residential Life and the Residence Hall Association (RHA), which serves as the residence hall student government. The "Spirit of St. Louis" Series provides opportunities for students to enjoy many of St. Louis's most popular attractions and venues. Residential students are also active in intramurals, student organizations, and other campus activities. For more information on residential choices or to schedule residence hall tours, call 516-6877 or visit the Office of Residential Life in Honors Hall. Information on apartment leases and tours may be obtained by contacting University Meadows at 516-7500.

Counseling Services Counseling Services offers professional counseling regarding personal, social, educational, and career concerns. Services include individual and couple's counseling, a range of psychoeducational workshops and groups, as well as career testing and career development counseling. Counseling Services also provides consultation to faculty and staff.

Division of Student Affairs

Our "Career Resource Center" includes a well stocked library of career related materials and SIGI PLUS, a computer-based interactive career exploration and decision-making program. Use of the Career Resource Center is free. There is a small fee for career testing.

Counseling Services houses the "Helping Hand" African American student mentoring program and the "Horizons" undergraduate peer educators. We also provide training and supervision for graduate student interns. For information about participating in any of these programs, call 516-5711.

The Counseling Services' receptionist will arrange an appointment with a counselor or to use our computer programs. There are some evening appointments available for Evening College students. In an emergency, students can be seen almost immediately. For more information, call 516-5711 or visit Counseling Services office at 427 SSB. Visit our web site: <http://www.umsl.edu/services/counser>

Horizons Peer Educators Horizons is a student group in Counseling Services that is dedicated to educating and informing the students about a variety of personal and academic issues. The peer educators distribute useful information throughout the year and present programs and workshops on topics such as alcohol awareness, time management, career exploration, and stress management.

Horizons' peer educators are trained and supervised by Counseling Services professional staff. Peer Educators assist students researching information on career options or academic majors in the Counseling Services' Career Resource Center. They also instruct students on the use of SIGI PLUS, a computerized career exploration program, and two computer programs (CASSI and SBI) which assist students in the development of academic skills. Horizons is housed in Counseling Services' office which is located in 427 SSB. Their phone number is 516-5730.

Women's Center The Women's Center serves as an educational resource center offering an information and referral service, advocacy, programs on women's issues and , cultural events, a library of literature by and about women, topical resource files, and information on women's activities, networks, organizations, and services in St. Louis.

Located in 211 Clark Hall, the Women's Center is a good place to get support and assistance in coping with sexual harassment, help in doing research on women, and answers to questions about almost anything. The

Center is also a good place to relax, drink coffee, and share ideas and experiences with other UM-St. Louis students in a comfortable atmosphere.

There are opportunities for students to get involved at all levels in the activities and work of the Women's Center, which is open full time, Monday through Friday; evening hours vary by semester. The coordinator of the Women's Center directs the campus-wide orientation program so students can become acquainted with University rules, procedures, and services. For more information call 516-5380.

The Student Emergency Contact Form has been developed by the Center for students who may need to be contacted in emergency situations. This service is especially useful for students who are parents. Call the Center or stop by and complete an Emergency Contact Form.

Career Services

Job and career services are available to all UM-St. Louis students and alumni. You may call 516-5111 for an appointment or stop by 308 Woods Hall for career information.

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

Computerized Registration

Our state-of the art system allows you to use our services quickly and easily. Our personal Resume Expert software is IBM compatible and enables you to become a member of our Candidate Database, display your resume in our WebResumeBook to hundreds of local and national employers, produce professional targeted resumes, and compose cover letters and thank you letters.

Candidate Database

As a member, your qualifications and experience may be quickly matched with job vacancy listings. Your Resume Expert resume will be sent directly to the employer.

www.umsl.edu/dept.career/

Check our WebHomePage frequently for general information about Career Services, upcoming job fairs, Career Days and other special events, the on-campus interviewing schedule, direct links to company information, job banks, career resource materials, and self-assessment exercises. Our WebJobListings service has hundreds of current position vacancies listed daily by employers.

Division of Student Affairs

Career Mapper

This career development tool gives you a thorough analysis of your abilities, interests, and personality traits, creating a picture of who and what you are and how you can best fit into the job market. Career Mapper can help if you are confused about your career direction or just need validation that you are moving in the right direction.

Career Experience & Employment Program

Explore these opportunities if you need a job to help with your expenses, or would like a degree-related position to give you a competitive edge in the job market. Jobs may be part-time, full-time or summer positions, and, if your work is related to your academic major, you will receive a transcript notation. Use this program to "test drive" your career decision.

Federal Financial Aid Work Study Program

You may be eligible for a work study job if you are eligible for federal financial aid. These positions are designed for you to gain valuable experience and develop new skills. On-campus job opportunities allow for a flexible work schedule while attending classes. Off-campus community service positions provide a unique opportunity for you to make a valuable contribution to the St. Louis community.

Career Assistance Program

This job search program can assist with career management decisions, career transition, or job change questions. It offers you the incentive to manage your career with positive results, enables you to evaluate your skills, interests and traits, and provides structure, guidance, and motivation in your job search.

Career Services hours are Monday and Tuesday, 8 a.m. to 7 p.m., and Wednesday, Thursday, and Friday, 8 a.m. to 5 p.m. For more information, call 516-5111.

Student Activities

Office of Student Activities: E-Mail:
stuactv@umslvma.umsl.edu
Web Page: www.umsl.edu/services/stuactv

The Office of Student Activities, 267 University Center, advises and serves as a facilitator for the programs and services provided to one hundred twenty (120) recognized and registered student organizations at the University of Missouri-St. Louis. The Director of Student Activities serves as a non-voting chairperson for the Student Activity Budget Committee which allocates operating budgets to organizations approved for funding.

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

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

Organizations

There are approximately 120 student organizations at UM-St. Louis ranging in size from three to 50 members. The scope of their activities address the educational, cultural, social, recreational, and spiritual co-curricular needs of the campus community.

Social fraternities and sororities, performing and fine arts, curriculum-related support groups, ice hockey, bowling, and other special interest clubs exist to enhance the collegiate experience. The Associated Black Collegians, International Students Organization, and the Women's Center exist as resources for students on campus.

Information regarding student organizations is available in Room 267 of the University Center. Specific organizations may be contacted by mail through the same address.

The University Program Board, a 15-student volunteer group, initiates and implements a variety of lectures, appearances by comedians, and musical groups throughout the year. The Board also sponsors games, tournaments, and discounted tickets for local sporting events, concerts, and theatre. Most campus events are free to the campus community and are subsidized by student activity fees. Membership in this organization is open to students who are interested in coordinating these types of programs. Information is available by calling 516-5291 or by stopping by the Office of Student Activities in Room 267 University Center.

Housing Referral

The University Center/Student Activities Office maintains a list of available apartments, rooms, and flats in the North County area. Lists of persons requesting roommates are also available.

Division of Student Affairs

University Health Services (UHS)

University Health Services, an ambulatory care clinic, located in 127 Woods Hall, offers wellness through care and education. Some of the basic health services offered are treatment of minor injury and illness, screening exams, strep throat testing, pregnancy testing, tuberculin skin testing, urinalysis, and allergy injection. Care is provided by a Nurse Practitioners and Registered Nurses. Consultation is offered on a variety of issues and concerns, such as nutrition and diet management, sexually transmitted diseases, contraception, wellness assessment, and health promotion. Additionally, consultation is available to clients with chronic health problems (such as asthma, diabetes, and others) in assisting with health problem management. Specialty clinics (such as women's health, flu shots, etc.) are available at specific times during the year. Educational materials on a variety of health related topics are available in the UHS office. Educational outreach programs addressing current health issues and needs are also offered through UHS. Assistance with referral to medical facilities is provided upon request and when deemed necessary.

The University requests that students born after 1956 provide documented proof of immunity to measles and rubella, through current immunization records or disease documentation by a physician. Immunization records may be sent to University Health Services.

Information, application and claim forms for the Student Accident and Sickness Insurance Plan are available at the UHS office. Validation for handicapped parking is handled through UHS upon presentation of medical documentation verifying a disability that impairs mobility. Automobile information and license plate number is also necessary to obtain verification for Handicapped Parking.

University Health Services is open Monday-Thursday 8:00 a.m. until 8:30 p.m. and Friday 8:00 a.m. until 5:00 p.m. Generally there is no charge for services; however, selected screenings, tests, and services may be offered on fee-for-service basis. To make an appointment, or for further information, call 516-5671. For a medical emergency on campus call 911.

Drug and Alcohol Prevention Program

Pursuant to the Drug-Free Schools and Communities Act Amendments of 1989, the University of Missouri-St. Louis is required to establish a drug and alcohol prevention program for its students and employees. A biennial review of this program will be done to determine its effectiveness, to implement changes to the program if they are needed, and to ensure the University's disciplinary sanctions are consistently enforced.

Standard of Conduct University of Missouri regulations prohibit the unlawful possession, use, distribution, and sale of alcohol and illicit drugs by University students and employees on University-owned or controlled property and at University-sponsored or supervised activities.

Legal Sanctions: Local, state, and federal laws also prohibit the unlawful possession, use, distribution, and sale of alcohol and illicit drugs. Criminal penalties for violation of such laws range from fines up to \$20,000 to imprisonment for terms up to and including life.

University Discipline Violation of these University of Missouri regulations can result in disciplinary action up to and including expulsion for students and discharge for employees.

Health Risks Specific serious health risks are associated with the use of illicit drugs and alcohol. Some of the major risks are listed below.

Alcohol and Other Depressants (barbiturates, sedatives, and tranquilizers) Addiction, accidents as a result of impaired ability and judgment, overdose when used with other depressants, damage to a developing fetus, heart and liver damage.

Marijuana: Addiction, panic reaction, impaired short-term memory, increased risk of lung cancer and emphysema (particularly in cigarette smokers), impairment of driving ability.

Cocaine: Addiction, heart attack, seizures, lung damage, severe depression, paranoia, psychosis. Similar risks are associated with other stimulants, such as speed and uppers.

Hallucinogens (acid, LSD, PCP, MDMA, etc.): Unpredictable behavior, emotional instability, violent behavior, organic brain damage in heavy users, convulsions, coma.

Narcotics (heroin, Demerol, Morphine, Codeine, etc.): Addiction, accidental overdose, risk of hepatitis and AIDS from contaminated needles.

Division of Student Affairs

Inhalants (gas, aerosols, glue, nitrites, etc.): Loss of consciousness, suffocation, damage to brain and central nervous system, sudden death, nausea and vomiting, nosebleeds, impaired judgment.

Resources: A variety of resources exist for drug or alcohol counseling, treatment, or rehabilitation programs. For detailed information concerning these resources available from the University and/or community agencies, students, employees, and faculty may contact the offices below. Such referrals will respect individual confidentiality. The UM-St. Louis Drug and Alcohol Prevention Program is described in a brochure. To obtain the brochure and more information, contact: Counseling Service, 427 Social Sciences and Business Building, 516-5711; Student Health Center, 127 Woods Hall, 516-5671; Office of Human Resources, 211 General Services Building, 516-5804; or Vice Chancellor for Academic Affairs, 407 Woods Hall, 516-5371.

Smoke-Free Campus Policy of UM-St. Louis

Effective June 1, 1991, smoking is prohibited throughout the University of Missouri-St. Louis campus.

Student Government

The purpose of the Student Association is to represent University of Missouri-St. Louis student concerns at every level of governance within the University and at the state and local level. This is done by ensuring adequate and capable student representation within the University Senate, the policy-making and governance body of the University of Missouri-St. Louis. In addition, Student Government, the policy-making arm of the Student Association, has its own standing committees to address student concerns.

On the local and state levels, Student Government leaders visit various officials to address student concerns and priorities throughout the year.

An educated, qualified, well-rounded individual is the desired result of a college education. The University of Missouri-St. Louis Student Association, in its capacity as representative of and advocate for students, plays an important role in developing such individuals.

For more information call 516-5105 or drop by 262 University Center.

The Student Court is nominated by the Student Assembly and appointed by the Vice Chancellor for Student Affairs. The five-member Court rules on student appeals concerning matters such as parking violations and disputes between individuals and organizations; organizations and organizations.

The Evening College Council serves the evening student body as a liaison between students, faculty, and administrators. It functions as a sounding board for Evening College students' ideas and interests, and it coordinates social activities of special interest to evening students. Membership is open to all Evening College students who are in good standing. Contact the Evening College, 324 Lucas Hall, at 516-5162 or any council member for more information.

Senate

The Senate is the governing body of the campus. Its membership includes 75 faculty members, up to 25 students, the campus's top-ranking administrators, and other ex officio members.

Students are elected to the Senate in the winter semester, and they are required to file their candidacy in advance of the election. The filing deadline and election dates are widely publicized on the campus. The number of student senator seats is dependent on the number of eligible candidates filing for election, but the maximum number of seats available to students is 25.

To qualify for service on the Senate, a student must be enrolled in good standing, must not be on disciplinary probation, must have a cumulative grade point average calculated by UM-St. Louis to be at least 2.0, and must have completed a minimum of nine hours of academic credit on this campus.

The Senate has a number of standing committees which include student members. They are Budget and Planning; Bylaws and Rules; Committee on Committees; Computing; Curriculum and Instruction; Executive Committee; Faculty Teaching and Service Awards; International Relations; Physical Facilities and General Services; Recruitment, Admissions, Retention, and Student Financial Aid; Student Affairs; Student Publications; University Libraries; University Relations; and Video and Instructional Technology. The Senate establishes ad hoc committees as needed, and these committees sometimes include student members.

To qualify for service on Senate committees, students must satisfy the eligibility requirements stated above.

For additional information about the Senate or Senate committees, students may contact Joan M. Arban, the Senate's Executive Assistant, at 516-6769.

Sports

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

Intramural activities currently offered include touch football, basketball, volleyball, swimming ("Swim the Mississippi River Club"), racquetball, golf, tennis, bowling, softball, hoc soc, fun run, soccer, and weight lifting. For more information call 516-5125.

Intercollegiate Sports A variety of intercollegiate sports are available for both men and women at UM-St. Louis.

The Rivermen and Riverwomen compete at the NCAA Division II level and are members of the Great Lakes Valley Conference.

The women's intercollegiate athletic program includes basketball, soccer, tennis, volleyball, golf, and softball. The men's intercollegiate athletic program includes basketball, soccer, golf, baseball, and tennis. Scholarships are available for both men and women in all sports.

Both the men's and women's athletic teams have brought both local and national recognition to the University for more than 20 years, with one national championship and trips to the NCAA Tournament in at least one sport in 19 of the last 21 years.

UM-St. Louis students with validated IDs are admitted free to all home athletic contests.

For more information about Intercollegiate Athletics, please call 516-5661.

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

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

The Student Association of the University of Missouri-St. Louis is the student governance body

composed of both elected student representatives from each School and College, and of organizational representatives from every recognized student organization which petitions for representation on the Assembly.

Other Services

Alumni Relations Office

UM-St. Louis alumni, now numbering more than 50,000, not only help shape the future of the University, but the entire St. Louis region. The Alumni Association and the Alumni Relations offices are located at 7952 Natural Bridge Road, across the street from the main campus entrance. The two work together to promote the St. Louis campus and build mutually beneficial relations between the University and its alumni. Membership in the Alumni Association is open to all graduates and former students with payment of modest dues.

The **Alumni Association** sponsors a scholarship fund for UM-St. Louis undergraduates, provides special funding of certain campus projects, and works as an organization to obtain increased public support for the University. For more information, call 516-5833.

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

Gallery 210

Gallery 210, located in 210 Lucas Hall, sponsors five major art exhibitions yearly. These include professional work of national and international importance in all media, with a primary emphasis on contemporary art. In conjunction with these exhibits, the Gallery frequently sponsors symposia, lectures, and other events which enhance the impact of the works of art that are displayed.

Under the auspices of the Department of Art and Art History, the exhibits offered by the Gallery meet the best of both educational and aesthetic standards, and serve the visual interests of both the metropolitan community and the University's students and staff.

Police Department

The UM-St. Louis Department of Police is located in the Tele Community Center and serves the students, faculty, and staff by providing year-round campus security. The UM-St. Louis police are trained to give emergency aid in the event of accident or illness, and all incidents should be reported immediately to the

Other Services

police department, telephone 516-5155. This number is monitored 24 hours a day. Call for help or to report fire or any existing hazardous conditions. Emergency telephones on campus include the red "Hot-Line" phones, which are located in every building. In addition, there are a number of outdoor emergency phones that connect directly to the police dispatcher.

Traffic regulation is also a responsibility of the campus police, including issuance of faculty/staff parking permits and any temporary parking permits. These permits may be picked up at the police department office. Informational booklets on traffic regulations and parking, as well as campus maps, tips on crime prevention, and other useful publications are available outside the police department office.

The department has an ongoing bicycle registration program, offering registration tags to students, faculty, and staff. A registration file with bicycle serial numbers and description is maintained for each registrant. Also available during normal working hours the University provides limited emergency vehicle service, at no charge, to vehicles on campus except for fuel. Any person requiring such service (due to dead battery, empty fuel tank, flat tire, etc.) should phone the University Police for assistance. An escort service to your car is available 6 p.m. to 11 p.m., Monday through Friday, by calling 516-5155.

The UM-St. Louis police report and investigate all crimes that occur on campus.

For information on any of these services, contact the University of Missouri-St. Louis Police by calling 516-5158, Monday through Friday, 8 a.m. to 5 p.m. For emergencies, remember to call 516-5155.

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Research

Center for Business and Industrial Studies

The Center for Business and Industrial Studies is organized within the School of Business Administration for studying managerial problems and performing applied research. The Center operates on a not-for-profit basis, helping organizations nationwide to understand factors affecting their business environments and to enhance their productivity. University faculty, supported by powerful computer systems, statistical databases, and sophisticated software, provide multi-disciplinary consultation in a wide variety of business applications. Studies are undertaken in computer systems, operations management, human resources management, planning and business development, facilities location, distribution, marketing, and financial analysis. Organizations contract with the Center for studies tailored to their specific needs. A brochure outlining the Center's services can be obtained by writing the Center for Business and Industrial Studies School of Business Administration University of Missouri-St. Louis 8001 Natural Bridge Rd. St. Louis, MO 63121-4499, or by calling (314) 516-5857.

Center for Entrepreneurship and Economic Education

The Center for Entrepreneurship and Economic Education is sponsored by the College of Arts and Sciences and Continuing Education-Outreach to support and enhance economic education in elementary and secondary schools. The Center provides in-service programs in economic education to area teachers. Working closely with local school districts, the Center serves to improve and evaluate present economics curriculum. The Center develops and publishes curriculum units for K-12 classrooms. Entrepreneurship education is another focus for Center activities. The Center also promotes the goals of entrepreneurship and economic education among business, professional, educational, labor, and other organizations and individuals in the St. Louis community.

Center for International Studies The Center for International Studies supports academic programs, seminars, and conferences designed to promote and improve research in international studies, improve the methods of teaching international studies in schools and colleges, and encourage an interest in international affairs in the University and area communities. The Center's Office of International Student Services coordinates and provides services for international students including admissions, immigration, orientation, non-academic advising, etc. In addition, the Center administers the campus

Exchange and Study Abroad programs and disseminates information on study, work, and travel abroad. The Center promotes the development of interdisciplinary and multidisciplinary courses, assists in staffing courses within individual departments, houses the Joint Center for East Asian Studies of

UM-St. Louis and Washington University, the Karakas Family Foundation Alliance for the Advancement of Hellenic Studies and the Endowed Professorships in Chinese Studies, Greek Studies and Irish Studies. It conducts seminars that address specific faculty and student needs and interests, sponsors conferences for academic and community audiences, organizes international business development programs, issues occasional papers, administers undergraduate certificate programs in Africana studies, East Asian studies, European studies, international business, international studies, and Latin American studies and the Graduate Certificate in International Studies. In addition, the Center's Community Education Office serves pre-collegiate educators statewide through the Missouri International Studies Resource Collection and operates a comprehensive global education program.

Center for Molecular Electronics Molecular electronics lies at the cutting edge of recent developments in the study and application of thin-film materials, in the growth of semiconductor device material, in the fabrication of electronic sensors and devices, and in the development of high-performance polymers. In all of these areas, knowledge and control at the atomic or molecular level is essential for state-of-the-art materials and devices. In recognition of the critical importance of research, education, and industry-university cooperation in these areas, the University of Missouri-St. Louis has established the Center for Molecular Electronics. The goals of the Center are both research at the forefront of the field of molecular electronics and assistance in the development of high-technology products by St. Louis area corporations.

To encourage cooperation between university and corporate scientists and engineers, the membership of the Center includes physicists, chemists, and engineers from the following St. Louis-based institutions: University of Missouri-St. Louis, Washington University, MEMC Electronic Materials, and Monsanto Company. Through the shared expertise, equipment, and facilities, the Center will investigate the following technological areas: (a) Organometallic Vapor Phase Epitaxy; (b) Plasma Chemical Vapor Deposition of Diamondlike Carbon Films; (c) Electro-Optics of High Performance Polymers; (d) Nanometer-scale Lithography; (e) Electro chemistry of Sensors; (f) Gallium Aluminum

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Center for Neurodynamics

This Center sponsors basic research on the transmission and processing of information by the brain and the sensory nervous system. The research functions are performed largely by faculty, graduate students and postdoctoral research associates, though exceptionally talented and motivated undergraduate students also make valuable research contributions. The Center is interdisciplinary, being composed of faculty from the Departments of Biology and Physics and the School of Optometry. It maintains a program of external Associates with whom collaborative research projects are pursued. Current Associates are in Baylor College of Medicine, Houston, Texas; the Department of Biomedical Engineering, Boston University, Boston, MA and Viatch Imaging, Inc. of Ivoryton, CT. The research focus underlying all projects is on the role of random processes, or "noise", and chaos in the detection of weak environmental stimuli and the processing of information within small networks of neurons and within the brain. The Center is host to frequent scientific visitors and maintains an active program of seminars on contemporary problems in neuroscience and in the physics underlying neural processes. The Center was created by a University Research Initiative grant from the Department of Defense through the Office of Naval Research, which provides ongoing financial support for its research projects. For further information please consult the URL <http://natasha.umsl.edu>

Center for Science and Technology

The University of Missouri-St. Louis Center for Science and Technology was established in 1987 to serve as a resource broker between the University of Missouri-St. Louis and the St. Louis scientific community.

The Center fosters research collaboration and provides customized postbaccalaureate programs on technological advances for the almost 40,000 scientists and engineers in the St. Louis area, and for science educators, corporate managers, and for top-level executives. The Center also promotes citizen awareness on technological trends and issues, linking University projects with organizations such as the St. Louis Science Center and the National Center of Environmental Information and Technology.

International Center for Tropical Ecology

The International Center for Tropical Ecology promotes education and research concerning the study of biodiversity, conservation, and sustainable use of tropical ecosystems. It was established to centralize the activities of faculty at UM-St. Louis and researchers at the Missouri Botanical Garden who specialize in

ecology, evolution, systematics, and conservation biology. A major priority of the International Center is to provide funding for international and United States graduate students interested in tropical ecology and conservation who are enrolled in the cooperative graduate program between UM-St. Louis and the Missouri Botanical Garden. The International Center for Tropical Ecology sponsors multidisciplinary lectures and symposia on biological, political, and cultural issues related to tropical ecology. The International Center for Tropical Ecology also provides funding and assistance to the undergraduate certificate in Conservation Biology which focuses on Missouri conservation and the graduate certificate in Tropical Biology and Conservation. These certificate programs are administered by the Department of Biology. By supporting talented international and United States graduate students and by attracting visiting scholars in ecology, evolution, systematics, and conservation biology, a major goal of this Center is to create an intellectual atmosphere that can contribute to the solutions of our global crisis concerning the destruction of tropical ecosystems.

Inter-University Consortium for Political and Social Research

The consortium, an academic partnership between the University of Michigan Center for Political Studies and more than 350 colleges and universities in the United States and abroad, is an interdisciplinary, inter-university research and training facility for both students and faculty in the social sciences. Through various consortium archives, students and faculty have direct access to a variety of multipurpose data of a socio-political nature that may serve a variety of research and training needs. The Office of Computing provides data-processing services for consortium resources. Students and faculty are also eligible to participate in the consortium's summer training program, a series of intensive eight-week courses of interdisciplinary work for historians, political scientists, sociologists, and other social scientists.

Office of Computing

Computing facilities at the University of Missouri provide access to powerful computing resources, which are available to students, faculty, and staff for educational, research, and administrative needs. Access to local facilities is provided at no cost.

Hardware on the UM-St. Louis campus, used primarily for academic computing, includes two Sun Sparc 1000 class systems, an HDS EX31, Apple Macintoshes, and

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a variety of Windows compatible systems. These systems are housed in computing labs and Advanced Technology Classrooms located throughout the campus. TCP/IP dial-up access is provided. UM-St. Louis is part of the University of Missouri Computer Network, the Missouri Research and Education Network (MOREnet), and the Internet.

Advanced Technology Classrooms (ATC's) are available in the Computer Center Building. Each room is equipped with a state of the art projection system and a computer at each student desk. Two rooms contain Apple Macintoshes, three rooms are equipped with Windows systems and the remaining room has Sun workstations. One ATC, equipped with Apple Macintoshes, is available on the South Campus. Another ATC with Windows systems is located in SSB.

Media-enhanced lecture halls are available in Lucas and Stadler Halls. These rooms are equipped with Windows projection systems, and Macintosh computers for the instructor.

Staff provides consultation, programming, error analysis, and operations services. Data entry services are available from an outside vendor. Noncredit short courses are taught during the fall and winter semesters on a wide variety of microcomputer and mainframe topics. Microcomputers, peripherals, and software are available for purchase at substantial discounts in the bookstore.

University Computing Services operates an IBM 3090 which supports the University's administrative applications.

The office telephone number is 516-6000. Questions concerning open student labs and general information should be directed to the Help Desk at 516-6034.

Office of Research Administration

The Office of Research Administration provides services to faculty, graduate students, and staff for obtaining external support for research, instruction or public service programs. Services include providing information, application materials and instruction for submitting proposals, assisting in developing project budgets, contract negotiations, and fiscal monitoring of awards. The ORA is responsible for administering grants and contracts from federal, state, and local government programs, and grants awarded by private foundations. The ORA works together with faculty committees to award and administer internal research grants. Administrative support is provided to committees charged with monitoring University compliance with various federal and state regulations concerning

research. The ORA provides on-line information through its home page (<http://www.umsl.edu/services/ora/>).

Urban Information Center

The UIC is a specialized unit of the Office of Computing. The UIC specializes in applications programming related to U.S. Census and other public data. Using the SAS software package, the UIC maintains one of the larger public data archives in the country, specializing in data from the U.S. decennial censuses. This archive is accessible via the WWW using custom interface applications developed and maintained by the Urban Information Center. For more information about UIC resources and services you can visit their home page on the WWW at <http://www.umsl.edu/services/uic>. The UIC is a cost recovery unit that develops and sells data products and services. Access to their database via the web is currently free, however. As a core agency of the Missouri State Census Data Center (MSCDC), the UIC periodically offers workshops and participates in conferences where information is presented related to demographic and economic data resources, web access tools, and the status of state and federal data collection and dissemination programs.

One of the areas in which the UIC has developed special expertise is in working with geographic data and with GIS (Geographic Information System) technology. They provide services to link user address files to census geographic areas, such as census tracts and blocks, and then to the census data related to those geographic areas. They specialize in producing large (up to 36"), high quality computer-generated maps using their GIS software package. Typically, these maps involve thematic display of census data and/or of client-provided data that has been linked and aggregated to census geographic units by the UIC.

Public Service

Center for Excellence in Metropolitan Education

The Center houses large, innovative school-based programs and projects which are designed to enhance K-12 learning and instruction, especially in mathematics, science, and communication skills. Such programs and projects usually involve several school districts, many schools within the districts and other outside agencies, as well as several academic and service units within the University which are involved in the delivery of the projects. Support for the projects is provided principally by the University, but with important supplementary funding by major corporations and federal grants. Projects presently housed in the Center include the Bridge Program; the Access to Success Program; The Junior Science, Engineering, and Humanities Symposium; and Youth Employment and

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Career Development Program; the Key Work Force 2000 Program; the Human Services Unit; the Reading Clinic; and the Citizenship Education Clearing House.

Child Development Center

The Child Development Center, located in the South Campus Classroom Building, room 130, on the South campus, 7800 Natural Bridge Rd., provides quality day programs for children of student, faculty, staff, and community families. The program operates from 7 a.m. to 5:30 p.m., Monday through Friday, year round. This program serves children from six weeks to five years of age. Plan ahead as the Center usually fills quickly.

The Child Development Center also provides University students with observation, participation, research and similar educational and clinical opportunities. Please contact the Center at 516-5658 for additional information.

Adult Day Services Center

The Adult Day Services Center, 8351 S. Florissant Road, is an adult day health care facility for adults who need supervision during the daytime. Professional services include nursing, social work; recreation, music and physical therapy. There is a Special Care Unit for persons with advanced dementia. Practicum and research opportunities are available to students and faculty. The Center is open Monday through Friday from 6:30 am to 6:00 p.m. The Mid-East Area Agency on Aging is a major cooperating agency. Call 524-0155 for further information.

Center for Humanities

The Center for the Humanities has two major objectives: to provide visibility and focus for humanities activities at UM-St. Louis and to attract and channel resources for the support of interdisciplinary humanistic inquiry. To this end the Center sponsors a variety of conferences, symposia, and lectures. Over the last several years, the Center has sponsored a conference entitled, "What is a City?", which examines the structure and social environment of cities and their effects on social and cultural diversity. The Center for the Humanities also sponsors the Monday Noon Cultural Series throughout the academic year, which features a variety of lectures and musical performances every Monday at 12:00 noon. The Center supports and coordinates the Poetry and Writing Series, which features contemporary authors reading their works. In addition the Center houses and funds the major, international journal *Theory and Society*, a refereed, interdisciplinary journal of social theory and practices, published by Kluwer Academic in The Netherlands. The Center disseminates information on the humanities on its web site and promotes the development of

interdisciplinary outreach courses.

KWMU

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

Public Policy Research Centers

The Public Policy Research Centers are the focal point of the university's activities in basic and applied policy research. The Centers provide a variety of research services to local governments and agencies, state policy makers, and nonprofit organizations. The Centers have recently been actively engaged in research on local and regional economic development, housing and homelessness, natural resources and environmental protection, children at risk, racism and cultural diversity, crime and drugs, education, international competitiveness, and state revenue policy.

The Public Policy Research Centers also promote basic policy research through its support of faculty fellows. Drawn from a variety of disciplines such as economics, criminology, political science, business, and education, fellows receive reduced teaching loads to support their research projects and efforts to disseminate knowledge in the community through conferences, seminars, etc. Although not offering regular courses or degrees, the Centers serve as a policy laboratory for a number of graduate students participating in research activities.

The Centers coordinate educational programs for the community, research opportunities for faculty, and unique learning experiences for students. Services include survey research, applied policy analysis, program evaluation research, economic assistance projects, community outreach and education programs, policy leadership development, and dissemination and publication of research that addresses critical public policy issues. The Centers produce reports, a newsletter, and publications.

The Centers combined four productive research units: the Center for Metropolitan Studies (CMS); the James T. Bush, Sr., Center for Law, Social Change and Conflict Resolution (the Bush Center); Public Policy Extension/Survey and Applied Research (PPE/SAR); and the Institute for Policy Leadership (IPL) at UM-St. Louis. The fellows, research staff, and graduate students of all four units work in concert on major

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research projects that address particular needs of the St. Louis region.

The Center for Metropolitan Studies conducts research on urban problems, offers training experiences for students in urban research, and provides information to the St. Louis metropolitan area for aiding community groups and civic leaders in dealing with significant regional problems.

The James T. Bush, Sr., Center works to enhance the ability of St. Louis and the state of Missouri to promote and constructively manage social change. The Bush Center initiates research and workshops in areas such as employment, education, housing, and law.

Public Policy Extension/Survey and Applied Research conducts scientific polls and provides research and analysis for local governments and nonprofit organizations. Public Policy Extension measures attitudes and opinions on a variety of policy topics.

Institute for Policy Leadership The Institute's mission is twofold: first, to help citizen legislators improve the way they do business, and second, to transform public policy challenges into constructive community action.

University Eye Center

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

Teaching

Center for Academic Development The Center for Academic Development is an academic support unit which focuses attention on the needs of UM-St. Louis students who seek success in pursuing higher education. The Center is comprehensive in nature and consists of the following programs:

The Writing Lab (409 SSB): This lab offers tutorial assistance to students working on papers for their classes. No appointment is necessary, and tutors are prepared to help both undergraduate and graduate students in all the disciplines. Some of the issues

covered in the lab include organization, sentence clarity, development, grammar, and usage. The Writing Lab houses 24 Macintosh computers for student use, and tutors provide computer assistance. There is no charge for any Writing Lab service.

Supplemental Instruction: Student assistants (SI Leaders) conduct study groups for specific courses. Course content and study skills are reviewed several times a week at scheduled sessions. Students participate on a voluntary basis without charge for the service.

English-as-a-Second-Language Program (ESL): The Center is the administrative home for the English as a Second Language Program. The program provides coursework and assessment for international students. Courses are listed under the Foreign Languages and Literatures Department.

Mathematics Lab (425 SSB): This lab offers free individual assistance on a walk-in basis to students needing help with any mathematics from basic math through calculus or any course involving mathematical skills. In addition, the lab offers on-site use of videotaped lessons that accompany some mathematics courses, computer packages covering certain topics, and mathematics textbooks and worksheets on several basic topics. Students or prospective students who are preparing to take the Mathematics Placement Test or C-Base Exam may come to the lab for help. Review materials for these two tests are available on general reserve in the Thomas Jefferson Library.

Math Workshops and Reviews: The Center provides assistance for students needing a review of pre-college mathematics. An intensive one day or two evening review is offered for those who need a quick brush-up of previously learned material. For a more extensive review, zero-credit workshops covering Beginning and Intermediate Algebra are offered as a semester-long lecture class or as an independent study course with flexible beginning and ending options. Schedules for the reviews and workshops can be found in the current Schedule of Courses.

Campus Assessment: This unit administers the Campus Assessment Plan. Currently there are two types of assessment required of all students: 1) a test of general educational development, given to incoming freshmen and administered to graduating seniors, and 2) a test or project, specified by the major department, given to graduating seniors. In addition, the unit is involved in the survey of alumni, currently enrolled students, faculty and employers.

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Tutorial Services: Student tutors, certified by the appropriate academic departments, are available to give assistance in many disciplines; times and costs are arranged by student and tutor.

For more information, contact the Center for Academic Development office at 516-5194.

Multicultural Relations/Academic Affairs 516-6807: This office was designed to support the University's goal of academic success for all students. Cognizant of the unique challenges facing its minority population, Multicultural Relations/Academic Affairs works to enhance and promote the academic success of these students. While there are a variety of services available to our students, this office provides and directly links students to such services as: new student orientation, scholar retention, tutoring, academic counseling, career exploration, and leadership development. Throughout the school year, workshops and discussion groups are held to foster a larger awareness of the school and its resources. Students meet with counselors to work on individual academic plans and are assigned tutors if necessary. Student Support Services Program and African-American Scholars Retention Program are now a part of Multicultural Relations/Academic Affairs and will assist in insuring that the mission of this office is accomplished. Additionally, Multicultural Relations/Academic Affairs was designed to foster effective communication among students, faculty, staff and alumni.

UM-Rolla Engineering Education Center

The UM-Rolla Engineering Education Center is housed on the University of Missouri-St. Louis campus. This is an Engineering Graduate program administered by UM-Rolla for nontraditional students in the St. Louis area. The program is conducted in the evening and on weekends, making it suitable for students who are employed full-time. Graduate work leading to the Master of Science degree is available in computer science, engineering management, and engineering mechanics, as well as aerospace, civil, electrical, environmental, and mechanical engineering.

The Center also provides information to St. Louis area residents about UMR programs in Rolla. Advisers can assist area pre-engineering students with transfer to the Rolla campus and with entry into the Cooperative Training Program that exists between UMR and numerous U.S. industries. This co-op program allows engineering students to gain valuable industrial experience during their school years and to be partially or totally self-supporting.

The Center also assists St. Louis area companies by

offering noncredit short courses, in-house training courses and engineering consultation services in the technical areas of competence of UMR faculty.

Video Instructional Program

The Video Instructional Program offers flexible, self-paced learning for students who are far from campus or whose schedules make it difficult to attend regular classes.

Course Listing. A catalogue listing all Video Instructional Program courses and offering complete information on the program is available by calling 516-5370. New courses are currently being developed. The following courses from the UM-St. Louis curriculum are offered:

Anthro 19, Archaeology
Anthro 25, World Cultures
Anthro 124, Cultures of Africa
Anthro 350, Special Studies
Biology 01, General Biology for Non-Science Majors
Biology 120, Environmental Biology
Comm 70, Introduction to Cinema.
Education 308, Foundations of Adult Basic Education
Elementary Education 341, Teaching Science in the Elementary School
History 31, Topics in European Civilization: Emergence of Western Europe to 1715
History 32, Topics in European Civilization: 1715-present
Philosophy 210, Significant Figures in Philosophy
Philosophy 290, Philosophical Issues in Other Disciplines: Humanities in the Arts
Psych 03, General Psychology
Psych 245, Abnormal Psychology
Social Work 312, Women's Social Issues.
Sociology 10, Introduction to Sociology

Courses are available on the Higher Education Channel (HEC) on St. Louis area cable stations. For complete information, call 516-5370.

Textbooks and Study Materials. Textbooks and study materials accompany the video lessons for each course and are available through the bookstore.

Career Experience & Employment

Internships and Other Career-Related Work Arrangements

You have many decisions to make about what programs of study you will follow, how you will help with the cost of college, and of course, where you will find a job when you are finished. UM-St. Louis offers career experience positions in a broad range of academic majors. Cooperative Education and internships can give you the edge in your college studies and career choices for today and for the future.

Career Experience & Employment Program

combines classroom studies with work experience in a field related to your education and career goals. Co-ops and internships give you a wonderful opportunity to gain professional job experience and earn money to help with expenses while you are in school. Through these programs, you will begin to understand what career choices you might make, gain valuable contacts in your field, and, in many cases, get paid for your work. You will graduate with a college degree and an impressive resume.

Career Experience & Employment Program links you, UM-St. Louis, and employers in an exceptional partnership. Throughout your career experience program, your department and Career Services will work with you and your employers to ensure that your positions are linked to your curriculum and career development. Students who work in this program and do not receive academic credit will receive a transcript notation for each semester employed.

The following is an overview of work arrangements available to UM-St. Louis undergraduate students. Refer to the academic department or Career Services for details on each program, requirements for participation, the opportunities available to graduate students, and the opportunities for students pursuing certificate programs or minors.

College of Arts & Sciences

Anthropology

315, Senior Seminar - required, for credit

325 - 329, Internship in Cultural Anthropology, Archaeology, Folklore, Museum Studies, Physical Anthropology - elective, for credit; placement with outside organizations; junior standing required. Positions available on competitive basis as lab and research assistants, teachers/facilitators, and interns/assistants - optional, non credit.

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

Art

287, Professional Internship - elective, for credit.

288, St. Louis Art Museum Internship - elective, for credit.

Biology

231, Undergraduate Internship in Biotechnology - optional as part of Certificate Program, for credit or non credit, enrollment in Certificate Program required.

347 Practicum in Conservation - required as part of Certificate Program, for credit, enrollment in Certificate Program required.

Chemistry

Opportunities are available to pursue research with faculty members for credit during the academic year. Normally requires enrollment in Chemistry 290. Stipend available in some cases. Expanded opportunities available in the summer through the Research Experience for Undergraduates Program, which is typically funded by the National Science Foundation and local industry. In some cases students may conduct Chemistry 290 research at a local company through collaborative arrangement between a faculty members and an industrial chemist.

Communication

193, 194, 196, 197, Practicum in Applied Communication, Debate/Forensics, Radio, and Television/Film - required, for credit. On-campus positions, as available.

393, 394, 396, 397, Internship in Applied Communication, Journalism, Radio, and Television/Film - elective, for credit, Senior standing, 3.0 GPA, and faculty recommendation required; off-campus positions.

Criminology and Criminal Justice

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

Economics

Career-related work arrangements for students majoring in economics are primarily administered through the Department, located in 347 SSB. These positions are generally paid and non-credit bearing; however, students receive a transcript notation for each semester worked. Occasionally credit may be earned for selected assignments with departmental approval.

English

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

198 Practicum in Theatre - optional, credit

398, Internship in Theatre - optional, credit.

Career Experience & Employment

Foreign Languages and Literatures

Positions as tutors in language lab available on a competitive basis - paid, non-credit. Students of German can apply for summer internships abroad through the German-American Student Exchange Program - non credit. Information available in department.

History

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

Mathematics and Computer Science

Career-related work arrangements for students majoring in math and/or computer science are primarily administered through Career Services located in 308 Woods Hall. These positions are paid and non credit bearing; however, students receive a transcript notation for each semester worked.

Music

292, Internship - required, for credit, enrollment in Bachelor of Music Business required. Department sponsored internships available for all majors at St. Louis area arts institutions.

Physics and Astronomy

The department funds research internships in the department in both physics and astronomy. The awards are competitive, and preference is given to students who have completed the Physics 111/112 sequence.

Political Science

295, Public Affairs Internship - required, for credit, for Bachelor of Science in Public Administration program. Elective, for credit for Bachelor of Arts in Political Science program; open to all majors. Placements include municipal, state, and federal governmental agencies, nonprofit organizations, courts, and political campaign offices.

Psychology

295, Selected Projects in Field Placement - elective, for credit.

Social Work

320 & 321 Supervised Field Experience in Social Work I & II - required, for credit, enrollment in BSW program and prior consent of instructor is required.

Sociology

298 Practicum in Field and Laboratory Research - elective, for credit.
304 Survey Research Practicum- elective, for credit. Students should consult the Sociology Department, 347 SSB, for requirement guidelines.

Many departments within the College of Arts & Sciences work in cooperation with the School of Education for students seeking teaching certification in an emphasis area. Student teaching work arrangements are coordinated through the School of Education.

School of Business Administration

Career related work arrangements for students majoring in all areas of business are primarily administered through Career Services located in 308 Woods hall. These positions are paid and non credit bearing; however, students receive a transcript notation for each semester worked.

BA327, Practicum in Finance - recommended course for credit and compensation for students with a finance emphasis. Students work closely with local firms to gain practical work experience.

School of Education

Student Teaching - required, for credit.

The School of Education is involved with a variety of programs which provide students with academically-related work opportunities. These include: Parkway Central Middle School/UM-St. Louis Internship Program, Professional Development School Program, and Schools for Thought-Compton-Drew Middle School. These programs are optional and both for credit and non credit. Positions at Parkway Central Middle School and Compton-Drew Middle School are paid.

Engineering

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

Career related work arrangements for students majoring in all areas of engineering are primarily administered through Career Services located in 308 Woods Hall. These positions are paid and non-credit bearing; however, students receive a transcript notation for each semester worked.

Barnes College of Nursing

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

Pierre LaClede Honors College

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

Visit Career Services, 308 Woods Hall, or call 516-5111 for more information on these programs and other work arrangements available to you.

Continuing Education & Outreach

As the comprehensive public university in a metropolitan region, the University of Missouri-St. Louis serves students who are in many ways nontraditional in their demographic make-up, their approach to higher education, and their educational needs. Meeting the requirements of these nontraditional students while extending the expertise of the University to the community is the mission of Continuing Education & Outreach at the University of Missouri-St. Louis.

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

Arts and Sciences

Continuing Education & Outreach in the College of Arts and Sciences includes credit courses and noncredit programs for the college's departmental disciplines, including courses and workshops in the arts, microcomputers, music appreciation, writing, languages, and history. Interdisciplinary teaching and research programs deal with such fields as social work, the humanities and economics.

Continuing Education & Outreach in the College of Arts and Sciences also sponsors the Center for entrepreneurship and Economic Education, which provides programs and curriculum consultations to local teachers and schools.

The Microcomputer Program, which develops and teaches applied computer courses and awards the Chancellor's Certificate on the Computer, is also a unit of Arts and Sciences Continuing Education & Outreach.

The Advanced Credit Program is administered by Arts and Sciences. This program provides an enrichment experience for secondary students who are university bound by providing freshman-level courses for credit in selected high schools.

The Nonprofit Management and Leadership Program offers credit courses and noncredit programs oriented toward current managers and volunteer leaders of nonprofit organizations.

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

A wide variety of credit courses is offered at several locations throughout the St. Louis metropolitan area to enable students to obtain academic credit at locations convenient to where they live and work.

The Annual St. Louis Storytelling Festival is also sponsored by Continuing Education & Outreach in the College of Arts and Sciences.

Adult Day Services Center

The Adult Day Services Center is an adult day health care center serving people who are in need of health care supervision, socialization, and/or rehabilitation during the daytime. A unique feature of the Adult Day Services Center is the Special Care Unit, for persons with advanced dementia. The center, which is sponsored by the University of Missouri-St. Louis in cooperation with Mid-East Area Agency on Aging serves as a clinical and research site for faculty and students. For further information, call (314) 524-0155.

Center for Science and Technology

The UM-St. Louis Center for Science and Technology provides an important link between UM-St. Louis and the community it serves. Its purpose is to facilitate collaborative research in the St. Louis area and to provide targeted, concentrated information to area employers and to the general public regarding scientific and technological advancements.

Training and research opportunities are provided by the Center to area industries, while informational lectures and workshops on current issues are offered to the interested public.

Business Administration

Continuing Education programs through the School of Business and Administration are offered in several areas, including organizational and management development and individual professional growth. Programs include a certificate program for first-line supervisors and a certificate program for human resources administrators. Special seminars and conferences are offered regularly on specific topics of current interest. In addition, the school co-sponsors programs in the area of microcomputing.

Education

The overall aim of the School of Education's outreach activities is to provide services that bring about better teaching and learning situations in educational settings. The programs and courses help students complete Missouri teacher certification requirements, as well as provide work either toward advanced degrees or for in-service professional growth. The school extends instructional research and service to educational personnel in other parts of Missouri and the Midwest in addition to the St. Louis metropolitan area.

Continuing Education & Outreach

Nursing

Barnes College of Nursing at UM-St. Louis offers a variety of Continuing Education programs for nurses and other health care professionals. Undergraduate nursing and arts and sciences credit courses are offered for those wishing to complete their B.S.N. or finish prerequisites to begin work on a master's degree.

Optometry

The University of Missouri-St. Louis offers Continuing Education & Outreach programs for optometrists through the UM-St. Louis School of Optometry. Diagnostic and therapeutic classes are held on a frequent basis with doctors coming from a variety of states. Each spring, the Optometric Institute draws several hundred optometrists, optometric assistants, and technicians for a two-day conference covering the latest optometric techniques.

Video Instructional Program

Various credit courses are offered by UM-St. Louis on several cable stations in cooperation with the Higher Education Channel (HEC). For more information, call (314) 516-5370.

UM-St. Louis Outreach Sites

Continuing Education & Outreach offers selected graduate and undergraduate credit courses at UM-St. Louis Lindbergh, a satellite center located at Lindbergh High School in south St. Louis County. Continuing Education & Outreach offers credit courses at other metropolitan sites, including St. Charles West Senior High School, Fox High School in Arnold, and Jefferson College in Hillsboro.

UM-St. Louis Educational Centers

The UM-St. Louis St. Charles County Educational Center has been established on the campus of St. Charles County Community College. Junior- and senior-level courses are offered at this site. In Jefferson County, courses are offered at Fox High School in Arnold and Jefferson College in Hillsboro.

In-house Training

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

J.C. Penney Conference Center

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

For more information on programs and services offered by Continuing Education & Outreach, call (314) 516-5958.

U M - S t . L o u i s
BULLETIN

degree
programs



College of Arts and Sciences

School of Business Administration

School of Education

Evening College

Inter-School Studies

Barnes College of Nursing

School of Optometry

Pierre Laclède Honors College

Degree Programs

Undergraduate Studies

Undergraduate degree programs are offered by the College of Arts and Sciences, School of Business Administration, School of Education, Evening College, and Barnes College of Nursing. Information on these programs can be found on the pages indicated.

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 Music (B.M.)

music,
music education,

Bachelor of Science (B.S.)

applied mathematics,
biology,
chemistry,
computer science,
criminology and criminal justice,
economics,
electrical engineering (joint program with Washington University),
mathematics
mechanical engineering (joint program with Washington University),
civil engineering (joint program with Washington University),
physics,
sociology,

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

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

early childhood education,
elementary education,
physical education,
secondary education,
special education,

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

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

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

Graduate Studies

The Graduate School administers all degrees and certificates beyond the bachelor's degree in all divisions except the School of Optometry, which administers the professional program leading to the Doctor of Optometry degree.

From its beginnings, graduate education at UM-St. Louis has been guided by four broad purposes: development of excellence in scholarship; encouragement of creative productivity in research; fostering of the highest standards in professional competence and commitment; and development of skill in the communication of knowledge. Responsive to the unique and comprehensive demands of the St. Louis area, the University has moved rapidly in the development of specialized facilities, a distinguished and creative faculty, and appropriate graduate programs to achieve these objectives.

In most cases, master's degree programs can be completed through part-time study.

Information on graduate degrees offered at UM-St. Louis can be found on the following pages.

Degree Programs

Master of Accounting (Macc)

Master of Arts (M.A.)

criminology and criminal justice,
economics,
English,
history,
mathematics,
political science,
psychology,
sociology,

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

creative writing,

Master of Music Education (MME)

Master of Business Administration (MBA)

Master of Education (M.Ed.)

counseling
educational administration
elementary education
secondary education
special education

Master of Public Policy Administration (MPPA)

Master of Science (M.S.)

biology,
chemistry,
gerontology,
management information systems,
physics,
physiological optics,

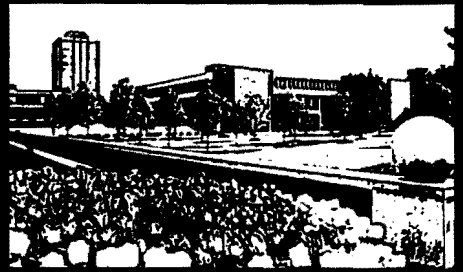
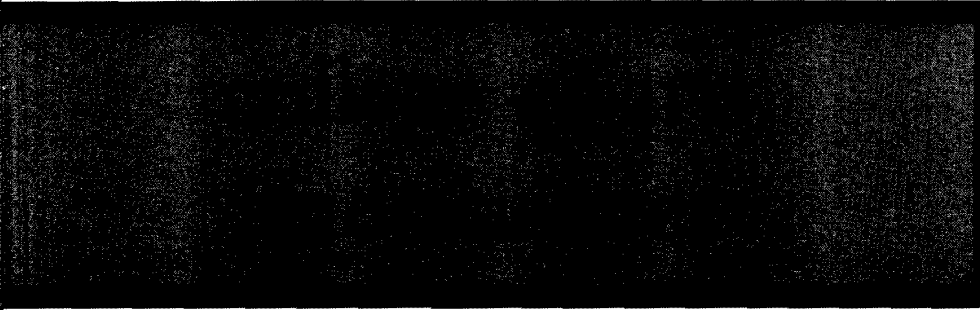
Master of Science in Nursing (M.S.N.)

Doctor of Education (Ed.D.)

Doctor of Optometry (O.D.)

Doctor of Philosophy (Ph.D.)

applied mathematics
biology
chemistry
criminology and criminal justice
education
nursing
physics (cooperative with UM-Rolla)
physiological optics
political science
psychology



College of Arts and Sciences

General Information

The College of Arts and Sciences consists of some 275 full-time faculty members in the following departments, each offering work in specific undergraduate degree programs: anthropology; art history and fine arts; biology; chemistry; communication; criminology and criminal justice; economics; English; foreign languages and literatures; history; mathematics and computer science; music; philosophy; physics and astronomy; political science; psychology; social work; and sociology.

Graduate study degree programs, administered through the Graduate School, are also offered in the following departments of the College of Arts and Sciences: biology, chemistry, criminology and criminal justice, economics, English, history, mathematics and computer science, physics and astronomy, political science, psychology, and sociology. An interdisciplinary master's degree in public policy administration is offered in cooperation with the School 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.

Requirements of the College of Arts and Sciences for Undergraduate Study

In addition to the University General Education requirements, all majors in the College of Arts and Sciences must meet the following requirements:

I 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 comparable cultures. 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. This requirement may be met by one of the following courses:

- Anth 21**, Body Culture
- Anth 25**, World Cultures
- Anth 29**, Cultural Diversity through Literature
- Anth 33**, World Prehistory
- Anth 41**, Sex and Gender Across Cultures
- Anth 71**, Native American Literature
- Anth 110**, Cultures of Asia
- Anth 111**, Cultures of East Asia
- Anth 112**, Cultures of Southeast Asia
- Anth 113**, Cultures of South Asia
- Anth 114**, Cultures of the Near and Middle East
- Anth 120**, Native Peoples of North America
- Anth 121**, Native Peoples of Eastern North America

- Anth 122**, Native Peoples of Western North America
- Anth 124**, Cultures of Africa
- Anth 131**, Archaeology of Missouri
- Anth 132**, Archaeology of North America
- Anth 134**, The Inca, Aztec, and Maya
- Anth 135**, Old World Archeology
- Anth 136**, Archeology of East Asia
- Anth 140**, Cultures of Mexico and Central America
- Anth 145**, Indians of South America
- Anth 191**, Special Topics in Non-Western Cultures
- Anth 201**, Comparative Economic Behavior
- Anth 202**, Culture, Politics, and Social Organization
- Anth 225**, Topics in Tribal Arts
- Anth 235**, Women in Sub-Saharan Africa: A Contemporary Perspective
- Anth 238**, Culture and Business in East Asia
- Anth 273**, Archeology and Cultures of the Biblical World
- Art 8**, Introduction to Asian Art
- Art 15**, Art of Africa, Oceania, and the Americas
- Art 107**, The Arts of China
- Art 108**, The Arts of Japan
- Art 116**, North American Indian Art
- Art 117**, African Art
- Art 119**, Pre-Columbian Art of Mexico and Central America
- Art 208**, Topics in Asian Art
- Art 215**, Topics in Tribal Arts
- Art 217**, Topics in African Art
- English 71**, Native American Literature
- English 128**, The Contemporary World in Literature
- History 61**, East Asian Civilization
- History 62**, East Asian Civilization
- History 71**, Latin American Civilization
- History 72**, Mexican Civilization
- History 81**, African Civilization To 1800
- History 82**, African Civilization Since 1800
- History 83**, The African Diaspora to 1800
- History 84**, The African Diaspora since 1800
- History 201**, History of Women in Comparative Cultures
- History 252**, The World of Islam
- History 262**, Modern History of the Pacific Rim
- History 358**, Central Asia, Nationalism and the Contemporary World
- History 361**, Modern Japan: 1850 to the Present
- History 362**, Modern China: 1800 to the Present
- History 371**, History of Latin America: To 1808
- History 372**, History of Latin America since 1808
- History 380**, West Africa to 1800
- History 381**, West Africa Since 1800
- History 382**, History of Southern Africa
- History 385**, African Diaspora to 1800
- History 386**, African Diaspora since 1800
- Music 9**, Non-Western Music I
- Music 10**, Non-Western Music II
- Phil 120**, Asian Philosophy
- PolSci 155**, East Asian Politics
- PolSci 253**, Political Systems of South America

College of Arts and Sciences

PolSci 254, Political Systems of Mexico, Central America, and the Caribbean

PolSci 258, African Politics

PolSci 289, Middle Eastern Politics

Soc 245, Sociology of South Africa

To graduate, all majors in the College also must complete the following:

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

College of Arts and Sciences Academic Policies

Grade Requirements

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

- 1) Earn 120 graded hours with a C grade or better, which constitutes a complete degree program and does not include a satisfactory/unsatisfactory basis. A C- does not meet this requirement.
- 2) Earn a cumulative grade point average of 2.0 or better for all hours attempted with a minimum of 120 hours.

This College of Arts and Sciences policy supersedes the statement under General Education Requirements.

Residency Requirements

Unless otherwise specified, a transfer student must complete 12 hours of graded work at UM-St. Louis at the 100 level or above within the minimum number of hours required for each major.

A transfer student must complete at least six hours of graded work at UM-St. Louis at the 200 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

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.

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. Guidelines for students according to prior foreign

language training are as follows:

- 1) Students entering with no high school language units must enroll in Language 1 or may enroll in the 115 series (see section 4).
- 2) Students with the degree of proficiency equivalent to 13 hours of college-level work may obtain exemption and/or credit by passing the department's placement exam. The specific dates for the exam are announced in the *Schedule of Courses* or may be obtained from the admissions office or the Department of Foreign Languages and Literatures.
- 3) Native speakers of language other than English may meet the foreign language requirement by presenting a transcript from a university or secondary school of their native country. The department will certify native speakers of those languages which are taught at the University. Those who are proficient in other languages must submit certification of competence to the College.
- 4) Language 115 a, b, c (Intensive) will satisfy the foreign language requirement.
- 5) Students may not repeat, for either credit or quality points, an elementary course if they have already completed a higher-level course for which the elementary course, or its equivalent, is a prerequisite.

Applied Music and Studio Art All students in the College may count any number of hours of applied music (private lessons) or studio art courses toward any degree in the College. This also includes transferred credit. However, students not majoring in music may count no more than eight hours in music-performing organizations (Music 40, 41, 50, 52, etc.) toward graduation, including credit transferred. Moreover, courses in studio art and applied music (private lessons or performing organizations) do not fulfill general education requirements in the humanities.

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

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

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

The B.S.P.A. degree program is administered through the political science department and offers an interdisciplinary approach requiring 12 hours in a particular specialization along with a core curriculum in political science.

General Information

Bachelor of Social Work (B.S.W.) The Department of Social Work offers the B.S.W. degree, stressing the scientific and applied aspects of social work.

Bachelor of Music (B.M.) The requirements are the same as for the B.A. degree with the addition of music education courses for those music majors seeking state teacher certification. Although a foreign language proficiency is not required, foreign language study is required for applied voice students.

Minors

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

Special Programs in the College of Arts and Sciences

Certificate Programs

Certificate programs are offered in Africana Studies, Biochemistry, Biotechnology, Gerontology, Photographic Studies, Studies in Religions, Trauma Studies, Undergraduate Certificate in Tropical and Conservation Biology, Undergraduate/Graduate Certificate Program in Non-Profit Organization Management and Leadership, Institute for Women's and Gender Studies, and Writing. For details, see Certificate Programs.

International Studies Certificate

In cooperation with College of Arts and Sciences, the Center for International Studies offers certificate programs in Africana, East Asian, European, Latin American, and International Studies. Also, the College cooperates with the School of Business Administration and the Center for International Studies in offering the International Business Certificate. For information on the certificates, see the Inter-School Studies section of this Bulletin.

Departmental Honors

Majors in the following departments may pursue Departmental Honors: biology, chemistry, economics, English, foreign languages and literatures, history, music, 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, 308 Woods Hall.

College of Arts and Sciences Extension

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

Anthropology

Faculty

Van A. Reidhead, Associate Professor*; Chairperson
Ph.D., Indiana University

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

Susan E. Brownell, Associate Professor*
Ph.D., University of California-Santa Barbara

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

Mridula Durbin, Adjunct Associate Professor
Ph.D., SUNY-Buffalo

Pamela Ashmore, Adjunct Assistant Professor
Ph.D., Washington University

Barbara J. Brooks, Adjunct Assistant Professor
Ph.D., Northwestern University

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

Castle McLaughlin, Assistant Museum Professor
Ph.D., Columbia University

John Wolford, Assistant Museum Professor
Ph.D., Indiana University

Patti Wright, Visiting Assistant Museum Professor
Ph.D., Washington University

Timothy E. Baumann, Lecturer
A.B.D., University of Tennessee-Knoxville

*members of Graduate Faculty

General Information

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

Anthropology is the study of humans through all time and space. The discipline considers our struggle to adapt to and survive in the natural and social environments and to improve our lot in the face of perpetual change. Anthropologists teach how cultures evolve and the role of individuals and groups in the invention and perpetuation of cultural beliefs, behaviors, symbols, and systems. Anthropologists have accumulated in-depth knowledge of thousands 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.

The Department of Anthropology strives to teach and encourage the following:

- 1) the concepts and skills required for responsible individual participation in the evolution of culture in the family, the work place, the local community, the nation, and the globe;
- 2) mastery of the academic skills of theoretical conceptualization and critical evaluation, applied to multi-cultural contexts and understanding;
- 3) individual and community skills for material and emotional survival in the global high technology age;
- 4) development of ability to conduct independent investigations of social and cultural conditions, to draw conclusions, and to present findings and recommendations in a professional manner;
- 5) the use of academic and personal skills to make oneself valuable in diverse local, national and global employment settings;
- 6) growth, in the individual, of a rooted sense of place and meaning in relation to self, society, and humanity. The study of anthropology, in fact, provides a liberal education that is applicable to any work or life context.

Degrees and Areas of Concentration

A bachelor of arts in anthropology is offered with a focus on applied and theoretical skills. The anthropology faculty is actively involved in cultural, archaeological, folkloric, and biological anthropology research at home and abroad.

Cultural Anthropology: faculty are involved in research in St. Louis, Ghana, South Africa, China, Japan, India, Native American communities, and monasteries in the United States. They encompass studies of student success in inner city schools, health care choices of elder citizens, economic development, body culture, culture diversity principles, human-animal relations, educational anthropology, the evolution of consciousness, and more. With a large core of cultural anthropology faculty, 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 School 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 K-12th grade school children and their teachers.

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Archaeology: faculty are involved in research in St. Louis, through the Fort Belle Fontaine Research Partnership, headed by UM-St. Louis. The Department of Anthropology has a summer field school where students learn excavation and artifact analysis techniques. Faculty and students are active in two research projects in the Yellow River Valley of China, where they are studying the origin of Chinese civilization and dynasties and of Paleolithic cultures throughout China and Southeast Asia. Opportunities exist for field study in archaeology in virtually any area of the world. The Department has an archaeology lab with the largest extant collection of prehistoric and historic artifacts from the St. Louis metro area and surrounding Missouri counties.

Folklore: faculty are active in the study of the folklore of diverse communities in St. Louis and of religious communities. Interests include how communities express their beliefs about who they are, and the ways that peoples use space and time markers to create and express identity. Interested students can pursue a wide range of independent research and study options in urban folklore.

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 have designed experiential lessons on human origin, fossil classification, and the foundations of human diversity for school children.

Student Experience: a hallmark of the Department is the opportunity for students to 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 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 U.S. and has scholarship funds to assist. There is an active Anthropology Club that sponsors an intercultural film series, speakers, and social activities.

Paid undergraduate positions are available on a competitive basis to Anthropology majors as 1) Human origins teaching lab assistants, 2) faculty research assistants, 3) human origin and cultural diversity lab teachers/facilitators working with school groups grades K-12, and 4) staff intern/assistant at the St. Louis Art Museum.

Minor in Anthropology

The minor in anthropology 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.

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 (S/U) basis from any departmental elective. The statistics requirement may be taken on a S/U basis. All other required courses for the major must be completed with a grade of "C" or better. The following courses are required:

Anth 5, Human Origins

Anth 11, Introduction to Cultural Anthropology

Anth 202, Culture, Politics, and Social Organization

Soc 220, Sociological Statistics, or any other college level statistics course

Anth 301, Ideas and Explanations in Anthropology

Anth 308, Practicum in Cultural Research Methods

Anth 315, Senior Seminar

1 archaeology area course in Anthropology numbered 100-199.

1 culture area course in Anthropology numbered 100-199.

2 courses in Anthropology numbered 200-299, in addition to 202.

Students may elect to take up to, but not to exceed, 12 additional hours in anthropology courses of their choice.

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After fulfilling the general education and specific major degree requirements, students are to take the remaining 57 hours required to complete the B.A. 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, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, business, education, engineering, interdisciplinary, and other areas or courses not listed, upon approval by the chair of anthropology.

Minor in Anthropology

All minor degree candidates must take:

Anth 5, Human Origins

Anth 11, Introduction to Cultural Anthropology

Candidates for the minor must also take:

Anth 301, Ideas and Explanations in Anthropology or

Anth 308, Practicum in Cultural Research Methods

1 Anthropology course at the 100-199 level.

1 Anthropology course at the 200-299 level.

1 elective Anthropology course at any level.

Grades of C or better should be attained in all courses used to satisfy these requirements. One elective course taken on satisfactory/unsatisfactory (S/U) basis may be applied toward the minor.

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 a sensitivity to cultural values and diversity are important. Graduates of UM-St. Louis' program have found employment as university professors, lawyers, 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 an excellent preparation for graduate and professional training in administration, the helping professions, development work, law, environmental studies, international and human resource areas of business, and in many other areas, depending upon individual interests. Many UM-St. Louis anthropology graduates have gone on to advanced training in master's, doctoral, and professional programs in respected universities around the country. The employment forecast for people with M.A. and Ph.D. degrees in anthropology is good and is also good for bachelor degree graduates wishing to work in the business sector or to take advanced degrees in related fields. 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.

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Course Descriptions

The following courses fulfill the Social Sciences [SS] breadth of study requirements: 05, 05a, 11, 15, 19, 21, 25, 29, 33, 41, 71, 109, 110, 111, 112, 113, 114, 120, 121, 122, 124, 126, 131, 132, 134, 135, 136, 137, 140, 145, 191, 201, 202, 203, 204, 207, 208, 210, 212, 215, 220, 225, 232, 234, 235, 238, 242, 244, 250, 273, 286, 291, 301, 308, 309, 310, 315, 350, 391.

05 Human Origins (4)

A survey of evidence and interpretations of how humans originated as a species and of the origins of physical and cultural differences. Examines evidence of fossil humans, the evolution of gender roles and relationships, the origin of racial, ethnic, and cultural differences, basic facts about race and the concepts of race that are in use today, the roles of genes, technology, and thought in the evolution of humans, and the origin of technology, culture, language, religion, etc. 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.

05a Human Origins (3)

This course is the same as Anthro 05, minus laboratory activities. This course does not meet the requirements for the Anthropology major.

11 Introduction to Cultural Anthropology (3)

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. This course satisfies the Cultural Diversity Requirement.

15 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.

19 Archaeology (3)

How do archaeologists determine how old things are and which ancient culture they belong to? How do they reconstruct the religious meanings, economies, and politics of ancient civilizations and cultures? What can the study of the past teach us about life today, how our own culture changes, and how cultures diversify to form new cultures and consolidate to form nations? Using cases from ancient cultures around the world, this course will answer these and many other questions about the study of archaeology. This course is a basic introduction to archaeology as an interpretive discipline.

21 The Body in Culture (3)

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. This course satisfies the Cultural Diversity requirement.

25 World Cultures (3)

An ethnographic survey of the major culture areas of the world (Africa, Asia, North and South America, Europe, and Oceania). This course satisfies the Cultural Diversity requirement.

29 Cultural Diversity Through Literature (3)

This course emphasizes the application of anthropological concepts to literary works to gain greater understanding of the richness and the relative validity of the expressions of people from a wide variety of geographical, ethnic, religious, and cultural backgrounds. Both male and female writers will be covered, and both male and female-oriented works will be read. Authors representing Africa, South America, and Asia will be represented, as well as a broad range of ethnic groups within the United States, such as Hispanics, African American, Asian Americans, and Native Americans. This course satisfies the Cultural Diversity requirement.

33 World Archaeology (3)

An introduction to prehistoric cultures and ancient civilizations of Asia, Africa, Europe, and the Americas from the Paleolithic Age to the establishment of states. Examines the rise of complex societies leading to civilization in the different areas of the world, concentrating on social, ideological and ecological conditions contributing to their development and on comparisons between civilizations. This course satisfies the Cultural Diversity requirement.

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41 Sex and Gender Across Cultures (3)

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. This course fulfills the Cultural Diversity Requirement.

71 Native American Literature (3)

(Same as English 71.) The course 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 and the College of Arts and Sciences Cultural Diversity requirement.

109 Field Study in Archaeology (3-6)

Prerequisite: Consent of instructor. This course is designed to introduce students to field methods in archaeology and to the methods 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.

110 Cultures of Asia (3)

A survey of the cultures of Asia including the prehistory of the area, the ethnographic and linguistic groupings, and the social organization and cultural systems of these groups. This course satisfies the Cultural Diversity requirement.

111 Cultures of East Asia (3)

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. This course satisfies the Cultural Diversity requirement.

112 Cultures of Southeast Asia (3)

An ethnographic and historical survey of the various people of Southeast Asia including Laos, Cambodia, Singapore, Indonesia, Myanmar, Malaysia, Brunei, Thailand, Vietnam, and the Philippines. Includes an examination of the varying cultural and social developments within and through the historical geographical, and cultural environments. This course satisfies the Cultural Diversity requirement.

113 Cultures of South Asia (3)

An ethnographic and historical survey of the various people of South Asia including India, Pakistan, Afghanistan, Bangladesh, Sri Lanka, Tibet, and Nepal. Includes an examination of the varying cultural and social developments within and through the historical geographical, and cultural environments. This course satisfies the Cultural Diversity requirement.

114 Cultures of the Near and Middle East (3)

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. This course satisfies the Cultural Diversity requirement.

120 Native Peoples of North America (3)

A survey of the aboriginal cultures of Native Peoples of North America, including prehistory of the area, the ethnographic and linguistic groupings, and the social organization and cultural systems of North American groups. This course satisfies the Cultural Diversity requirement.

121 Native Peoples of Eastern North America (3)

An introduction to the native peoples of Eastern North America, including the Midwest, Great Lakes, Southeast, northeast, and Subarctic. The diversity and complexity of cultures in these regions will be demonstrated. Prehistory, history, ethnography, linguistics, art, and literature will be among the topics discussed. This course satisfies the Cultural Diversity requirement.

122 Native Peoples of Western North America (3)

An introduction to the native peoples of Western North America, including those of the Arctic, Subarctic, Pacific Coast, Southwest, and Plains. The diversity and complexity of cultures in these regions will be demonstrated. Prehistory, history, ethnography, linguistics, art, and literature will be among the topics discussed. This course satisfies the cultural diversity requirement.

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124 Cultures of Africa (3)

A basic ethnographic survey of African cultures, with attention to social groupings, tribalism, religion, language and social change, and the ecological relationship between humans and nature. This course satisfies the Cultural Diversity requirement.

126 Archaeology of Historic St. Louis (3)

Native Americans, Frenchmen, and other Europeans shaped the history of St. Louis from prehistoric times through the Industrial Revolution to the present. The record of this long series of events remains buried beneath city streets and buildings. This class will utilize historic documents, archaeological reports, cultural geography, history, and historic archaeology to explore the archaeology of St. Louis.

131 Archaeology of Missouri (3)

An introduction to the prehistoric Indian cultures of Missouri and adjacent areas from 20,000 B to the coming of Europeans. Examines the development of prehistoric cultures in Missouri from small bands of hunters to agricultural city builders. Discusses the decline of indigenous cultures as they came into contact with European civilization. This course satisfies the Cultural Diversity requirement.

132 Archaeology of North America (3)

In this course, the archaeological record of cultural development throughout prehistoric North America is examined. Topics of discussion include the origins of human culture in North America, the process of prehistoric cultural development in the different regions of the continent, and archaeological approaches to explaining the behavior of North America's prehistoric inhabitants. This course satisfies the Cultural Diversity requirement.

134 Archaeology of the Inca, Aztec, and Maya (3)

A survey of the cultural evolution of Meso-America and Andean South America, from the early hunters to the high civilizations. The course will conclude with the sixteenth-century Spanish conquest of these civilizations. Satisfies the Cultural Diversity requirement.

135 Old World Archaeology (3)

Examines the origins, major transformations, and cultural systems in the rise and decline of the civilizations of prehistoric and early historic Africa, Asia, and Europe. This course satisfies the cultural diversity requirement.

136 Archaeology of East Asia (3)

An introduction to the development of cultures in China, Japan, and Korea from the most ancient origin of humans in the region to the rise of early Chinese Dynastic states. Examines discoveries from archaeological excavations, emphasizing China. This course satisfies the Cultural Diversity requirement.

137 Archaeology of Africa (3)

This course will examine the archaeology of Africa from pre-historic times up to the period of European contact (ca. A. D. 1700). The course explores the diversity of the past African environments and cultures. It will deal with important archaeological issues such as the history of African archaeology, the practice of archaeology in Africa, the role of the environment in the development of technology, art, architecture, trade relations and statehood in Africa. This course fulfills the cultural diversity requirement.

140 Cultures of Mexico and Central America (3)

A survey of Indian cultures in Mexico and Central America. The course focuses on modern communities after a brief introduction to the European conquest and colonialism as they affected the Indian communities. Topics include preservation of Indian culture in Hispanic world, impact of modernization and tropical deforestation, Indians as an oppressed minority, Indian ethnic identity, "liberation theology". This course satisfies the Cultural Diversity requirement.

145 Indians of South America (3)

Explores the cultures and environmental adaptations of South American Indians from European contact to the present. Focus is on culture change and diversity, and on the consequences for tribal peoples and their environments of conflict between their world views, political motivations, and economic policies and those of multinational corporations and of nation states like Brazil, Peru, and the United States. This course satisfies the Cultural Diversity requirement.

191 Special Topics in Non-Western Cultures (3)

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. This course satisfies the Cultural Diversity requirement.

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201 Comparative Economic Behavior (3)

Prerequisite: Anth 11, or introductory course in another social science, or consent of instructor. An introduction to the range of economic organizations found in the world. Anthropological models of production and exchange. The notion of "rationality" as applied to non-Western economic systems. The contribution of anthropology to the understanding of economic development. Emphasis is placed on native and non-Western cultures. This course satisfies the Cultural Diversity requirement.

202 Culture, Politics and Social Organization (3)

Prerequisite: Anth 11 or introductory course in another social science, or consent of instructor. A survey of political organizations and processes with emphasis on native and non-Western cultures. Included are topics such as strategies for obtaining and maintaining power, ethnicity, tribalism, and the relationship of ideology to politics.

203 Culture and Cognition (3)

Prerequisite: Anth 11, or introductory course in another social science, or consent of instructor. An introduction to psychological anthropology focusing on cultural influences on cognition and perception. Theories of "primitive mind" will be reviewed in historical perspective, and cross-cultural research in perception, learning, and cognition considered. Recent studies of sociocultural systems and cognitive styles will be examined and their implications for education explored.

204 Culture and Personality (3)

Prerequisite: Anth 11, or introductory course in another social science, or consent of instructor. Analysis of behavior from the standpoint of interaction between psychological, sociological, and cultural systems.

207 Culture Change (3)

Prerequisite: Anth 11, or introductory course in another social science, or consent of instructor. An intensive investigation into the elements and processes of culture change with regard to specific theories of culture change. The course examines the relationship between microchange in primitive and modern complex societies.

208 Language and Culture (3)

Prerequisite: Anth 11, or introductory course in the social sciences, or consent of instructor. This course examines the place of language in culture. It will consider the relationships between language, gender, class, ethnicity, and other social categories. It will also utilize the approaches of anthropological linguistics, sociolinguistics, and semiotics for an understanding of the encoding and communication of meaning.

210 Applied Anthropology (3)

Prerequisite: Anth 11, or introductory course in another social science, or consent of instructor. A description and analysis of the 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.

212 Medical Anthropology (3)

Prerequisite: Anth 11, or introductory course in another social science, or consent of instructor. An examination of the growing interaction between 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.

215 Growing Old in Other Cultures (3)

(Same as Gerontology 215.) 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.

220 Evolution of Culture and Communication (3)

Prerequisite: Anth 5 or 11, or introductory course in another social science, or consent of instructor. Examines the uniformity of communication processes in the evolution of culture from prehuman primates through human prehistory to the present. A theoretical course rooted in cases from specific primate groups and human cultures.

225 Topics in Tribal Arts (3)

(Same as Art History 215) Prerequisite: One of the following: Art 15, 116, 117, 119 or consent of the instructor. Intensive study of the arts of several tribal groups. Inquiry into relationships between art and culture by means of an examination of myth, literature, festival and social life. Seminar format. May be repeated for credit with consent of advisor. This course fulfills the cultural diversity requirement.

232 Introduction to Historic Archaeology (3)

Explores the growing field of historic archaeology. Four basic topics will be discussed: (1) how historic archaeology developed as a subfield of Anthropology; (2) specialized historic sites; (3) analysis of historic materials and how this information is used to determine the date of occupation, social status, economic behavior, social ideas, etc.; and (4) current theories in historic archaeology and how these are used to understand past human behavior.

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234 Cultural Continuity and Change in Sub-Saharan Africa (3)

Prerequisite: Anth 11 or intro course in another social science or consent of instructor. This course is intended to examine cultural phenomena within Africa from the 19th century to the present. Our goal will be to reach an understanding of continuities and change in the existing universal social institutions. A thematic approach will include discussions on kinship; geo-politics; natural and supernatural forces; gender relations; economics in the world economy; and prospects for the future. Ethnographic and other supporting social scientific resources gathered from African people will be investigated. Problems and accomplishments are both reviewed so as to acknowledge the complexity of contemporary African societies. Student discussion is encouraged.

235 Women in Sub-Saharan Africa: A Contemporary Perspective (3)

Prerequisite: Anth 11, 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. This course fulfills the Cultural Diversity requirement.

238 Culture and Business in East Asia (3)

Prerequisite: Anth 11, or introductory course in another social science, or consent of the instructor. This course looks at the influence of local history and culture on the course of economic development in Mainland China, Taiwan, Hong Kong, Japan and North and South Korea. This course will consider how East Asia has departed from the Western model of modernization and will look at the clash of cultures as Western corporations try to do business in East Asia. The course will analyze the role of family, kinship, and social hierarchy in shaping East Asian business practices. The largest part of the course will be devoted to Mainland China. This course fulfills the Cultural Diversity Requirement.

242 The Culture of Cities (3)

Prerequisite: Anth 11, or introductory course in another social science, or consent of instructor. A comparative analysis of the cultural roles of urban centers and the processes of urbanization in non-Western and Western societies, past and present. A consideration of urban influences on rural America and the traditional peasant and primitive peoples of Africa, Asia, and Latin America.

244 Religion, Magic, and Science (3)

Prerequisite: Anth 11, 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.

250 American Folklore (3)

Prerequisite: Anth 11, 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).

273 Archaeology and Cultures of the Biblical World (3)

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. Teaches skills in evaluating popular vs. scientific and historical evidence of Biblical events. This course fulfills the Cultural Diversity requirement.

286 Society, Arts, and Popular Culture (3)

(Same as Sociology 286.) Prerequisite: Sociology 10 or Anth 11. The relationship of artists, writers, and musicians; their traditions and modes of artistic expression to variant social structures and institutions; and social pressures and rewards.

291 Current Issues in Anthropology (3)

Prerequisite: Anth 11, 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.

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301 Ideas and Explanations in Anthropology (3)

Prerequisite: Anth 11 or consent of instructor. Major developments in anthropological explanations of social and cultural behavior through intensive reading and discussion of source materials.

308 Practicum in Cultural Research Methods (4)

Prerequisites: One course in statistics and Anth 11, 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.

309 Field Study in Archaeology (3-6)

Prerequisite: Consent of instructor. This course is for advanced students. It is designed to introduce students to 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.

310 Laboratory Methods in Archaeology (3)

Prerequisite: Anth 109, or 309, or consent of instructor. This is a course in basic laboratory analysis and curation methods. 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, graphics, paleobotany, experimental analysis, and soils. Purchase of individual supplies not to exceed \$10.

315 Senior Seminar in Anthropology (3)

Prerequisite: Anth 308 or consent of instructor. Required of anthropology majors. Discussion of critical issues; preparation of senior paper; presentation of selected papers by students.

325 Internship in Cultural Anthropology (1-3)

Prerequisite: Recommendation of major advisor. Students will be assigned an internship on recommendation of their advisor. 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.

326 Internship in Archaeology (1-6)

Prerequisite: Recommendation of major advisor. Students will be assigned an internship on recommendation of their advisor. 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.

327 Internship in Folklore (1-3)

Prerequisite: Recommendation of major advisor. Students will be assigned an internship on recommendation of their advisor. 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.

328 Internship in Museum Studies (1-3)

Prerequisite: Recommendation of major advisor. Students will be assigned an internship on recommendation of their advisor. 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.

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329 Internship in Physical Anthropology (1-3)

Prerequisite: Recommendation of major advisor. Students will be assigned an internship on recommendation of their advisor. 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.

350 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.

391 Current Issues in Anthropology (1-4)

Prerequisite: Anth 11 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. (Non-majors may register in Anthropology 191.)

425 Peoples and Cultures of Southeast Asia (3)

An analysis of the cultures of peninsular and insular Southeast Asia. Topics include, but are not limited to, prehistory, tribal groups, cultural systems, political organizations, religious traditions, refugee movements, the culture of conflict, and modernization.

428 Culture and Business in East Asia (3)

Prerequisite: Advanced Undergraduate or Graduate standing and one course on East Asia. This course looks at the influence of the local history and culture on economic development of Mainland China, Taiwan, Hong Kong, Japan and North and South Korea. This course will consider how East Asia has departed from the Western model of modernization and will look at the clash of cultures as Western corporations try to do business in East Asia. The course will analyze the role of family, kinship, and social hierarchy in shaping East Asian business practices. The largest part of the course will be devoted to Mainland China. This course fulfills the Cultural Diversity requirement. This course is taught at Washington University for the Joint Center on East Asian Studies.

430 Global Refugee Crisis (3)

A study of both the theory and methods in attempts to understand the issues confronting displaced peoples, their hosts, and the international community. Includes an analysis of the problems and reasons for refugee situations around the world in such regions as Southeast Asia, Africa, the Middle East, Europe, and Central America. Varying perspectives including those of academics, refugees, agency personnel, and government representatives are surveyed.

435 Foundations of Museology I (3)

Prerequisite: Consent of Director of Museum Studies Program. (Same as Art 435 and History 435.) 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.

436 Foundations of Museology II (3)

Prerequisite: Anthropology 435 and consent of Director of Museum Studies Program. (Same as Art 436 and History 436.) 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.

437 Effective Action in Museums (3)

Prerequisite: Consent of Director of Museum Studies Program. (Same as Art 437 and History 437.) 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.

438 Museum Studies Master's Project (4)

Prerequisite: Consent of Director of Museum Studies Program. (Same as Art 438 and History 438.) Research and writing/exhibit development on a selected topic.

440 Cultural Aspects of Aging (3)

(Same as Gerontology 440.) 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.

480 Culture, Crime, and Criminal Justice (3)

This seminar will examine: (1) the nature and conduct of ethnographic research; and (2) how ethnographic approaches have been and can be used to understand the criminal justice system and its institutions. Readings will be drawn from anthropological and other social science materials on ethnographic methods as well as selected (post-1960s) monographs and articles illustrating the use of such approaches in criminal justice settings.

491 Gender, Ethnicity, and Nationalism (3)

This course considers contemporary theories and case studies on the cultural construction of collective identity and difference, concentrating on the issues of gender, ethnicity, and nationalism. Of particular concern is the relationship between culturally constructed social groups (divided by gender, race, or nationality) and the distribution of power. Case studies are selected from both North American and world cultures.

Art and Art History

Faculty

W. Jackson Rushing III, Associate Professor*,
Chairperson
Ph.D., University of Texas

E. Louis Lankford, Des Lee Foundation Endowed
Professorship in Art Education*
Ph.D., Florida State University

Tom Patton, Professor*
M.F.A., University of New Mexico, Albuquerque

Kenneth Anderson, Professor*
M.F.A., Southern Illinois University, Edwardsville

Jay Rounds, Des Lee Foundation Endowed
Professorship in Museum Studies and Community
History*
Ph.D., University of California, Los Angeles

Ruth L. Bohan, Associate Professor*
Ph.D., University of Maryland

Yael Even, Associate Professor*
Ph.D., Columbia University

Paul Corby Finney, Associate Professor*
Ph.D., Harvard University

Jeanne Morgan Zarucchi, Associate Professor*
Ph.D., Harvard University

Marian Amies, Assistant Professor*
M.F.A., Southern Illinois University, Edwardsville

Judith W. Mann, Museum Assistant Professor*
Ph.D., Washington University

Terry L. Suhre, Assistant Professor,
Gallery Director*
M.F.A., Southern Illinois University, Carbondale

Dan Younger, Assistant Professor,*
B.F.A. Coordinator
M.F.A., University of Iowa

Juliana Y. Yuan, Senior Lecturer/Slide Curator
M.A., University of Kansas

*members of Graduate Faculty

The department of art and art history represents a diverse faculty actively engaged in the production of art and in its historical and critical evaluation. The department prides itself on its commitments to high standards of teaching and sound research achievements. Individual faculty have been cited for their teaching excellence. Art history faculty have authored books, articles and critical reviews and regularly participate in national and international conferences. For their research art history faculty have received research grants from such major institutions as the J. Paul Getty Foundation, the National Endowment for the Humanities, the Andrew W. Mellon Foundation and the American Philosophical Society. Studio art faculty exhibit nationally and internationally in group- and solo-juried and invited exhibitions. Their work has been accorded various show awards and received financial support from the National Endowment for the Arts, the Ford Foundation and University Research grants.

General Information

Degrees and Areas of Concentration

The department offers course work leading toward the B.A. in art history and the B.F.A. in studio art.

Courses included in the B.A. in art history cover the arts of Asia, Africa, Europe and North America, including Native American arts, from ancient times to the present. Courses examine the entire range of human visual expression from painting, sculpture, architecture and photography to performance and festival arts in the tribal world. In each case the arts are examined within their historical, aesthetic and cultural contexts.

The B.F.A. in studio art is offered in partnership with the Saint Louis Community College. The degree consists of a Foundation Art Program and an Emphasis Area in one of the following: Drawing, Graphic Design, Painting, Photography, Printmaking and General Fine Arts. Students will generally complete the Associate of Fine Arts degree in Studio Art (A.F.A.) at one of the Saint Louis Community Colleges before transferring to UM-St. Louis to complete the upper division courses leading to the Bachelor of Fine Arts degree in Studio Art (B.F.A.).

To support its teaching and research objectives, the department maintains a slide collection of over 80,000 slides. The collection, which includes examples of painting, sculpture, architecture, photography and decorative arts, is under the supervision of a professional slide curator, who is available for special assistance to staff and students.

Gallery 210

Gallery 210 offers visual arts programming of regional, national and international importance that would otherwise not be shown in St. Louis. The gallery's exhibitions and related arts programming have enjoyed a long and distinguished history of service to the University and to the St. Louis community. Gallery activities are supervised by a professional Gallery Director.

Scholarships/Internships

Two scholarships are available on a competitive basis within the department: the Art Department/Barbara St. Cyr Scholarship and the William T. Isbell, Jr., Scholarship. The department also sponsors a variety of internships with local arts institutions, including the Saint Louis Art Museum, the Missouri Historical Society, Laumeier Sculpture Park and various private art galleries.

Art and Art History

Undergraduate Studies

General Education Requirements

Majors in art history must meet the College and University general education requirements. A foreign language is required. French or German is recommended. Art history courses required for the degree may not be taken on a satisfactory/unsatisfactory (S/U) basis. All art history courses fulfill the humanities general education requirement. The following art history courses meet the Cultural Diversity Requirement:

- 008, Introduction to Asian Art
- 015, Art of Africa, Oceania, and the Americas
- 107, The Arts of China
- 108, The Arts of Japan
- 116, North American Indian Art
- 117, African Art
- 119, Pre-Columbian Art of Mexico and Central America
- 208, Topics in Asian Art
- 215, Topics in Tribal Arts
- 217, Topics in African Art

Art history courses can be applied toward minors in Anthropology, American Studies, Black Studies, Classical Studies, Philosophy and Urban Studies, or certificates in Studies in Religions, Institute for Women's and Gender Studies, and Photographic Studies.

Majors in studio art must meet the College and University general education requirements. A foreign language is not required. Studio art courses required for the degree may not be taken on a satisfactory/unsatisfactory (S/U) basis. A total of 123 hours is required for graduation. Studio art courses do not fulfill the humanities general education requirement.

Degree Requirements

Bachelor of Arts in Art History

Art history majors must complete a minimum of 36, but no more than 45 hours in art history. The following courses are required:

- 5, Introduction to Art
- 195, Sophomore/Junior Seminar: The Methods of Art History
- 203, Media and Technique in Art History
- 395, Senior Art History Seminar

Students must take **three** lower division courses from three of the following four categories:

Ancient and Medieval

- 111, Art and Archaeology of the Ancient World
- 112, Greek Art and Archaeology
- 113, Roman Art and Archaeology
- 114, Early Christian Art
- 125, Medieval Art

Renaissance and Baroque

- 135, European Art & Architecture 1300-1800
- 137, Early Renaissance Art & Architecture
- 138, High Renaissance Art & Mannerism
- 145, Baroque Art

Modern and American

- 155, Modern Art
- 158, American Art
- 159, American Architecture
- 191, Art Since 1945

Non-European

- 08, Survey of Asian Art
- 15, Art of Africa, Oceania, and the Americas
- 107, Chinese Art
- 108, Japanese Art
- 116, North American Indian Art
- 117, African Art
- 119, Pre-Columbian Art

Students must take **four** 200-level courses. **Two** of these courses must be chosen from **two** of the following four categories:

Ancient and Medieval

- 212, Topics in Ancient Art
- 225, Topics in Medieval Art

Renaissance and Baroque

- 235, Topics in Renaissance Art
- 245, Topics in Baroque Art Modern and American
- 255, Topics in Modern European Art
- 258, Topics in American Art
- 263, Photography Since 1945
- 291, Topics in Contemporary Art

Non-European

- 208, Topics in Asian Art
- 215, Topics in Tribal Art

The remaining **two** 200-level courses should be chosen from the following list:

- 205, Advanced Issues and Ideas in Art History
- 274, Philosophy of Art
- 275, The Art of the Print
- 276, Women and the Visual Arts
- 285, Topics in Architectural History
- 294, Art Criticism
- 295, The Artist and the City
- 296, The Nude in Art
- 297, Landscape Perspectives in Art
- 298, The Portrait in Historical and Cross-Cultural Contexts

Students must also take **one** course in studio art. Up to nine hours in studio art may be applied toward the B.A. in art history. Art 134, Art Activities for Elementary Schools does not fulfill this requirement.

Art and Art History

To complete the 36-45 hours for the degree, art history majors may take additional courses from those previously noted or any of the following:

- 65, Photography and Society
- 105, Issues and Ideas in Art History
- 165, History of Photography
- 179, Special Topics in Art History
- 265, Topics in Photographic Studies
- 287, Professional Internship
- 288, UM-St. Louis-Saint Louis Art Museum Internship
- 289, Visual Resource Management
- 290/390, Special Study
- 292, Museum Studies
- 293, Art Gallery Management

Note: Art history majors who began in the program before 1991 have their choice of completing the major under the old requirements or the new. Consult with your adviser for details.

After fulfilling the general education and specific major degree requirements, students are to take the remaining hours required to complete the Art History 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, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, business, education, engineering, and interdisciplinary.

Bachelor of Fine Arts in Studio Art

Candidates for the B.F.A. degree must complete a Foundation Art Program (which is largely satisfied by the A.F.A. degree) and an emphasis area in one of the following: Drawing, Graphic Design, Painting, Photography, Printmaking or General Fine Arts. Studio art majors are required to take 75 hours in Studio Art (this includes 30 hours in the Foundation Art Program) and 15 hours in Art History. Art 134, Art Activities for Elementary Schools cannot be applied toward this degree. The final 24 hours must be completed in residence at UM-St. Louis. Graduating students must also pass a faculty portfolio review.

The following courses are required for the Foundation Art Program:

- 40, Drawing I
- 42, Figure Drawing I
- 50, Design I
- 140, Drawing II
- 150, Design II
- 240, Drawing III or
- 142, Figure Drawing II*
- 250, Composition
- 9 hours of Studio Art Electives

*Those planning an emphasis in drawing or painting must take Art 142.

Students must complete 45 hours in **one** of the following emphasis areas:

Drawing

- 240, Drawing III
- 242, Figure Drawing III
- 340, Drawing IV
- 342, Figure Drawing IV
- 350, Design III
- 387, Advanced Problems in Drawing I
- 388, Advanced Problems in Drawing II
- 396, Senior Studio Seminar (6 hours)
- 6 hours of Painting or Printmaking
- 12 hours of Studio Art Electives

Graphic Design

- 210, Graphic Design I
- 211, Graphic Design II
- 220, Computer Art I
- 221, Computer Art II
- 310, Graphic Design III
- 311, Graphic Design IV
- 312, Special Techniques in Illustration and Graphic Design
- 383, Advanced Problems in Graphic Design I
- 384, Advanced Problems in Graphic Design II
- 389, Graphic Design Studio
- 396, Senior Studio Seminar (6 hours)
- 9 hours of Studio Art Electives

Painting

- 180, Painting I
- 280, Painting II
- 350, Design III
- 380, Painting III
- 381, Painting IV
- 385, Advanced Problems in Painting I
- 386, Advanced Problems in Painting II
- 396, Senior Studio Seminar (6 hours)
- 6 hours from the following list:
- 240, Drawing I
- 242, Figure Drawing III
- 340, Drawing IV
- 342, Figure Drawing IV
- 12 hours of Studio Art Electives

Photography

- 260, Digital Photography II
- 261, Color Photography I
- 264, Video Art I
- 350, Design III
- 360, Photography III
- 361, Color Photography II
- 391, Advanced Problems in Photography I
- 392, Advanced Problems in Photography II
- 396, Senior Studio Seminar (6 hours)
- 12 hours of Studio Art Electives

Art and Art History

Printmaking

270, Printmaking I
 271, Printmaking II
 340, Drawing IV
 342, Figure Drawing IV
 350, Design III
 370, Printmaking and Relief
 393, Advanced Problems in Printmaking I
 394, Advanced Problems in Printmaking II
 396, Senior Studio Seminar (6 hours)
 6 hours from the following list:
 272, Printmaking: Lithography I
 273, Printmaking: Screenprinting I
 277, Printmaking: Photolithography
 372, Advanced Lithography
 9 hours of Studio Art Electives, including one course in photography

General Fine Arts

24 hours must be taken at the 200 level or above.

The following courses are required:

350, Design III
 396, Senior Studio Seminar (6 hours)
 12 hours of Studio Art electives

Students must complete 15 hours of Art History, with at least 9 hours taken in residence at UM-St. Louis.

After fulfilling the general education and specific major degree requirements, students are to take the remaining hours required to complete the Studio Art 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, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, business, education, engineering, and interdisciplinary.

Minors

Minor in Art History A minor in art history requires the completion of at least 18 hours of art history courses. Students must take Art 5, Art 8 or Art 15. In addition, students are required to take at least one course in Western art, one course in non-Western art and one course at the 200-level. A maximum of 3 hours of internship can be applied toward a minor in art history. The GPA for the courses for the minor must be 2.0 or better. Nine of the 18 hours must be taken in residence at UM-St. Louis.

Minor in Studio Art Students who wish to minor in studio art must take a minimum of 18 hours with a grade point average of 2.0 or better. The requirements for the minor are as follows:

40, Drawing I
 140, Drawing II
 50, Design I

and two consecutive courses (six hours) in any single area to be selected from the following (students should be aware that courses are not always available in all areas):

Painting
 Printmaking (any one subfield)
 Photography
 Graphic Design
 Advanced Drawing

plus a studio art elective: one three-hour course.

Photographic Studies Certificate

UM-St. Louis students, graduates, and post-baccalaureate candidates may obtain a certificate in photographic studies by coordinating courses in and related to photography.

To be eligible for the certificate, undergraduates must complete a degree in a chosen major field. A faculty member of the Interdisciplinary Photographic Studies Committee will act as adviser to all students and will consult with the faculty adviser in the student's major to plan appropriate credits.

The Photographic Studies Certificate is the only such program in the country and should be of special interest to those considering a career in the arts, communications, history, science, business, advertising, or in photography itself. The program should also interest professional photographers, teachers, interested lay people, and graduates who are returning to school. This certificate is designed for all who have an intense interest in the myriad aesthetic and practical aspects of the medium.

Requirements

The following courses are required:

Art 60, Photography I
 Art 160, Photography II
 Art 165, History of Photography, or
 History 168, Photohistory
 Interdisciplinary 65/Art 65, Photography and Society
 Art 360, Photography III, or
 Interdisciplinary 390, Independent Studies in
 Photographic Studies

Art and Art History

Students must also take at least one three-hour course selected from the following departmental offerings: (New courses will be reviewed periodically for inclusion.)

Art 5, Introduction to Art
Art 161, Introduction to Digital Photography
Art 261, Color Photography I
Art 262, Non-Silver Photography
Art 263, Photography Since 1945
Art 264, Video Art I
Art 274/Philosophy 274, Philosophy of Art
Art 277, Printmaking: Photolithography
Art 360, Photography III
Art 361, Color Photography II
Art 364, Video Art II
Art 390, Special Studies
Art 391, Advanced Problems in Photography I
Art 392, Advanced Problems in Photography II
Biology 360, Techniques in Electron Microscopy
Comm 50, Introduction to Mass Media
Comm 70, Introduction to Cinema
Comm 210, Television Production
English 214/Comm 214, News Writing
English 215, Feature Writing
History 168, Photohistory
Interdisciplinary 40, The Black World
Interdisciplinary 365, Seminar in Photographic Studies
Interdisciplinary 390, Independent Studies in Photographic Studies
Psych 213, Principles of Perception
Psych 355, Psychology of Perception
Extension course, Professional Photography Seminar

Pre-Professional Graduation: Architecture

The Department of Art sponsors the 3+4 Program for the School of Architecture at Washington University. A student who transfers to the School of Architecture, Washington University, at the end of the junior year may graduate from UM-St. Louis 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 a major and lacks only the total hours (electives) necessary for a degree.

2) A student who has not completed required courses for a degree must remedy the deficiency with courses taken at the University of Missouri-St. Louis 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 the professional school.

3) A student who has not completed all the courses required for a major may, if the major department at UM-St. Louis agrees, 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 UM-St. Louis shall be waived where necessary for students graduating under this procedure.

Career Outlook

Study in art history broadens and enriches a general education, offering insight into the visual, architectural, and cultural artifacts left by earlier, as well as modern, civilizations. Art history graduates have found career opportunities in teaching, museums, galleries, libraries, historical societies, sales and auction houses, historic preservation, as travel guides, art administrators, editors and in art restoration.

Students with degrees in studio art find careers in teaching, advertising, public relations, graphic design, illustration, film and video production, art administration, art restoration, product and industrial design, framing and commercial photography.

Art and Art History

Course Descriptions

Courses in this section are grouped as follows: Art History and Studio Art. Prerequisites may be waived by consent of instructor. For the nonmajor, any number of studio courses will be accepted as electives.

The following courses fulfill the Humanities [H] breadth of study requirements: **ART HISTORY: 5, 8, 15, 65, 90, 105, 107, 108, 111, 112, 113, 114, 116, 117, 119, 125, 135, 137, 138, 145, 155, 158, 159, 165, 179, 191, 195, 205, 208, 212, 215, 217, 225, 235, 245, 255, 258, 263, 265, 274, 275, 276, 285, 290, 291, 292, 293, 294, 295, 296, 297, 298, 390, 395.**

Art History

5 Introduction to Art (3)

An introduction to major historical movements in Western art.

8 Introduction to Asian Art (3)

A survey of the major achievements in architecture, sculpture, and painting of India, China, Japan and Southeast Asia. Emphasis on religious, historical, and social context of the arts. This course fulfills the Cultural Diversity requirement.

15 Art of Africa, Oceania, and the Americas (3)

A survey of the art of tribal people of Africa, Oceania, and the Americas from prehistoric times through the present. The relationship of art to religion, myth, festival, and social life will be considered, as well as the effects of acculturation on the arts. This course fulfills the Cultural Diversity requirement.

65 Photography and Society (3)

(Same as Interdisciplinary 65.) 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. This course counts toward the major.

90 Freshman Seminar (3)

Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences.

105 Issues and Ideas in Art History (3)

Prerequisite: Art 5 or permission of instructor. Intensive studies of a few selected works from various eras and cultures, with special attention to the particular social and cultural factors surrounding their creation.

107 The Arts of China (3)

A survey of the major achievements in the history of Chinese art. Bronzes, sculpture, painting, calligraphy, ceramics, and jades will be considered within their historical, philosophical, and social context. This course fulfills the Cultural Diversity requirement.

108 The Arts of Japan (3)

A survey of the art and architecture of Japan from prehistory to the present. Topics will include sculpture, architecture, pottery, gardens, Japanese prints and paintings in their various forms, i.e. Chinese style, purely Japanese style, narrative scrolls, Zen, and Rimpa. This course fulfills the Cultural Diversity requirement.

111 Art and Archaeology of the Ancient World (3)

Prerequisite: Art 5. A survey of art in Egypt, the Ancient Near East, Greece, and Rome, beginning in the Neolithic era (8000-4000 BC) and ending with the Barbarian invasions of Italy in the fifth century A.D. The major highlights of architecture and city planning, sculpture, painting, pottery, and the minor arts will be covered.

112 Greek Art and Archaeology (3)

Prerequisite: Art 5. General survey of material culture in the Aegean basin, beginning with the Bronze Age (third millennium BC), and terminating in the late Hellenistic period (second century BC). For the Hellenistic period the course will trace Greek developments and influences outside of the Aegean, for example, in Italy and in Egypt.

113 Roman Art and Archaeology (3)

Prerequisite: Art 5. General survey of material culture in Italy and its dependencies beginning with prehistoric Italy (ninth and eighth centuries B.C.) and terminating in late antiquity (the fifth century A.D.). The course will focus on the regional variants of Roman art in such places as Gaul, Spain, Great Britain, North Africa, and the Greco-Roman East.

114 Early Christian Art and Archaeology (3)

Prerequisite: Art 5. The origins and development of Christian imagery prior to the fourth century, the Constantinian epoch and Late Antique developments to the death of Justinian. Attention will be paid to works of art and to the entire material culture of early Christianity.

116 North American Indian Art (3)

A detailed survey of the arts of North America from prehistoric times to the present. Cultures to be covered include: Moundbuilders, Northeast, Navajo, Pueblo peoples, Northwest Coast, and Eskimo. The relationship of art to religion, dance, philosophy, and social life will be explored. This course fulfills the Cultural Diversity requirement.

117 African Art (3)

A survey of the tribal and traditional arts of Black Africa. The function and context of art among specific peoples such as the Yoruba, Dan, Dogon, Kuba, and Kongo will be discussed. Emphasis will be placed on dance, festival, and religion as the primary contexts of African art. This course fulfills the Cultural Diversity requirement.

Art and Art History

119 Pre-Columbian Art of Mexico and Central America (3)

A survey of the arts of native peoples of Middle America before the coming of the Spaniards in 1519. The cultural context and meaning of sculpture, painting, architecture, and ritual among the Olmec, Maya, Aztec, and other tribes. This course fulfills the Cultural Diversity requirement.

125 Medieval Art (3)

Prerequisite: Art 5. A survey of the art and architecture of the Mediterranean World and northern Europe from late antiquity to the Late Gothic period (300-1300 A.D.). Focus on new styles and subject matter in painting, sculpture, and architecture.

135 European Art & Architecture 1300-1800 (3)

Prerequisite: Art 5. Between 1300 and 1800, European art changed from primarily a vehicle for the church and the princely court to an art that incorporated a wider spectrum of society. This course examines some of the artistic styles (Renaissance, Baroque, Rococo) and the social, political, and economic forces that contributed to these changes.

137 Early Renaissance Art & Architecture (3)

Prerequisite: Art 5. An exploration of the painting, sculpture, and architecture of the fourteenth and fifteenth centuries in Italy, the Netherlands, and Germany. Special attention given to public and private patronage, the interrelationships among regional schools, workshop procedures and images of women.

138 High Renaissance Art & Mannerism (3)

Prerequisite: Art 5. A survey of Italian art from the time of Leonardo da Vinci through the late phase of Venetian art. Artists to be examined include Leonardo, Michelangelo, Raphael, Sofonisba Anguissola, and Titian.

145 Baroque Art (3)

Prerequisite: Art 5. A survey of art and architecture in both northern and southern Europe from 1600 to 1750. Emphasis on the contributions of individual artists as well as the political, social, and philosophical background of the visual arts.

155 Modern Art (3)

Prerequisite: Art 5. A survey of European art of the nineteenth and twentieth centuries.

158 American Art (3)

Prerequisite: Art 5. An overview of the major developments of painting, sculpture and the decorative arts in the United States since 1600. Emphasis on the contributions of individual artists and the changing cultural contexts in which they worked.

159 American Architecture (3)

Prerequisite: Art 5. A brief history and analysis of American architecture, investigations of technological process, urban planning, and the dominating social attitudes which govern architectural development.

165 History of Photography (3)

Prerequisite: Art 5 or consent of instructor. A study of photography: its historical development, an examination of it as an art medium, and its influence on the development of modern art.

179 Special Topics in Art History (1-3)

Prerequisite: Art 5 or consent of instructor. Selected topics in art history. This course may be repeated for credit.

191 Art Since 1945 (3)

Prerequisite: Art 5. An overview of the major developments in European and American art since World War II. Topics include abstract expressionism, pop art, conceptual and minimal art, performance and video.

195 Sophomore/Junior Seminar: The Methods of Art History (3)

Prerequisites: Art 5 and nine additional hours in art history. An introduction to the methods of art historical analysis. Emphasis on research techniques and writing. This course must be taken before a student's senior year.

203 Media and Technique in Art History (3)

Prerequisite: Art 5, and two other courses in art history. Technical demonstration of and research into various materials and media used by artists. In addition to ancient media such as egg tempera and fresco, it will include modern media such as photography and video.

205 Advanced Issues and Ideas in Art History (3)

Prerequisites: Art 5 and three additional courses in art history, or permission of the instructor. Seminar format. Intensive study of a few objects or issues in the history of art, focusing on issues which crosscut periods or geographic regions.

208 Topics in Asian Art (3)

Prerequisite: Art 8 or permission of instructor. A study of selected topics in Asian art. The content will vary, focusing on topics such as Chinese and Japanese landscape in paintings and in gardens, images of women in Asian art, or the Spirit of the Brush in Chinese and Japanese painting. May be repeated for credit with permission of instructor and adviser. This course fulfills the Cultural Diversity requirement.

212 Topics in Ancient Art and Archaeology (3)

Prerequisites: Art 5 or Interdisciplinary 10 and one of the following: Art 111, 112, 113, 114, or permission of instructor. Intensive study of some aspect of Classical or Early Christian art. Content will vary. May be repeated for credit with permission of adviser.

215 Topics in Tribal Arts (3)

(Same as Anthropology 225) Prerequisite: One of the following: Art 15, 116, 117, 119, or consent of instructor. Intensive study of the arts of several tribal groups. Inquiry into relationships between art and culture by means of an examination of myth, literature, festival, and social life. Seminar format. May be repeated for credit with permission of adviser. This course fulfills the Cultural Diversity requirement.

Art and Art History

217 Topics in African Art (3)

Prerequisite: Art 15 or 117 or permission of instructor. A study of selected topics in the history of African art. The content of the course will vary, focusing upon a single topic, which might include Islam and the arts of Africa, Christianity and the arts of Nubia and Ethiopia, art and festival in West Africa, or women and art in sub-Saharan Africa. May be repeated for credit with permission of instructor. This course fulfills the Cultural Diversity requirement.

225 Topics in Medieval Art (3)

Prerequisite: Art 125 or consent of instructor. A study of selected topics in Medieval art. The content of the course will vary, focusing on single topics such as manuscript painting, the Gothic cathedral and its sculptural decoration, or the art of pilgrimage churches. May be repeated for credit with permission of instructor.

235 Topics in Renaissance Art (3)

Prerequisite: Art 135, 137 or 138 or consent of instructor. Studies of selected topics, which will vary. Subjects to be considered may include the art of Florence, the role of patronage in Renaissance Italy, and Papal art. May be repeated for credit.

245 Topics in Seventeenth and Eighteenth-Century European Art (3)

Prerequisite: Art 145 or consent of instructor. A study of selected topics in Baroque and Rococo art. The content of the course will vary, focusing on single areas, such as the Baroque in Rome; or on major artists, such as Bernini, Rubens, and Rembrandt. May be repeated for credit with permission of instructor and adviser.

255 Topics in Nineteenth and Twentieth-Century European Art (3)

Prerequisite: Art 155 or consent of instructor. Intensive study of selected topics in European art. May be repeated for credit with permission of instructor and adviser.

258 Topics in American Art (3)

Prerequisite: Art 158 or 159 or consent of instructor. Intensive study of selected topics in American art from colonial beginnings to the present. Topics may include the image of the family in art, patronage, the relationship between art and literature, and the role of the artist in modern society. May be repeated for credit with permission of instructor and adviser.

263 Photography Since 1945 (3)

Prerequisites: Art 5 and either Art 65 or 165 or permission of the instructor. Seminar on creative photography from the postwar period to the present. Topics will include the relation of this medium to other arts, including sculptural and performance art, as well as current modes of photographic depiction in landscape and studio work.

265 Topics in Photographic Studies (3)

(Same as Interdisciplinary 265.) Prerequisite: Permission of instructor. Advanced study of specific styles, periods, or issues within photographic history.

274 Philosophy of Art (3)

(Same as Philosophy 274.) A study of issues concerning the definition of art, meaning and truth in the arts, aesthetic experience, and criticism.

275 The Art of Print (3)

Prerequisite: Art 5. Dealing with the history of print forms: woodcuts, etchings, engravings, lithographs, silkscreens, monotypes, and mixed media. Special emphasis will be given to the importance of prints to the art and artists of our time.

276 Women and the Visual Arts (3)

Art 5 or enrollment in the Women's Studies Certificate Program recommended. Selected topics concerning women as creators, users, and subject matter of art. Great women artists in the Western world will be studied, as well as women weavers, potters, and sculptors in tribal society.

285 Studies in Architectural History (3)

Prerequisite: Art 5 or consent of instructor. A study of selected topics in architectural history. The content of the course will vary, and the course may be repeated for credit with permission of the instructor and departmental advisor. Possible topics include the history of the castle, factory architecture, the evolution of the Gothic cathedral, and domestic and vernacular architecture.

287 Professional Internship (1-6)

Prerequisites: Art 5 and 6 hours in Art History or Studio Art. The internship provides experience in museums, historical societies, galleries, design firms, or visual resource collections. Students will assist in the diverse duties associated with the day-to-day functions of the institution, under the joint direction of a faculty advisor and a supervisor at the institution. Course requirements may include readings, research assignments, and/or a paper. This course may be counted for art history or studio art credit with the department's consent.

288 UM-St. Louis/Saint Louis Art Museum Internship (3)

Prerequisites: Art History or Anthropology major and junior/senior standing. Student, who is selected competitively after submitting application to the UM-St. Louis/St. Louis Art Museum Internship Committee, is to complete 20 hours of work per week under the direction of a curator or curators at the Saint Louis Art Museum. The precise schedule and particular projects are to be determined by the curator and the student together. Projects can include research on the Museum collection, research on possible Museum acquisitions, checking label information, research or compilation of bibliography for exhibitions, or other tasks at the discretion of the curator. Each internship runs for the duration of one semester.

Art and Art History

289 Visual Resources Management (3)

Prerequisites: Art 5 and 3 credit hours in other art history courses, or permission of instructor. This hands-on course in the art department's slide library will consist of the daily operation and management of, as well as technological and theoretical approaches to visual resource collections. The course content relies upon the Art Department's slide library of over 80,000 slides, videotapes, and other visual materials.

290 Special Study (1-10)

Prerequisites: Junior or senior standing and consent of department and instructor. Independent study through readings, reports, or field research.

291 Topics in Contemporary Art (3)

Prerequisites: Art 5 and Art 191 or permission of instructor. Seminar on particular topics in European or American art since 1945. Topics may include contemporary feminist art, postmodernism, or abstract expressionism. May be repeated for credit with permission of instructor and adviser.

292 Museum Studies (3)

Prerequisites: Art 5 and six credit hours in other art history courses. This course is intended as an introduction to the function and operation of the art museum. Sessions will include the history of art museums and collecting policies; the organization of art museums; the tasks of the curator; the registration practices; art conservation; the museum as an educational institution; the organization and planning of permanent galleries; and the planning and installation of temporary exhibitions.

293 Art Gallery Management (3)

Prerequisites: Art 5 and six credit hours in other art history courses. This course will consider the practical application of professional training in art history as it applies to gallery management. Topics covered will include: grant writing in the arts, the development of art exhibits, the role of the art curator, and the operation of a gallery. All students will get hands-on experience in Gallery 210.

294 Art Criticism (3)

Prerequisite: Art 155 or Art 191 or permission of instructor. An overview of the history and function of art criticism, focusing principally on the theory and criticism of twentieth-century art. Students will attempt their own critical writings on contemporary art.

295 The Artist and the City (3)

Prerequisite: Art 5. Examines the role of urban centers as a focus for significant artistic activity, as a recurring theme in art, and as a spatial and physical architectural reality. Aspects of urban planning, urban imagery in art, and the social, political, and personal networks artists develop as a result of living in particular urban centers at particular moments in history will be among the topics discussed.

296 The Nude in Art (3)

Prerequisites: Art 5 and one other course in art history. An exploration of the various meanings of nudity in art. The cultural, social, and psychological contexts of nudity in art will be examined in different historical periods and geographic regions, both Western and non-Western. Representations of both males and females will be analyzed in terms of gender construction, political authority, and personal identity.

297 Landscape Perspectives in Art (3)

Prerequisite: Art 5. This seminar considers the various conventions for representing landscape and nature, and human relationships to landscape, throughout history and across cultures. Issues to be considered may include landscape as metaphor in European painting, contemporary earthworks, landscape photography, and the relationship of artist to landscape in the non-Western world.

298 The Portrait in Historical and Cross-Cultural Contexts (3)

Prerequisite: Art 5 or permission of instructor. This class will examine the development of portraiture in the western tradition as well as its use and development in non-western cultures. Topics to be investigated will include a wide variety of stylistic approaches and media.

390 Special Study (1-10)

Prerequisites: Junior/senior standing and consent of department chairperson and instructor. Independent study through readings, reports, or field research.

395 Senior Art History Seminar (3)

Prerequisite: Art 195 and Senior standing in art history or consent of instructor. Intensive reading, discussion, and writing on topics to be announced.

435 Foundations of Museology I (3)

Prerequisite: Consent of Director of Museum Studies Program. (Same as Anthropology 435 and History 435.) 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.

436 Foundations of Museology II (3)

Prerequisite: Art 435 and consent of Director of Museum Studies Program. (Same as Anthropology 436 and History 436.) 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.

Art and Art History

437 Effective Action in Museums (3)

Prerequisite: Consent of Director of Museum Studies Program. (Same as Anthropology 437 and History 437.) 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.

438 Museum Studies Master's Project (4)

Prerequisite: Consent of Director of Museum Studies Program. (Same as Anthropology 438 and History 438.) Research and writing/exhibit development on a selected topic.

458 Topics in American Art (3)

Prerequisite: Graduate standing and consent of instructor. This course examines a discrete aspect of the history of American art within the changing social, cultural and historical contexts of Euro-American and/or Native American experiences and traditions.

492 The History of the Visual Arts in American Museums (3)

Prerequisite: Graduate standing and consent of instructor. This course is an introduction to selected topics in the history of museology, focusing on art and anthropology museums as sites for the interpretations of art and culture, and as contested meeting grounds for various views of history and culture.

Studio Art

2 Introduction to Studio Art (3)

An introduction to drawing, painting, and design in a beginning studio environment. This course is designed to provide basic skills and understanding of studio experience for the non-art major. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

30 Ceramics I (3)

An introduction to basic methods and theory of ceramics including work with hand-built construction, wheel techniques, and glazing. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

40 Drawing I (3)

An introduction to drawing through the study of figure, object, and environment. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

42 Figure Drawing I (3)

Basic studies of the human form and anatomy from the model in a variety of drawing media. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

50 Design I (3)

Studio problems in the creative use and integration of the elements of two-dimensional design: line, form, space, texture. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

60 Photography I (3)

An introduction to the techniques and aesthetics of black and white photography, the camera and the darkroom. Students must provide a camera with adjustable speeds and aperture. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

74 Special Topics in Studio Art (1-3)

Selected topics in studio studies. This course may be repeated for credit. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

80 Comics & Cartoon Illustration (3)

A course in creating and appreciating the world of comics and cartoons. This course will investigate the tools and techniques for creating cartoons, cartoon illustrations and the world of comics. Students will create their own cartoons with traditional media and also with computers. While designed for beginners, experienced artists will be encouraged to perfect their personal styles. The class will create and print its own comic book. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

130 Ceramics II (3)

Prerequisite: Art 30. A continuation of Art 30. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

132 Sculpture I (3)

An introduction to traditional and contemporary materials, aesthetics, and theories of three-dimensional art. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

134 Art Activities for Elementary Schools (3)

(Same as ELE ED 179.) A study of art principles and laboratory experiences with various media and materials. Stresses curriculum planning and development of the elementary school program in art. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

Art and Art History

140 Drawing II (3)

Prerequisite: Art 40. The development of drawing skills through continued observation and problems of invention. A further exploration of varied drawing materials and techniques including graphite, charcoal, conte crayon, and inks. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

142 Figure Drawing II (3)

Prerequisite: Art 42. Continuation of Figure Drawing I. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

150 Design II (3)

Prerequisite: Art 50. A continuation of Art 50, two-dimensional design, with introduction to color theory. Some application of mixed media problems. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

160 Photography II (3)

Prerequisite: Art 60. Continuation of Photography I at the intermediate level. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

161 Introduction to Digital Photography (3)

Prerequisite: Art 60 or consent of instructor. An introduction to computer usage in photography. The basic computer techniques and software applications for digitizing, retouching, enhancing and altering photographic images will comprise the core of this course. This class will involve both learning exercises and the creation of original computer-aided photographic art. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

180 Painting I (3)

Prerequisite: Art 40, Art 50 or consent of instructor. An introduction to the use of oil and/or acrylic painting media. Studio problems to develop technical and expressive skills on various surfaces. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

210 Graphic Design I (3)

Prerequisite: Art 50 and Art 140 or consent of instructor. Introductory studio problems in layout, lettering, and design with typographic elements. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

211 Graphic Design II (3)

Prerequisite: Art 210 or consent of instructor. Continuation of Graphic Design I. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

220 Computer Art I (3)

Prerequisite: Art 50. An introduction to the use of computer graphics software for the creation of artwork applicable to the advertising and graphic design industry. No previous computer experience is necessary. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

221 Computer Art II (3)

Prerequisite: Art 220. Designed to familiarize students with the methods and processes and computer functions used in graphic art and illustrations. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

232 Sculpture II (3)

Prerequisite: Art 132. Continuation of Sculpture I. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

240 Drawing III (3)

Prerequisites: Art 40 and Art 140. This course offers studio problems designed to further the development of drawing skills in various media. Limited color will also be introduced. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

242 Figure Drawing III (3)

Prerequisites: Art 42 and Art 142. Advanced study of the human form and anatomy from the model in a variety of drawing media. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

250 Composition (3)

Prerequisites: Art 50 and Art 150. An investigation of the use of formal design elements as used in historic and contemporary art. Weekly studio problems and discussions will concentrate on skills, application, and unifying effects of compositional elements on a variety of visual art forms. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

260 Digital Photography II (3)

Prerequisite: Art 161. Intermediate exploration of the aesthetics and techniques of digital photography. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

261 Color Photography I (3)

Prerequisite: Art 60 or equivalent. An introduction to the techniques and aesthetics of color photography. Mastering the printing and finishing processes and producing a color print portfolio will be the requirements of this class. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

Art and Art History

262 Non-Silver Photography (3)

Prerequisites: Art 60 and Art 160. An introduction to the aesthetics and techniques of non-traditional photographic processes. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

264 Video Art I (3)

Prerequisite: Art 160 or permission of instructor. An introduction to video as an art form. Knowledge of contemporary uses and video techniques will be stressed. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

270 Printmaking I (3)

Prerequisite: Art 50 and Art 140 or consent of instructor. An introduction to printmaking techniques, materials, and theories. The course will include work in a variety of print materials. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

271 Printmaking II (3)

Prerequisite: Art 270 or consent of instructor. A continuation of Printmaking I. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

272 Printmaking: Lithography I (3)

Prerequisite: Art 50 and Art 140 or consent of instructor. An introduction to printmaking skills and theory in stone and plate lithography. Studio problems in the use of materials and equipment. Attention will be given to individual development. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

273 Printmaking: Screenprinting I (3)

Prerequisite: Art 270. An introduction into the techniques, methods, and aesthetics of screenprinting. Studio problems involving uses and approaches will be emphasized. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

277 Printmaking: Photolithography I (3)

Prerequisite: Art 60 or departmental consent. An introduction to printmaking skills and theory in stone and plate lithography with particular emphasis on the photographic applications of the process. Some attention will also be given to commercial printmaking applications while studio problems in the use of materials and equipment will be stressed. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

280 Painting II (3)

Prerequisite: Art 180 or consent of instructor. Continuation of basic studio problems in painting media. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

283 Watercolor Painting (3)

Prerequisites: Art 50 and Art 140. Beginning problems in watercolor painting. Includes the study of traditional and contemporary approaches to color, color techniques, and treatment of papers. May be repeated for credit. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

290 Special Study (1-10)

Prerequisites: Junior/Senior standing and consent of department and instructor. Independent study through readings, reports or field research. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

310 Graphic Design III (3)

Prerequisites: Art 211. Advanced studio problems to further the understanding of design and its relationship to typographic elements, illustration, and communication. The course will encourage both conceptual and technical development of the designer. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

311 Graphic Design IV (3)

Prerequisite: Art 310. Further studio problems in the graphic arts. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

312 Special Topics in Illustration and Graphic Design (3)

Prerequisite: Art 311 or consent of instructor. Illustration and graphic design techniques as diverse as cartooning, web page design, multi-media animation, and interactive kiosk design (among others) are explored in this class. Each semester, one or more of these specialties are offered. Emphasis is placed on the practical applications of these approaches as well as the production of a strong student portfolio that will demonstrate the mastery of these skills.

334 Contemporary Art Education: Craft and Theory (1-2)

Prerequisite: Upper-division standing or consent of instructor. Intensive study for advanced students and art teachers, emphasizing specialized techniques and innovative concepts. Topics to be announced. May be repeated for credit. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

340 Drawing IV (3)

Prerequisite: Art 240. Studio problems with emphasis on color and multi-material approach to drawing. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

342 Figure Drawing IV (3)

Prerequisite: Art 242. Continuation of Figure Drawing III. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

Art and Art History

350 Design III (3)

Prerequisites: Art 50 and Art 150. Advanced studio problems in design materials. Use of two-dimensional and three-dimensional mixed media. Experimental use of materials and media will be introduced. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

360 Photography III (3)

Prerequisite: Art 160. An exploration into contemporary theories and trends in photography. Advanced projects, portfolios and techniques will be expected from those enrolled. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

361 Color Photography II (3)

Prerequisite: Art 261. An advanced exploration into the aesthetics and techniques of color photography. Students will be expected to refine their vision utilizing color processes. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

364 Video Art II (3)

Prerequisite: Art 264. An advanced exploration of video as a visual art. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

370 Printmaking and Relief (3)

Prerequisites: Art 271. Advanced problems in printmaking. Problems in relief printmaking. Work in wood and mixed materials. Development of skills and aesthetic judgments in the media. May be repeated for credit with consent of instructor. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

372 Advanced Lithography (3)

Prerequisites: Art 273. Continuing problems in lithography with problems in black and white, photolithography, and/or color. May be repeated for credit. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

380 Painting III (3)

Prerequisite: Art 280 or consent of instructor. Advanced studio problems in painting media. Attention paid to individual development of theory, expression, and technique. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

381 Painting IV (3)

Prerequisite: Art 380. A continuation of Painting III. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

383 Advanced Problems in Graphic Design I (3)

Prerequisite: Art 311. This course is focused on professional-level art and portfolio production. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

384 Advanced Problems in Graphic Design II (3)

Prerequisite: Art 383. A continuation of Art 383. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

385 Advanced Problems in Painting I (3)

Prerequisite: Art 381. This course is focused on professional-level art and portfolio production. Non-traditional materials might be explored. Attention is focused on individual development of painting theory, self-expression, and advanced techniques. The student is expected to assume a substantial responsibility with regard to direction, motivation, and content. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

386 Advanced Problems in Painting II (3)

Prerequisite: Art 385. A continuation of portfolio production in Art 385. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

387 Advanced Problems in Drawing I (3)

Prerequisite: Art 340. This course is focused on professional-level art and portfolio production. It offers studio problems designed to further the development of drawing skills. Emphasis will be given to the study of drawing as an independent art form. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

388 Advanced Problems in Drawing II (3)

Prerequisite: Art 387. A continuation of Art 387. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

389 Graphic Design Studio (3)

Prerequisite: Art 384 or consent of instructor. Students will work on actual client projects in a studio setting from creative concept through client presentation. Studies will include client interviews, project planning, studio operations, project budget and estimating, vendor selection, prepress preparation, working in creative groups and professional presentations.

390 Special Study (1-10)

Prerequisites: Junior/senior standing and consent of department chairperson and instructor. Independent study through readings, reports, or field research. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

Art and Art History

391 Advanced Problems in Photography I (3)

Prerequisite: Art 360. This course is focused on professional-level art and portfolio production. Students may employ black and white, color, non-silver or other traditional or non-traditional press for projects in this course. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

392 Advanced Problems in Photography II (3)

Prerequisite: Art 391. A continuation of Art 391. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

393 Advanced Problems in Printmaking I (3)

Prerequisite: Art 370. This course is focused upon professional-level art and portfolio production. After completion of this and the preceding course, students should be ready to meet the artistic and intellectual demands of today's visual art world. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

394 Advanced Problems in Printmaking II (3)

Prerequisite: Art 393. A continuation of Art 393. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

396 Senior Studio Seminar (3)

Prerequisite: Senior standing and Art 311, Art 340, Art 342, Art 350, Art 360, Art 370, or Art 381. Weekly critiques and discussions of technical and professional issues. Will instruct students in methods of portfolio display, documentation, gallery representation, grant writing, and professional preparation. May be repeated for credit. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

399 Special Study in Studio Art (1-10)

Prerequisites: Junior/Senior standing and consent of both department chairperson and instructor. Independent study through intensive independent studio projects, readings, reports and/or field research and apprenticeships. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

Biology**Faculty**

Albert Derby, Associate Professor*, Chairperson
Ph.D., City University of New York

Charles R. Granger, Professor*
Ph.D., University of Iowa

Arnold B. Grobman, Professor Emeritus*
Ph.D., University of Rochester

James H. Hunt, Professor*
Ph.D., University of California-Berkeley

Frank Moss, Professor*
Ph.D., University of Virginia (primary appointment with
Physics and Astronomy)

Susanne S. Renner, Professor*
Dr. Habil; Dr. rer. Nat, University of Hamburg

Robert E. Ricklefs, Curators Professor*
Ph.D., University of Pennsylvania

Martin Sage, Professor*; Interim Dean, Arts and
Sciences, Ph.D., Nottingham University

Victoria Sork, Professor*;
Ph.D., University of Michigan

Zuleyma Tang-Martinez, Professor*
Ph.D., University of California-Berkeley

Teresa Thiel, Professor*; Director, Biotechnology
Program, Ph.D., Case Western Reserve University

Douglas Wartzok, Professor*; Dean, Graduate School
Ph.D., Johns Hopkins University

Lon A. Wilkens, Professor*
Ph.D., Florida State University

Shirley T. Bissen, Associate Professor*
Ph.D., University of Michigan

Harvey P. Friedman, Associate Professor*
Ph.D., University of Kansas

Lawrence D. Friedman, Associate Professor*
Ph.D., University of Wisconsin

Donald E. Grogan, Associate Professor Emeritus*
Ph.D., University of Missouri-Columbia

Bette A. Loiselle, Associate Professor*; Director,
International Center for Tropical Ecology
Ph.D., University of Wisconsin

Robert J. Marquis, Associate Professor*
Ph.D., University of Iowa

Jane A. Starling, Associate Professor*
Ph.D., The William Marsh Rice University

John G. Blake, Assistant Professor*
Ph.D., University of Illinois

Godfrey R. Bourne, Assistant Professor*
Ph.D., University of Michigan

Carol A. Kelly, Assistant Professor*
Ph.D., University of Illinois-Urbana-Champaign

Amy F. MacRae, Assistant Professor*
Ph.D., University of Georgia

Mariette P. Baxendale, Lecturer
Ph.D., St. Louis University

Carol Weber, Lecturer
M.S., University of Missouri-St. Louis

Terry L. Erwin, Adjunct Professor*
Ph.D., University of Alberta, Edmonton

Peter H. Raven, Adjunct Professor*; Director, Missouri
Botanical Garden
Ph.D., University of California-Los Angeles

Bruce Allen, Adjunct Associate Professor*
Ph.D., University of Cincinnati

Paul E. Berry, Adjunct Associate Professor*
Ph.D., Washington University

Deborah A. Clark, Adjunct Associate Professor*
Ph.D., University of Wisconsin

David B. Clark, Adjunct Associate Professor*
Ph.D., University of Wisconsin

Thomas B. Croat, Adjunct Associate Professor*
Ph.D., University of Kansas

William G. D'Arcy, Adjunct Associate Professor*
Ph.D., Washington University

Peter Goldblatt, Adjunct Associate Professor*
Ph.D., University of Cape Town, South Africa

Peter E. Hoch, Adjunct Associate Professor*
Ph.D., Washington University

Timothy Killeen, Adjunct Associate Professor*
Ph.D., Iowa State University

Robert E. Magill, Adjunct Associate Professor*
Ph.D., Texas A&M

David A. Neill, Adjunct Associate Professor*
Ph.D., Washington University

Ishan A. Al-Shehbaz, Adjunct Assistant Professor*
Ph.D., Harvard University

Cheryl S. Asa, Adjunct Assistant Professor*
Ph.D., University of Wisconsin-Madison

Stanton Braude, Adjunct Assistant Professor*
Ph.D., University of Michigan

James S. Miller, Adjunct Assistant Professor*
Ph.D., St. Louis University

Peter M. Richardson, Adjunct Assistant Professor*
Ph.D., University of London

George E. Schatz, Adjunct Assistant Professor*
Ph.D., University of Wisconsin-Madison

Charlotte Taylor, Adjunct Assistant Professor*
Ph.D., Duke University

Hendrik H. vanderWerff, Adjunct Assistant Professor*
Ph.D., State University of Utrecht, The Netherlands

Michael D. Ward, Adjunct Assistant Professor,
Director, Allied Health Programs, Jewish Hospital
College of Nursing and Allied Health
Ph.D., St. Louis University

David F. Russell, Visiting Assistant Professor
Ph.D., University of California-San Diego

Donna Duberg, Adjunct Lecturer; Chair CLS Program,
Jewish Hospital College of Nursing and Allied Health
M.S. Michigan State University

*members of Graduate Faculty

General Information

Degrees and Areas of Concentration The Department of Biology provides academic programs leading to the B.A. or B.S. in biology. In cooperation with the School of Education, the biology 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; in cooperation with the Evening College, the department offers courses in clinical laboratory science and cytotechnology. The Department of Biology also offers graduate work leading to the Master of Science and the Doctor of Philosophy degrees in biology. The graduate program includes a cooperative program with the Missouri Botanical Garden for students who concentrate in Evolutionary Biology with

Biology

emphasis areas of Plant Systematics and Environmental Studies.

Biology faculty members are engaged in teaching and research in areas ranging from molecular biology to population studies. Majors have the chance to take courses which help them develop both theoretical and experimental backgrounds necessary for further work in some of the most rapidly expanding fields of biological science or to pursue in-depth studies in specific areas through advanced courses, seminars, and individualized research programs.

Departmental Honors

Candidates for the B.A. or B.S. degree are eligible for Departmental Honors if they:

- 1) have a minimum of 3.2 overall GPA and a minimum 3.2 average in biology courses used to complete the major;
- 2) complete a minimum of two credit hours of Biology 390, Research; and
- 3) complete an honors thesis based on Biology 390 research work. The academic record and thesis will be evaluated by the Honors Committee and those students who qualify will be recommended for honors.

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. Students should consult their adviser and the chairperson of the biology department.

Graduate Studies

The Department of Biology offers graduate work leading to the M.S. and Ph.D. degrees in biology. Graduate students may work toward an M.S. degree in three broad areas of biology: (a) Cellular, Molecular, and Developmental Biology, (b) Physiology and Organismal Biology, and (c) Ecology, Evolution, and Systematics. Graduate students in the Ph.D. programs will receive training in several areas of Evolutionary Biology. 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 through a cooperative graduate program.

Objectives of the Master's Degree program are to provide the research-oriented training necessary for students to enter doctoral programs in biology; to develop professional biologists qualified to function in responsible technical positions; and to train secondary school and junior college biology teachers.

The objectives of the Ph.D. program are to train biologists for academic and professional positions in research and teaching. Ph.D. students in the areas of Plant Systematics and Environmental Studies have the opportunity for specialized training in tropical biology and conservation biology. This training is intended to prepare students for research careers and for leadership and scientific positions involving the conservation and management of tropical ecosystems.

Graduate Assistantships

Stipends for teaching and research assistantships are awarded on a competitive basis to qualified graduate students in Master's or Ph.D. programs. Out-of-state educational fees are waived for graduate assistants. Applications for assistantships must be sent to the Director of Graduate Studies in the Department of Biology and be received by February 1.

Facilities

Department facilities include research and teaching laboratories, environmental chambers, greenhouses, and a large array of supporting modern research instrumentation. Also available are wildlife facilities at Weldon Springs Experimental Farm and Tyson Tract, both within 30 to 45 minutes of the campus.

Cooperative Programs

The department also participates in a cooperative consortium program in biology with Washington University, St. Louis University, Southern Illinois University-Edwardsville, and the Missouri Botanical Garden.

Undergraduate Studies

General Education Requirements

Students must satisfy the University and College general education requirements. Biology courses may be used to meet the science and mathematics requirement of the University.

The foreign language requirement of the College of Arts and Sciences fulfills the departmental requirements for the B.A. degree. 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 basis. Excluded from this option are required courses in chemistry, physics, mathematics, or psychology, and biology courses other than Biology 389, Senior Seminar, and Biology 390, Research.

Degree Requirements

Bachelor of Arts in Biology

The B.A. degree provides maximum flexibility for biology majors to pursue an undergraduate liberal arts course of study that can lead to professional careers in medicine, allied health, public and environmental health, law, and graduate studies in the life sciences. Candidates must have a cumulative grade point average of 2.0 or better in biology courses. All B.A. degree majors must take at least 39 credit hours but not more than 50 hours in appropriate biology coursework. The following **biology foundation** courses must be included in the 39 credit hours.

Biology

Foundation Courses

11, Introductory Biology I
12, Introductory Biology II
210, Cell Structure and Function
224, Genetics
246, Introduction to Evolution
371, Biochemistry
389, Senior Seminar, or 285 and 286 for those seeking teacher certification.

Lecture Course Requirements

An additional three lecture courses are required and can consist of any of the other lecture courses offered at the 200-level or above. At least one of the courses must be at the 300-level. Biology 371, 389 and 390 cannot be used to fulfill this requirement.

Laboratory Course Requirements

In addition to the lecture course requirements, three laboratory courses, independent or integrated into a lecture course, will be required. They may be taken from any of the lecture-laboratory or laboratory courses offered. Introductory, General Biology, and Biology 390 laboratories cannot be used to fulfill this requirement.

Off-campus transfer students must satisfactorily complete at least 12 credit hours of UM-St. Louis biology course work (including two laboratories) at the 200 level or above before receiving a B.A. degree from the College of Arts and Sciences with a major in biology.

Related Area Requirements

The following courses in chemistry are required:
11, Introductory Chemistry I (or 1, General Chemistry I, plus 9, General Chemistry II)
12, Introductory Chemistry II
261, Structural Organic Chemistry

and one of the following chemistry courses:

122, Quantitative Analysis
262, Organic Reactions
263, Techniques of Organic Chemistry

Also required:

Math 30, College Algebra, and
Math 35, Trigonometry
Statistics 31, Elementary Statistical Methods or
Statistics 132, Applied Statistics I, or
Educ 330, Educational Statistics, or
Psyc 201, Psychological Statistics, or
Biol 388, Biometry
Math 100, Basic Calculus or
Math 80, Analytical Geometry and Calculus
Phys 11, Basic Physics
Phys 12, Basic Physics

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 foundation courses and general education requirements as those seeking the Bachelor of Arts degree. In addition, certain minimal requirements in depth of study, laboratory experience, research, data processing, communication skills, and background in associated science areas are required.

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.

In order to fulfill the requirements for the B.S. degree a minimum of 46 hours but not more than 50 hours must be completed in appropriate biology course work. A minimum of 17 hours in biology (including three laboratory courses) must be completed at UM-St. Louis. Candidates must have a cumulative grade point average of 2.0 or better in biology courses.

Foundation Courses

All candidates for the B.S. degree must successfully complete the same basic courses as those for the B.A. degree.

Lecture Course Requirements

An additional four lecture courses are required and can consist of any of the other lecture courses offered at the 200-level or above. At least two of the courses must be at the 300-level. Selection of the 300-level courses should reflect the career interest of the student and at least one of the courses should be in a topic area that could lead to an independent research project (Biology 390). Biology 371, 389 or 390 cannot be used to fulfill this 300-level course requirement.

Laboratory Experience

A minimum of five laboratory courses must be taken to satisfy the Bachelor of Science requirements. They may be taken from any of the laboratory courses, independent or integrated with lecture, that are offered. Introductory, General Biology, and Biology 390 laboratories cannot be used to fulfill this requirement.

Basic Skills Requirement

There are certain skills outside the biology subject matter that are needed to function adequately in a research environment. The Basic Skills Requirement is designed to provide the student with a background in data processing and communication and knowledge in associated science areas.

1) **Data Processing:** Students must show a basic understanding of mechanisms for handling data by successfully completing one course in each of the following sets:

Biology

Set A. Statistics

Statistics 31, Elementary Statistical Methods, or
Statistics 132, Applied Statistics I or
Educ 330, Educational Statistics, or
Psych 201, Psychological Statistics, or
Biol 388, Biometry

Set B. Computer Science

CompSci 125, Introduction to Computer Science or
Bus 103, Computers and Information Systems

2) **Communication Skills** Courses in formal speaking and technical writing are required to develop the minimal communication skills needed to transmit scientific information. The following courses satisfy this requirement:

Comm 40, Introduction to Public Speaking
Writing
Eng 213, Technical Writing
Eng 216, Writing in the Sciences*

*Preferred

3) **Associated Science Area:** The following courses or their equivalents must be successfully completed in science areas related to biology:

Phys 11, Basic Physics
Phys 12, Basic Physics
Chem 11, Introduction Chemistry I or
Chem 1, General Chemistry I, plus
Chem 9, General Chemistry II
Chem 12, Introductory Chemistry II
Chem 261, Structural Organic Chemistry
Chem 262, Organic Reactions
Chem 263, Techniques of Organic Chemistry, or
Chem 122, Quantitative Analysis
Phil 156, Medical Ethics, or
Phil 280, Philosophy of Science
Math 30, College Algebra and
Math 35, Trigonometry
Math 100, Basic Calculus or
Math 80, Analytical Geometry and Calculus I

Research Requirement

All students acquiring a Bachelor of Science degree are strongly encouraged to complete a minimum of two credit hours of undergraduate research, Biology 390. 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.

Biology majors may take any of the following 100-level biology courses:

110, Human Biology
113, Human Physiology and Anatomy I
114, Human Physiology and Anatomy II
115, Human Genetics
116, General Microbiology
118, General Microbiology Laboratory

120, Environmental Biology
130, Global Ecology
140, Female Sexuality
150, Plants and Civilization

These courses **do not count** toward the credit hours required for a major, but they may be included in the 120 hours required for graduation as elective credit.

Bachelor of Science in Education with Emphasis in Biology

The B.S. Ed. is a professional degree designed for those 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 Biology 285, Curriculum and Methods of Teaching Life Sciences, and Biology 286, Laboratory in Teaching Life Sciences, are substituted for Biology 389, Senior Seminar. Students must also fulfill the requirements for the B.S. Ed. degree as prescribed by the School 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 School of Education by fulfilling the B.A. or B.S. with certain prescribed courses in biology, with the exception of Biology 389, Senior Seminar, and in addition, completing the following courses:

Psych 3, General Psychology
Psych 271, Adolescent Psychology
Ed Fnd 111, The School in Contemporary Society
English 216, Writing in the Sciences
History 3, 4, or 6, American Civilization
PolSci 11, Introduction to American Politics
Philosophy 280, Philosophy of Science
Comm 40, Introduction to Public Speaking
Theatre 21, Fundamentals of Acting
Geology 1, General Geology
Atmospheric Science 1, Elementary Meteorology
Ed Psy 312, The Psychology of Teaching and Learning
Ed Tec 248, Utilization of Computer-Based Materials in Instruction
Sec Ed 213, Techniques of Secondary School Teaching and Field Experience
Spec Ed 313, The Psychology and Education of Exceptional Individuals
Sec Ed 386, Teaching Reading in Secondary School Content Areas
Biology 285, Curriculum and Methods of Teaching Life Sciences
Biology 286, Laboratory in Teaching Life Sciences
Sec Ed 290, Secondary School Student Teaching
Biology 399, Science Teaching Intern Seminar
 Since specific biology courses are required for teaching endorsement, contact the Department of Biology **AND** the School of Education for special advising regarding teacher certification.

Biology

Minor in Biology

Students may minor in biology by fulfilling the requirements, consisting of a minimum of 19 credit hours, of which at least 9 hours of the biology course credits for the minor must be taken in residence at UM-St. Louis.

Requirements are:

- 1) Biology 11 and 12, Introductory Biology I and II.
- 2) Must take three additional courses which should be at the 200-level or above totaling no less than 9 credit hours. These may include either lecture or laboratory courses.

All students must consult with an advisor to plan an appropriate course of study. This program must be approved by the chairperson of the Department of Biology.

Under certain circumstances, a student may deviate from the prescribed course of study and substitute as his or her program a group of courses that exhibits a coherent area of specialization to coordinate with a unique career objective. Such a candidate must receive prior approval by the biology department in order to pursue this program.

Candidates must have a cumulative grade point average of 2.0 or better in the minor and **none of the courses may be taken on a satisfactory/unsatisfactory basis.**

Biochemistry Certificate

The University offers a certificate program for science majors who are interested in careers in biochemistry. The Biochemistry Certificate is an interdisciplinary specialization which may be earned by completing the core requirements and either a **chemistry track** or a **biology track**. All students complete the following **core requirements**:

Biology

- 11, Introductory Biology I
- 12, Introductory Biology II
- 210, Cell Structure and Function
- 224, Genetics

Chemistry

- 11, Introductory Chemistry I
- 12, Introductory Chemistry II
- 122, Quantitative Analysis
- 261, Structural Organic Chemistry
- 262, Organic Reactions
- 263, Techniques of Organic Chemistry

and **one** of the following biology courses:

- 216, Microbiology
- 235, Development
- 310, Cell Physiology
- 326, Gene Expression in Eukaryotes

Students choosing to complete the certificate through the **biology track** must take these **additional courses**:

Biology

- 371, Biochemistry
- 375, Techniques in Biochemistry
- 376, Topics in Biological Chemistry
- 378, Topics in Biological Chemistry Laboratory
- 389, Senior Seminar

Chemistry

- 230, Physical Chemistry for the Life Sciences

Students choosing to complete the certificate through the **chemistry track** must take these **additional chemistry courses**:

- 231, Physical Chemistry I
- 232, Physical Chemistry II
- 233, Laboratory in Physical Chemistry
- 289, Seminar
- 371, Biochemistry
- 372, Advanced Biochemistry
- 373, Biochemical Techniques

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, developmental biology and molecular evolution.

Requirements

Undergraduate biology majors must enroll in the Biotechnology Certificate Program after the completion of 60 credit hours. A student will receive the Certificate in Biotechnology by completing the requirements for the bachelor's degree and fulfilling all the science (Biology, Chemistry, Math, and Computer Science) course requirements of the B.S. in biology program. The required biology courses for the certificate are:

Biology

- 216, Microbiology
- 218, Microbiology Laboratory
- 226, Genetics Laboratory
- 328, Techniques in Molecular Biology
- 375, Techniques in Biochemistry

One of the following two courses:

Biology

- 326, Gene Expression in Eukaryotes
- 338, Gene Expression in Prokaryotes

One of the following four courses:

Biology

- 317, Immunobiology
- 335, Molecular Cell Biology
- 334, Virology
- 376, Topics in Biological Chemistry, or
- Chemistry 372, Advanced Biochemistry**

Biology

Undergraduate Certificate in Conservation Biology

The Certificate in Conservation is a multidisciplinary program of study integrating theoretical and applied topics associated with conservation biology. The Certificate is intended for undergraduate students with majors in biology, or in any other field who wish to develop a specialization in conservation. The Certificate is offered by the Department of Biology in cooperation with the Departments of Anthropology, Economics, History, Political Science, Social Work, and Sociology. Building on a core curriculum, students can elect courses from these departments to complete their requirements. Regularly enrolled undergraduates at UM-St. Louis or individuals with baccalaureate degrees who wish to receive a Certificate in Conservation Biology are eligible to participate in the Conservation Certificate Program. In order to participate, students must officially apply to the Certificate Program. Application forms are available from the Biology Department. Guidelines for admission to the Certificate Program are available with the application forms. Individuals with a baccalaureate degree who are interested in this certificate must apply to the University as an unclassified undergraduate. The Certificate requires completion of 21 credit hours are outlined below. Students should consult the *Bulletin* with regard to prerequisites for any of the courses listed here.

Core Courses

Biology

- 220, General Ecology
- 240, Conservation Biology
- 347, Practicum in Conservation

Electives: The remaining 12 credits must be selected from courses listed below. Six credits must be taken from within Biology and six credits outside of Biology, from at least two departments.

Anthropology

- 120, Indians of North America
- 121, Native Peoples of Eastern North America
- 122, Native Peoples of Western North America
- 131, Archaeology of Missouri
- 132, Archaeology of North America

Biology

- 342, Population Biology
- 350, Functional Ecology
- 354, Entomology
- 359, Evolutionary Ecology of Animals
- 362, Plant Taxonomy
- 364, Ornithology
- 385, Wildlife Ecology and Conservation
- 395, Field Biology
- 396, Marine Biology

Economics

- 360, Natural Resource Economics

History

- 300, Selected Topics when relevant

Political Science

- 248, Environmental Politics

285, International Organizations and Global Problem Solving

351, Comparative Public Policy and Administration

359, Studies in Comparative Politics when relevant

Social Work

390, Seminar in Social Work when relevant

Sociology

342, World Population and Ecology

346, Demographic Techniques

Pre Professional Graduation

The Department of Biology sponsors a 3+4 Program for the UM-St. Louis School of Optometry.

In this program students may be admitted to the School 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.

- 1) All general education requirements and all requirements for the major, except electives, must be completed.
- 2) Any deficiency in required courses must be remedied with courses taken at UM-St. Louis within three years after entering the School of Optometry.
- 3) Up to six hours from the School of Optometry may be substituted for undergraduate degree requirements, with approval of the Department of Biology.

Bachelor of Health Sciences with Personal Emphasis in Clinical Laboratory Science or Cytotechnology

Courses in Clinical Laboratory Science and Cytotechnology are offered through the biology department for students who are pursuing a career in one of these fields. Students develop a program of studies through the Bachelor of Health Sciences degree. Refer to the Evening College section of this *Bulletin* concerning the degree.

The following courses are offered in this area through the biology department. These courses are not acceptable for graduate credit:

Cytotechnology:

- 302a, Introduction to Cytotechnology
- 302b, Female Genital Tract I
- 302c, Female Genital Tract II
- 302d, The Processing Laboratory
- 302e, Respiratory and Oral Cytology
- 302f, Body Fluid Cytology
- 302g, Gastrointestinal and Genitourinary Cytology
- 302h, Fine Needle Aspiration Cytology
- 302i, Advanced Practices in Cytology
- 302j, Leadership and Management CT

Biology

Clinical Laboratory Science:

- 303a, Fundamentals in Clinical Laboratory Science
- 303b, Clinical Bacteriology
- 303c, Bacteriology Practicum
- 303d, Mycology
- 303e, Clinical Immunology
- 303f, Immunology Practicum
- 303g, Immunohematology
- 303h, Immunohematology Practicum
- 303i, Hematology
- 303j, Hematology Practicum
- 303k, Clinical Chemistry
- 303l, Chemistry Practicum
- 303m, Parasitology CLS
- 303n, Leadership and Management CLS
- 393, Research Methods in the Health Sciences

Graduate Studies

Master of Science in Biology

The Department of Biology offers two ways of achieving the Master of Science degree. The first is a non-thesis option suitable for those who may already have extensive research experience, for educators who seek to upgrade their academic skills but do not require research experience, or for those who need to broaden their biological background. The second is a traditional apprenticeship in research leading to a written thesis. All students admitted to the graduate program are considered to be in the non-thesis program unless they have been accepted into an individual faculty lab. Starting with a common core, either option may be developed into a final degree program in one of the following areas: animal behavior, biochemistry, biotechnology, conservation biology, developmental biology, ecology, evolution, genetics, molecular and cellular biology, microbiology, plant and animal physiology, plant systematics, population biology, and tropical biology.

M.S. Admission Requirements

Applicants to the M.S. program must submit completed application and personal data forms, three letters of recommendation from undergraduate faculty, and transcripts of all previous work. Submission of GRE 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 an overall minimum grade point average of 2.75 and minimum grade average of 3.0 in the applicant's undergraduate major.

All foreign applicants, except those from countries where English is the primary language, must take the TOEFL (Test of English as a Foreign Language). Ordinarily, a score of 550 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 advisor, the student, and the Director of Graduate Studies during the first semester of enrollment. In particular, undergraduate deficiencies in genetics and either biochemistry or evolution shall be made up by taking the appropriate course(s).

Three credits of B392 Topics in Biology can be given to graduate students for B224, B246, and B371, if they receive a B or better grade for all undergraduate course work plus completing a graduate level paper assigned by the instructor. Instructor consent is required.

M.S. Degree Requirements

General Requirements

All students are required to take at least four but not more than eight hours of Biology 489, Graduate Seminar.

Advisors

All incoming thesis and non-thesis students will be assigned an academic advisor by the Director of Graduate Studies upon admission to the graduate program.

In the event that a student's interest changes or the faculty advisor feels the student's direction no longer falls within his/her area of expertise, the student and advisor should discuss whether a change of advisor is warranted. The graduate director must be notified in writing of any change in advisors. If a student or advisor are uncomfortable discussing the issue directly with each other, he/she are encouraged to meet with the director or associate director of the graduate program.

Non-thesis Option

Including the general requirements, students must take at least 36 credit hours of which at least half must be at the 400 level. Students are encouraged to take a laboratory course (300 or 400 level) or two credit hours of Biology 490, Graduate Research. A maximum of 5 credit hours of Biology 490 will be counted toward the 36 credit hour total. This research may be conducted in the laboratory, field, or library.

Thesis Option

Including the general requirement, students must take at least 30 graduate credit hours of which at least half must be at the 400 level. No more than 13 hours of Biology 490, Graduate Research, may be counted toward the degree.

Biology

The student and advisor work together to develop a research plan. The thesis proposal must be approved by the student's advisor and advisory committee before the student enrolls in more than 4 credit hours of Biology 490, Graduate Research, and before the student has completed 15 credit hours in the master's program. A thesis embodying results of original research shall be submitted to and approved by the Department of Biology and the Graduate School. This approval requires both a written thesis and oral presentation and defense.

Ph.D. in Biology

The doctoral program emphasizes empirical and theoretical approaches to biological research. Students are required to integrate basic skills in biology with focal studies in an emphasis area. The program is designed to provide research experience and training appropriate for advanced positions in academic research and teaching, government and public agencies, and in 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, Graduate Record Examination (GRE) scores (Verbal, Quantitative, and Analytical), and transcripts of all post-secondary 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 (Test of English as a Foreign Language). Scores must be submitted before admission can be decided. Ordinarily, a score of 550 or better is required. Applicants should have a bachelor's or M.S. degree from an accredited United States college or university or evidence of equivalent training at an accredited institution outside the United States.

Applicants should have the appropriate background for graduate work in biology, including courses in genetics, biochemistry, and evolution. Courses in organic chemistry, college physics, and calculus are expected. A course in statistics is recommended. Students admitted to the Ph.D. program who have not met all the prerequisites may be required to make up deficiencies before admission to candidacy. The deficiencies will be decided during orientation meetings prior to the start of the second semester. Three credits of B392 Topics in Biology can be given to graduate students for B224, B246, and B371 if they receive a B or better grade for all undergraduate coursework plus completing 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 sixty (60) credit hours of course work which must be taken beyond the bachelor's degree. At least 30 of the 60 hours must be taken at the 400 level. With the explicit consent of the advisory committee, students may take for graduate credit up to three credit hours of 200-level courses in allied departments. Courses in Biology at the 200 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:

- a) **Biology 388** (3 hours), Biometry, or equivalent course in statistics.
- b) **Biology 489** (2 hours), Graduate Seminar. Three semesters required (6 credits total).
- c) 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:

A combination of 6 total credit hours of the following:

- a) **Biology 405**, Topics in Ecology, Evolution and Systematics
- Biology 406**, Topics in Molecular, Cellular & Developmental Biology
- Biology 407**, Topics in Floristic Taxonomy
- b) **Biology 489**, Graduate Seminar: 10 hours
- c) **Biology 490** Graduate Research: 30 hours

First Year Experience

Graduate students are expected to become involved in a research experience during their first year program, usually Winter Semester or Summer Session.

Qualifying Examination and Dissertation

Students must pass a qualifying examination (which consists of a written and oral component), based on fundamental principles presented in formal courses and in papers of special importance in the field. The exam will be given in January of each year, at the beginning of the Winter Semester. Students beginning studies in the Fall Semester would normally take the qualifying examination prior to their fourth semester of full-time study. Doctoral students who have earned a M.S. degree previously are encouraged to take the examination in their first year.

Admission to Candidacy

In order 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 (which is a minimum of 24 credit hours as specified above).

Biology

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 four credits of graduate research (Biology 490) before they have received approval for their dissertation proposal.

Dissertation

A dissertation embodying the results of original research shall be submitted to and approved by the Department of Biology and the Graduate School. The general regulations of the Graduate School concerning the preparation of the dissertation must be met. These rules include a public oral defense of the written dissertation. Dissertations are to be presented in a style appropriate for one or more publications in scientific journals.

Teaching

At least one semester of supervised teaching is required of all doctoral students.

Graduate Certificate in Biotechnology

The Graduate Certificate in Biotechnology is offered for students with a Bachelor's degree who wish to obtain advanced level training in those fields of biology that pertain to biotechnology without necessarily earning a Master's degree. Students who enter this program may have a variety of interests including biochemistry, microbiology, molecular biology, cell biology, developmental biology, or molecular evolution.

Admission

Students who wish to earn a Graduate Certificate in Biotechnology must apply to the Biotechnology Certificate Program for admission to the program. Students must be enrolled in the graduate program at the University of Missouri-St. Louis either as non-degree students or as Master's students. Students who wish to obtain a Master's degree with a Biotechnology Certificate must be accepted into the Master's degree program in Biology as well as into the Biotechnology Certificate Program. Students who apply to the certificate program as non-degree students will earn only the certificate. Students must have at least a 3.0 GPA for undergraduate course work to be accepted into the program. The minimum course prerequisites for admission to the program are undergraduate courses in genetics, cell biology, and biochemistry.

Requirements

Students must maintain a minimum GPA of 3.0 to remain in the certificate program. The certificate is awarded after completion of the courses listed below. Students enrolled in the Master's program may simultaneously earn a graduate degree and count the appropriate courses from the list below toward the Biotechnology Certificate.

The Biotechnology Certificate requires **18 credit hours** of course work.

Core Requirements

I. Biology 428, Advanced Techniques in Molecular Biology

II. Biology 426, Advanced Gene Expression in Eukaryotes or

Biology 438, Advanced Gene Expression in Prokaryotes (if both above courses are taken, one may be used as elective credit)

III. The remaining 11 credit hours must be taken from the following **electives**:

Biology

317, Immunobiology

319, Immunobiology Laboratory

371, Biochemistry

376, Topics in Biological Chemistry

378, Topics in Biological Chemistry Laboratory

406, Topics in Molecular, Cellular and Developmental Biology

410, Advanced Cell Physiology

417, Advanced Immunology

429, Advanced Molecular Evolution

430, Advanced Topics in Development

431, Graduate Internship in Biotechnology

434, Advanced Virology

435, Advanced Molecular Cell Biology

444, Advanced Gene Activity During Development

461, Advanced Plant Molecular Biology and Genetic Engineering

489, Graduate Seminar, when relevant

Chemistry

372, Advanced Biochemistry

373, Biochemical Techniques

Graduate Certificate in Tropical Biology and Conservation

The Certificate is awarded after completion of 18 credit hours of core courses and electives with a minimum of 12 credits at the 400 level. Up to three credits may be taken at the 200 level upon permission of the Graduate Committee. Electives must include a minimum of 3 credits outside of biology with a maximum of 7 outside of biology. A maximum of 3 credits may be taken elsewhere than UM-St. Louis. Students may simultaneously earn a graduate degree and count credits earned in their degree program toward the Certificate when appropriate.

Required Core Courses:

Biology 445, Public Policy of Conservation and Sustainable Development

Biology 447 (1-4), Internship in Conservation Biology (may be replaced with a biology elective for individuals with applied conservation or environmental agency experience upon consent of the Graduate Committee).

Choice of:

Biology 446, Theory and Application of Conservation Biology

Biology 487, Advanced Tropical Ecology and Conservation

Electives:

Biology

342, Population Biology

354, Entomology

362, Plant Taxonomy

Biology

- 364, Ornithology
- 368, Quantitative Methods in Plant Ecology
- 385, Wildlife Ecology and Conservation
- 396, Marine Biology
- 442, Population and Community Ecology
- 450, Advanced Functional Ecology
- 458, Advanced Evolutionary Ecology of Plants
- 459, Advanced Evolutionary Ecology of Animals
- 465, Methods in Plant Systematics
- 480, Advanced Behavioral Ecology
- 481, Advanced Theoretical Systematics and Evolution
- 487, Advanced Tropical Ecology and Conservation
- 489, Graduate Seminar, when relevant

Chemistry

- 417, Environmental Chemistry
- 419, Advanced Readings in Chemistry

Economics

- 360, Natural Resource Economics

History

- 300, Selected Topics in History, when relevant
- 371, History of Latin America: to 1808
- 372, History of Latin America: Since 1808
- 381, West Africa Since 1800
- 425, Readings in Latin American History, when relevant
- 430, Readings in African History, when relevant

Political Science

- 248, Environmental Politics
- 253, Political Systems of South America
- 254, Political Systems of Mexico, Central America, and the Caribbean
- 258, African Politics
- 285, International Organizations and Global Problem Solving
- 359, Studies in Comparative Politics, when relevant
- 388, Studies in International Relations
- 414, Topics in Public Policy Analysis, when relevant
- 448, Political Economy and Public Policy
- 459, Seminar in Latin American Politics, when relevant
- 462, Political Theory and Public Policy
- 481, Seminar in International Relations

Social Work

- 390, Seminar in Social Work, when relevant

Sociology

- 342, World Population and Ecology
- 346, Demographic Techniques

Career Outlook

The biology degree programs, at the baccalaureate and Master's degree levels, are designed to prepare the student for further training. The undergraduate degree is designed to prepare the student for professional training in areas such as medicine, training, dentistry, veterinary medicine, optometry, and related areas, or for further graduate training in research. The Master of Science program is an extension of the undergraduate program and has as its goals three main objectives:

- 1) provide research-oriented training and education;
- 2) provide qualified graduates for doctoral programs; and
- 3) provide secondary school and junior college biology teachers with training necessary to maintain and improve their teaching effectiveness.

The Ph.D. program prepares students as research professionals in fields such as biological conservation, ecology, and biomedical science. Employment opportunities are available in college or university research and teaching, in government and public institutions such as museums and botanical gardens, and in industry.

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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 adviser for further information.

The following courses fulfill the Natural Sciences and Mathematics (SM) breadth of study requirements: 1, 3, 11, 12, 110, 111, 113, 114, 115, 116, 118, 120, 130, 140, 150, 210, 212, 213, 215, 216, 218, 220, 222, 224, 226, 228, 235, 237, 240, 246, 250, 254, 256, 260, 262, 264, 266, 280, 282, 303, 310, 311, 313, 314, 315, 316, 317, 319, 320, 322, 323, 324, 325, 326, 328, 329, 330, 332, 334, 335, 336, 338, 342, 344, 348, 350, 352, 354, 356, 358, 359, 360, 361, 362, 364, 366, 368, 370, 371, 372, 375, 376, 378, 380, 381, 382, 383, 385, 386, 387, 388, 389, 390, 392, 395, 396, 398, 399.

1 General Biology (3)

Emphasis on fundamental principles of biology. Biology 1 can be applied toward fulfillment of the general education requirement in science. Biology 1 does not satisfy the prerequisite requirements in other courses in biology at the 200 level or above. Students who plan to pursue a career in medicine or one of the medical-oriented professions should enroll in Biology 11 rather than Biology 1. Three hours of lecture per week.

3 General Biology Laboratory (2)

Prerequisite: Biology 1 (may be taken concurrently). Laboratory course to accompany Biology 1. Biology 3 can be used to fulfill the general education requirements in a laboratory science. Biology 3 does not meet the prerequisite requirements for other courses in biology. Three and one-half hours of laboratory per week.

11 Introductory Biology I (5)

Prerequisites: Satisfactory score on math placement test and English 09 or equivalent. Required for students intending to major in biology or take specified biology courses at the 200 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 laboratory, and one hour of discussion per week.

12 Introductory Biology II (5)

Prerequisites: Biology 11. Required for students intending to major in biology or take specified biology courses at the 200 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 laboratory, and one hour of discussion per week.

110 Human Biology (3)

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.

111 Issues in Geriatric Health Care (2)

(Same as Nursing 111.) A course designed to acquaint the student with aspects of chronic disease frequent in later life, as well as a synopsis of biological aging processes. Disease symptomology, aspects of health maintenance, and medical intervention with an older adult population will be discussed. In addition, issues in healthcare delivery will also be explored.

113 Human Physiology and Anatomy I (4)

Prerequisite: Biology 1 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.

114 Human Physiology and Anatomy II (4)

Prerequisite: Biology 113. A continuation of Biology 113. A study of the basic aspects of human physiology and anatomy. Three hours of lecture and two hours of laboratory per week.

115 Human Genetics (3)

The structure and transmission of genetic characteristics in humans, including modern advances and their impact on society. Three hours of lecture per week.

116 General Microbiology (3)

Prerequisite: Biology 1 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.

118 General Microbiology Laboratory (2)

Prerequisite: Biology 116 (may be taken concurrently). Standard techniques for identification, growth, and control of microorganisms. Three and one-half hours of laboratory per week.

120 Environmental Biology (3)

An examination of the biological basis of current environmental problems, with emphasis upon resources, energy, pollution, and conservation. Three hours of lecture per week.

130 Global Ecology (3)

Prerequisite: Biology 1. Must be taken concurrently with Political Science 85 for 3 hours of Biology and 3 hours of Political Science credit. A course team-taught by the Biology and Political Science departments, aimed particularly at elementary education majors. Combines 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, conservation of nonrenewable resources, and other issues. Examines the underlying scientific dimension, as well as the political-economic-social aspects of problem-solving at

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local, national, and international levels. Features labs and field trips in addition to lecture and discussion. Three hours of lecture, one hour and fifteen minutes discussion and three and one-half hours laboratory per week.

140 Female Sexuality (3)

(Same as Psych 140.) Prerequisites: Psych 3, or Biology 1, or its equivalent. This course will present a biological-psychological orientation toward the study of female sexuality. Topics include: sexual anatomy, hormonal influences on sexual behavior, psychosexual development, sexual attraction and relationships, sexual response and dysfunction, menstruation, pregnancy, menopause, reproductive health issues, and social issues in sexuality.

150 Plants and Civilization (3)

Prerequisite: Biology 1 or its equivalent. A study of use and dependency on plants. Primary topics of discussion will center on the origin of agriculture and its influence on the development of nations, the origin and evolution of food crops, drug and medicinal plants, and problems in feeding the world's population. Three hours of lecture per week.

201 Fundamental Biological Laboratory Skills (1)

Prerequisite: Chem 11 and 12 and Math 30, Biology majors must complete Biology 11 and 12 before taking this course. This laboratory course will provide background information and practical experience in introductory laboratory techniques. This course is appropriate for biology majors or for students in other disciplines who wish to improve their laboratory skills for technical positions or for teaching. This course meets for two hours each week. The course will not fulfill laboratory requirements for the major.

210 Cell Structure and Function (3)

Prerequisite: Biology 11 (majors must also take Biology 12), Chem 11 and 12 or equivalent. Chem 261 recommended. General cell biology, stressing cell structure and ultrastructure, as related to cell function. Three hours of lecture per week.

212 Histology and Microtechniques (5)

Prerequisite: Biology 11 (majors must also take Biology 12), Biology 210 recommended. The basic principles of histology. A survey of basic tissues and organ systems. Techniques associated with preparation of animal tissues for light microscopic studies. Three hours of lecture and 3 ½ hours of laboratory per week. (Additional lab hours arranged.) Fulfills both a lecture and a laboratory requirement.

213 Vertebrate Physiology (3)

Prerequisite: Biology 11 and 12 and Chem 11 (or Chem 1 plus Chem 9). Basic functional aspects of organ systems in relation to the physiochemical properties of protoplasm. Three hours of lecture per week.

215 Vertebrate Physiology Lab (2)

Prerequisite: Biology 213 (may be taken concurrently). Instrumental and experimental studies in physiology. Three and one-half hours of laboratory per week.

216 Microbiology (3)

Prerequisite: Biology 11 (majors must also take Biology 12) and Chem 11 (or Chem 1 plus Chem 9). Study of microorganisms, their metabolism, genetics, and their interaction with other forms of life. Three hours of lecture per week.

218 Microbiology laboratory (2)

Prerequisite: Biology 216 (may be taken concurrently). Experimental studies and procedures of microbiological techniques. Three and one-half hours of laboratory per week.

220 General Ecology (3)

Prerequisite: Biology 11 and 12. An examination of the relationships between living organisms and their environment. Three hours of lecture per week.

222 General Ecology Laboratory (2)

Prerequisite: Biology 220 required (may be taken concurrently); a general statistics course strongly recommended. An analysis of factors influencing the abundance and distribution of living organisms. Three and one-half hours of laboratory per week.

224 Genetics (3)

Prerequisite: Biology 11 (majors must also take Biology 12) and Chem 11 (or Chem 1 plus Chem 9). 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.

226 Genetics Laboratory (2)

Prerequisite: Concurrent registration in Biology 224, or by consent of instructor. Laboratory to accompany Biology 224. Three and one-half hours of laboratory per week.

228 Introduction to Biotechnology (4)

Prerequisite: Biology 11, 12 and Chem 11 or equivalent, or consent of instructor. An introduction to the fundamental concepts that underlie the rapidly growing field of biotechnology. The structure and function of DNA, RNA and protein will be presented through lectures, discussions and a series of laboratory exercises. Both the basic biological concepts and essential laboratory skills necessary for students interested in the field of biotechnology will be covered in this course. Two hours of lecture and four hours of laboratory per week. Fulfills a laboratory requirement only.

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231 Undergraduate Internship in Biotechnology (1-4)

Prerequisite: Biology 11 and 12, Chem 11 and 12 and consent of instructor. Concurrent enrollment in Chem 261 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. Internship assignments will commensurate with the education and experience of the student. Two credits may be used to fulfill the lab requirement.

235 Development (3)

Prerequisites: Biology 11 and 12. Basic principles of development from the point of view of growth, morphogenesis, and differentiation. Three hours of lecture per week.

237 Development Laboratory (2)

Prerequisite: Biology 235 (may be taken concurrently). Laboratory to accompany Biology 235. Three and one-half hours of laboratory per week.

240 Conservation Biology (4)

Prerequisite: Biology 11 and 12. Introduction to the principles and theories of conservation biology. Subjects to be covered include biodiversity, extinctions, habitat, fragmentation, captive breeding programs, restoration ecology, among others. Particular emphasis will be placed on subjects pertinent to Missouri and temperate regions, although some examples will come from tropical areas. Three hours of lecture and one hour of discussion per week. Two-three Friday or Saturday field trips to local natural areas with active conservation activities, e.g., Wolf Sanctuary, private Nature Conservancy reserves.

246 Introduction to Evolution (3)

Prerequisite: Biology 11 and 12. Introduction to the theory, events, and processes of organic evolution.

250 Biology of Plants (5)

Prerequisites: Biology 11 and 12. 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 (3½ 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.

254 General Plant Physiology and Development (3)

Prerequisite: Biology 11 and 12 and Chem 11 (or Chem 1 plus Chem 9). An examination of photosynthesis, water relations, development, and response to environmental stress in plants. Three hours of lecture per week.

256 Plant Physiology and Development Laboratory (2)

Prerequisite: Biology 254 (may be taken concurrently). Laboratory to accompany Biology 254. Exercises will demonstrate basic plant biochemical and biophysical mechanisms and responses to environmental stress. Three and one-half hours of lab per week.

260 Vertebrate Biology (3)

Prerequisite: Biology 11 and 12. Development, structure, function, interrelationships, and zoogeography of vertebrate animals with particular attention to phylogenetic aspects. Three hours of lecture per week.

262 Vertebrate Biology Laboratory (2)

Prerequisite: Biology 260 (may be taken concurrently). Laboratory to accompany Biology 260. 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.

264 Invertebrate Biology (3)

Prerequisite: Biology 11 and 12. Structure and function of invertebrate animals with co-emphasis on evolution and phylogenetic interrelationships. A field trip to the Florida Gulf Coast will be offered but not required. Three hours of lecture per week.

266 Invertebrate Biology laboratory (2)

Prerequisite: Biology 264 (may be taken concurrently). Laboratory to accompany Biology 264. Dissection and analysis of invertebrates with an emphasis on structure and function; includes field trips to area stations. A field trip to the Florida Gulf Coast will be offered but not required. Three and one-half hours of laboratory per week.

280 Animal Behavior (3)

Prerequisite: Biology 11 and 12. The study of invertebrate and vertebrate behavior, including developmental, genetic and ecological aspects of behavior; behavior interactions within and between populations. Three hours of lecture per week.

282 Animal Behavior Laboratory (2)

Prerequisite: Biology 280 (may be taken concurrently). Observational and experimental studies of animal behavior in the field and laboratory. Three and one-half hours of laboratory per week.

285 Curriculum and Methods of Teaching Life Sciences (4)

(Same as SecEd 285.) Prerequisite: SecEd 213 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.

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286 Laboratory in Teaching Life Sciences (2)

(Same as SecEd 286.) Prerequisite: SecEd 213. Discussion, development, utilization, and evaluation of equipment, materials, and techniques applicable to instruction in the life sciences. Must be taken concurrently with Biology 285/SecEd 285.

300 Radiation Safety in Biological Research (2)

Prerequisite: Consent of instructor. A description of the basic principles of radiation safety and the more important numerical data upon which the practice of radiation safety is based. Topics include interaction of radiation with matter, biological effects of radiation, operation of field and laboratory instruments, and control of exposure. Both ionizing and nonionizing radiation will be discussed. Two hours of lecture/demonstration per week.

302A Introduction to Cytotechnology (3)

Prerequisite: Admission to the Cytotechnology program at Jewish Hospital College of Nursing and Allied Health. Introduction to the profession of cytotechnology including basic cell biology, ethics, the microscope and history of the profession. Basic concepts of pathology, anatomy, normal histology, and benign cellular processes are taught.

302B Female Genital Tract I (4)

Prerequisite: Biology 302A or consent of instructor. Examines the morphogenesis of malignancy with emphasis on cellular changes of squamous and endocervical epithelium of the uterine cervix. The student is expected to identify morphologic cellular manifestations and begin to differentiate diagnosis of presented diseases on kodachromes and glass slides. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

302C Female Genital Tract II (3)

Prerequisite: Biology 302B or consent of instructor. Emphasis on the study of lesions of the uterine corpus, metastatic lesions, and lesions of the vulva and vagina. The student is expected to differentiate between malignant and premalignant diseases of the uterine corpus and to begin differential diagnosis of endometrial adenocarcinoma and endocervical adenocarcinoma from glass slides and kodachromes. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

302D The Processing Laboratory (2)

Prerequisite: Biology 302C or consent of instructor. Includes routine procedures for processing, receipt, staining, coverslipping and filing of specimens. Cytology laboratory experience includes performing laboratory techniques under the supervision of a cytotechnologist. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

302E Respiratory and Oral Cytology (3)

Prerequisite: Biology 302D or consent of instructor. Designed to acquaint the student with the anatomy and histology of the upper and lower respiratory areas. Epithelial appearances and changes associated with normal, benign, and malignant processes are emphasized. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

302F Body Fluid Cytology (3)

Prerequisite: Biology 302E or consent of instructor. Examines the cytopathology of effusions, cerebral spinal fluid and other body fluids, and the cytologic changes associated with benign and malignant processes. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

302G Gastrointestinal Genitourinary Cytology (3)

Prerequisite: Biology 302F or consent of instructor. The study of the cytology of the gastrointestinal and genitourinary systems. The anatomy of each body site is discussed along with the normal, benign and malignant cellular changes of each system. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

302H Fine Needle Aspiration Cytology (4)

Prerequisite: Biology 302G or consent of instructor. Examines the anatomy and histology of the breast, thyroid, and lymph nodes with emphasis on the cytologic patterns associated with normal, benign, and malignant processes. In addition, the student will have the opportunity to observe and assist the cytopathologist and/or cytotechnologist with fine needle aspiration procedures from various body sites to observe techniques for processing and rapid cytologic assessment. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

302I Advanced Practices in Cytology (12)

Prerequisite: Biology 302H or consent of instructor. This clinical course requires the student to examine a variety of specimens for cytologic evaluations from all body sites. Students must have achieved minimum screening accuracy in prerequisite courses to begin practicum. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

302J Leadership and Management CT (4)

Prerequisite: Economics 51 or Business 210, or equivalents. Examines theories of leadership, management and organization as applied to cytotechnology. Healthcare economics, political issues, healthcare systems are investigated within a systems theory framework. Computer spreadsheets and delivery patterns. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

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303 Biotechnology Colloquium (1)

Prerequisite: Must be enrolled in the biotechnology certificate program. Weekly seminars by outside speakers who will focus on biotechnology. Speakers will discuss current research in biotechnology, new applications of biotechnology in medicine and agriculture, safety issues, federal compliance standards, and patenting of biotechnology products. May be repeated for a maximum of two credit hours.

303A Fundamentals in Clinical Laboratory Science (4)

Prerequisite: Admission to the Clinical Laboratory Science program at Jewish Hospital College of Nursing and Allied Health. Introduction to the basic concepts in the major areas of laboratory diagnostic procedures. Basic laboratory mathematics, methodology, terminology, concepts of quality control, biological and chemical safety are presented. Successful completion of this course is required before enrollment in subsequent CLS courses.

303B Clinical Bacteriology (3)

Prerequisite: Biology 303A or consent of instructor. Study of the morphology, cultural and growth characteristics of bacteria which cause infectious disease. Specimen and media selection, collection, transport, storage and processing are also studied. Students learn to differentiate normal from pathogenic microorganisms. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303C Bacteriology Practicum (4)

Prerequisite: Biology 303B or consent of instructor. Students learn to select proper media for isolation and differentiation of organisms. Basic and special testing are practiced to identify specific microorganisms. Sensitivity of organisms to antimicrobial drugs is determined. Safety procedures are taught and practiced. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303D Mycology (2)

Prerequisite: Biology 303C or consent of instructor. Presentation of the major clinically-important fungi and common contaminants. Microscopic and other methods of identification and classification are discussed and practiced. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303E Clinical Immunology (2)

Prerequisite: Biology 303D or consent of instructor. Introduces the principles of both normal and abnormal responses of the immune system through the molecules, cells, organs and systems responsible for the recognition and disposal of foreign materials. Immunological manifestations of diseases are discussed. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303F Immunology Practicum (1)

Prerequisite: Biology 303E or consent of instructor. The focus of the clinical practice is on serologic and immunologic testing. Data interpretation, troubleshooting in test systems and disease correlation with laboratory data are stressed. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303G Immunohematology (3)

Prerequisite: Biology 303F or consent of instructor. Presents the theory and principle of immunology and genetics that determine blood types and transfusions. Aspects of red cells, platelets and components are discussed regarding selection, collection, transport, storage, processing and their use for transfusion. Donor requirements and laboratory operations are included. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303H Immunohematology Practicum (3)

Prerequisite: Biology 303G or consent of instructor. The focus of clinical practice is the basic and special testing to assure safe blood supply and transfusion. Adverse reactions are investigated to identify cause. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303I Hematology (3)

Prerequisite: Biology 303H or consent of instructor. The study of anatomy and physiology of red cells, white cells and platelets using the quantitation and morphology of these cells to identify normal and abnormal processes. Hematopoietic diseases are presented. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303J Hematology Practicum (3)

Prerequisite: Biology 303I or consent of instructor. The clinical practice focuses on the basic and special testing in hematology. Identification of normal and abnormal cell morphology is studied and disease is correlated with abnormal cells. Hemostasis testing is practiced; these tests monitor anticoagulant drugs. Other tests practiced identify coagulation deficiency and other hemostatic diseases. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

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303K Clinical Chemistry (4)

Prerequisite: Biology 303J or consent of instructor. Biochemical theory and physiology of carbohydrates, lipids, and lipoproteins, heme derivatives, proteins and enzymes. The biochemistry and physiology of electrolytes and acid base balance are discussed. Endocrinology, therapeutic drug monitoring and instrumentation specific to the chemistry laboratory testing are also discussed. Normal and abnormal manifestations of diseases and correlation with other laboratory tests are presented. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303L Chemistry Practicum (4)

Prerequisite: Biology 303K or consent of instructor. The clinical practice focus is on basic and special test methods and instrumentation used in the quantifying metabolites discussed in Biology 303K. Quality control, correlation of test data and diseases are presented. Biological and chemical safety is practiced. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303M Parasitology CLS (2)

Prerequisite: Biology 303L or consent of instructor. Presentation of the major parasites. Classification, diagnostic stages, life cycles and vectors are studied and microscopic identification is practiced. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303N Leadership and Management CLS (4)

Prerequisite: Economics 51 or Business 210 or equivalents. Examines theories of leadership, management, and organization as applied to Clinical Laboratory Science. Healthcare economics, political issues, healthcare systems are investigated within a systems theory framework. Computer programs are used for development of financial spreadsheets and delivery patterns. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

310 Cell Physiology (3)

Prerequisite: Biology 371 (Biology 210 recommended). A study of cellular functions and their relationship to the structural and chemical properties of cellular components. Areas discussed: the cell and its environment, energy flow, exchange of materials across membranes, information transfer within and between cells, and cellular aspects of movement. Three hours of lecture per week. Students may not receive credit for both Biology 310 and 410.

311 Physiology of Aging (3)

Prerequisites: Biology 11, 12, and 213 or equivalent, or consent of instructor. (Same as Gerontology 311). An overview of the aging process in animal populations with special emphasis on physiological changes that occur with human aging. Current theories as to the mechanism of aging are considered and critically evaluated in view of recent research findings. Premature aging diseases and age-related diseases are discussed. Three hours of lecture per week.

313 Comparative Animal Physiology (3)

Prerequisite: Biology 213. The unity and diversity of physiological mechanisms found throughout the animal kingdom. Three hours of lecture per week. Students may not receive credit for both Biology 313 and 413.

314 Environmental Physiology (3)

Prerequisite: Biology 213. Physiological responses of animals to environmental changes. Adaptation of organisms to various environments. Three hours of lecture per week. Students may not receive credit for both Biology 314 and 414.

315 Comparative and Environmental Physiology Laboratory (2)

Prerequisite: Biology 313 or 314. An open-ended laboratory course to accompany either Biology 313 or 314.

316 Parasitology (3)

Prerequisite: Biology 11, 12, and 10 additional hours of biology and upper-division standing. (Biology 210 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.

317 Immunobiology (3)

Prerequisite: Biology 371 and Chem 261. 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.

319 Immunobiology Laboratory (2)

Prerequisite: Biology 317 (may be taken concurrently). Basic experimental procedures in immunology. Introduction to experimental evidence underlying concepts in immunology. Three and one-half hours of laboratory per week.

Biology**320 Introduction to Neuroscience (3)**

Prerequisite: Biology 213 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.

322 Laboratory Techniques in Neuroscience (2)

Prerequisite: Biology 320 (must be taken concurrently). Experiments are designed to accompany Biology 320, and will include the use of live animals and computer simulation of the physiological and biophysical properties of excitable membranes.

323 Tropical Resource Ecology (3)

Prerequisite: Biology 220 and either Biology 246 or 280 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. Student may not receive credit for both Biology 323 and 423. Three hours of lecture per week. Offered in odd years.

324 Tropical Resource Ecology Field Studies (2)

Prerequisite: Biology 323 (may be taken concurrently). The field component to the lecture and seminar course that applies the behavioral ecology paradigm to examine the patterns of use and exploitation of resources in the tropics of humans. Two weeks of intensive field research and lectures in Guyana, South America the week prior to and during Spring break (trip costs to be borne by student). Students may not receive credit for both Biology 324 and 424. Offered in odd years.

325 Tropical Vertebrate Ecology (3)

Prerequisite: Biology 220, and either Biology 246 or 280 or their equivalent, or consent of instructor. This course explores the role of neotropical vertebrate individuals in the expression of patterns and processes in populations and communities that elucidate the degree to which organic evolution can be ascribed to natural selection and/or random events. Three weeks of intensive lecture, discussion and individual field studies in Guyana, South America during July-August (trip costs to be borne by student). Class size 12 students. Students may not receive credit for both Biology 325 and 425. Offered in even years.

326 Gene Expression in Eukaryotes (3)

Prerequisite: Biology 224 and 371. A discussion of the current concepts of molecular biology as they apply to understanding genetic regulation of DNA, RNA, and protein synthesis and function in the cell. Three hours of lecture per week. Students may not receive credit for both Biology 326 and 426.

328 Techniques in Molecular Biology (4)

Prerequisite: Biology 228 and either Biology 326 or 338. An in-depth look at theory and practice of current technologies in molecular biology. The focus will be on techniques used to study gene structure and expression. Laboratory will present hands-on experience with these techniques. One hour of lecture and 6 hours of laboratory per week. Fulfills a laboratory requirement only for majors. Students may not receive credit for both Biology 328 and 428.

329 Molecular Evolution (3)

Prerequisite: Biology 246 or 342, and Biology 326 or 338, or consent of instructor. This course provides lectures and class discussions concerning the evolutionary processes that have changed the genetic material over time. This course will include the dynamics of genes in populations and several aspects of evolutionary change at the molecular level. Students may not receive credit for both Biology 329 and 429.

330 Topics in Development (3)

Prerequisite: Biology 235. Discussion of selected model systems that are not generally covered in an introductory level course in Development, as well as current views of concepts that are basic to the analysis of the mechanisms of development. Three hours of lecture per week. Students may not receive credit for both Biology 330 and 430.

332 Advanced Development Laboratory (2)

Prerequisite: Biology 330 (may be taken concurrently). Instruction and practice in the application of experimental techniques to the study of development. Three and one-half hours of laboratory per week to be arranged.

334 Virology (3)

Prerequisite: Biology 216 and 224. A comparative study of the structure, reproduction, and genetics of viruses. Three hours of lecture per week. Students may not receive credit for both Biology 334 and 434.

335 Molecular Cell Biology (3)

Prerequisite: Biology 326 or 338 and 371. This course is designed to explore the structural organization and processes in living cells. Topics of discussion will include gene product processing and transport, organelle biogenesis and assembly, cell-cell communication, control of gene expression, cytoskeletal structure and function, and normal and abnormal cell differentiation. Particular attention will be given to discussion of the current literature. This course is also designed to help unify genetics, biochemistry, and physiology. Three hours of lecture per week. Students may not receive credit for both Biology 335 and 435.

336 Virology Laboratory (2)

Prerequisite: Biology 334 (may be taken concurrently). Laboratory to accompany Biology 334. Three and one-half hours of laboratory per week.

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338 Gene Expression in Prokaryotes (3)

Prerequisite: Biology 216 and 224. The principles and mechanisms of inheritance and transfer of genetic material in microorganisms. Includes the study of mutation, gene transfer, and genetic manipulation of microorganisms. Three hours of lecture per week. Students may not receive credit for both Biology 338 and 438.

342 Population Biology (3)

Prerequisite: Biology 224 (Biology 220 recommended). The structure, operation, and evolution of populations. Three hours of lecture per week.

344 Gene Activity During Development (3)

Prerequisite: Biology 235 and 326 or consent of instructor. Discussion of selected experimental systems in which molecular genetic and cell biological approaches have provided insights about the genes and/or gene products that regulate animal development. Three hours of lecture per week. Students may not receive credit for both Biology 344 and 444.

347 Practicum in Conservation (2)

Prerequisite: Biology 240 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.

348 Evolution of Animal Sociality (3)

Prerequisite: Biology 280, 220 or 342 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 Biology 348 and 448.

350 Functional Ecology (3)

Prerequisite: Biology 220 or consent of instructor. An examination of plant and animal responses to environmental variation. Content will focus on Darwinian adaptation, homeostasis, acclimation, and development at the whole organism level. Three hours of lecture per week. Students may not receive credit for both Biology 350 and 450.

352 Functional Ecology Laboratory (2)

Prerequisite: Biology 350 (may be taken concurrently). Laboratory to accompany Biology 350. Exercises will include measurement and analysis of energy budgets, gas exchange, and acclimation to drought. Two field trips will be taken late in the Spring to study physiological parameters in the field. Three and one-half hours of laboratory per week. Students may not receive credit for both Biology 352 and 452.

354 Entomology (3)

Prerequisite: Biology 11 and 12; 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.

356 Entomology Laboratory (2)

Prerequisite: Biology 354 (may be taken concurrently). Laboratory to accompany Biology 354. 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.

358 Evolutionary Ecology of Plants (3)

Prerequisite: Biology 224 and 220, or 342 or 246. This course will explore topics concerning evolution in natural plant populations emphasizing current empirical research on the genetics and ecology of plant populations. Specific topics will include natural selections and local adaptations, gene flow through pollination and seed dispersal, role of genetic drift, coevolution between plants and animals, molecular evolution, speciation, conservation of natural populations, and artificial selection. Students may not receive credit for both Biology 358 and 458. Three hours of lecture per week.

359 Evolutionary Ecology of Animals (3)

Prerequisite: Biology 220, 280, and one of 224, 246, or their equivalents, or consent of instructor. This course examines the interactions of the evolutionary forces that determine the distribution and abundance of animals. It explores the patterns and processes in populations and communities that should elucidate the degree to which organic evolution can be ascribed to natural selection and/or random events. Analysis of the theoretical constructs of evolutionary ecology and an examination of the empirical evidence from primary sources that claim to support or refute these theories will also be covered. Students may not receive credit for both Biology 359 and 459. Three hours of lecture per week.

360 Techniques in Electron Microscopy (5)

Prerequisite: Biology 210 and consent of instructor. Discussion of electron microscopy and associated techniques. Students will learn techniques associated with the preparation of materials for electron microscopy and learn to operate and perform minor servicing of the electron microscope. This course fulfills a laboratory requirement. Two hours of lecture per week and seven hours of laboratory per week to be arranged.

Biology

361 Plant Molecular Biology and Genetic Engineering (3)

Prerequisite: Biology 326 or 338. Topics will include plant cell and developmental biology, DNA transfer into plants, using mutations to identify genes and their functions, regeneration of plants in tissue culture, signal transduction mechanisms, molecular biology of plant organelles, developmental engineering, metabolic engineering, plant-microbe interactions, and engineered resistance to pathogen attack. Three hours of lecture per week. Students may not receive credit for both Biology 361 and 461.

362 Plant Taxonomy (4)

Prerequisite: Biology 250 or consent of instructor. The history, literature and methodology of plant taxonomy, emphasizing the flowering plants or angiosperms. Modern methods, e.g., phenetics, cladistics, and vicariance biogeography will also be covered. The labs will feature most angiosperm groups, using living and herbarium material. Two hours of lecture and three and one-half hours of laboratory per week.

364 Ornithology (3)

Prerequisite: Biology 220 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.

366 Ornithology Laboratory (2)

Prerequisite: Biology 364 (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.

368 Quantitative Methods in Plant Ecology (4)

Prerequisite: Biology 220 or consent of instructor. Lectures and assigned readings will cover sampling and analytic techniques for soils and plant material. Laboratories will include practice in the technique of plant demography, selection analysis, habitat description, and analysis of communities. Attention will be given to experimental design and statistical treatment and interpretation of ecological data. Students will design and execute an independent laboratory or field study. One hour lecture and four and one-half hours of laboratory per week. This course fulfills a laboratory requirement. Students may not receive credit for both Biology 368 and 468.

370 General and Comparative Endocrinology (3)

Prerequisite: Biology 213 (Biology 371 recommended). A survey of chemical coordinating mechanisms with special emphasis on the evolution of hormonal control systems. Three hours of lecture per week. Students may not receive credit for both Biology 370 and 470.

371 Biochemistry (3)

(Same as Chemistry 371). Prerequisite: Chemistry 261 and either Biology 11 or Chem 262. 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 Biology 371 and Chemistry 371. Biology 371 may not be used to fulfill the 300-level lecture course requirement for the B.S. in Biology.

372 General and Comparative Endocrinology Laboratory (2)

Prerequisite: Biology 370 (may be taken concurrently). An introduction to techniques and procedures used in endocrine research. Three and one-half hours of laboratory per week.

375 Techniques in Biochemistry (2)

Prerequisite: Biology 371 or chemistry 371 (may be taken concurrently). Laboratory activities introducing fundamental qualitative and quantitative biochemical techniques.

376 Topics in Biological Chemistry (3)

Prerequisite: Biology 371. Topics include control of cellular metabolism, membrane transport mechanisms of action of enzymes and hormones, and enzyme kinetics. Three hours of lecture per week.

378 Topics in Biological Chemistry Laboratory (2)

Prerequisite: Biology 375 or consent of instructor. Independent projects related to analytical and metabolic control, using advanced analytical and synthetic procedures. Three and one-half hours of laboratory per week.

380 Behavioral Ecology (3)

Prerequisite: Biology 280 (Biology 220 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 Biology 380 and 480.

Biology

381 Theoretical Systematics and Evolution (3)

Prerequisite: Biology 342 or equivalent. Mechanisms of speciation, the role of such phenomena as isolation, hybridization, polyploidy, gene flow, and breeding systems in the evolution and maintenance of species and modern theoretical systematics in phylogenetic reconstructions. Three hours of lecture per week. Students may not receive credit for both Biology 381 and 481.

382 Ecological and Evolutionary Behavior Laboratory (2)

Prerequisite: Biology 380 (may be taken concurrently). Observational and experimental studies of animal behavior in the field and laboratory. Three and one-half hours of laboratory per week.

383 Introduction to Geographic Information Systems (3)

Prerequisite: Biology 220, 388 or equivalent, and consent of instructor; short course in UNIX operating systems recommended. 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 spatial analysis. Examples from a wide range of disciplines are used 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 UNIX-based computer workstations. Three hours of combined lecture and computer operations per week. Students may not receive credit for both Biology 383 and 483.

385 Wildlife Ecology and Conservation (3)

Prerequisite: Biology 220, 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.

386 Wildlife Ecology and Conservation Laboratory (2)

Prerequisite: Biology 385 (may be taken concurrently) or consent of instructor. This course will provide field and laboratory experiences to accompany Biology 385. 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.

387 Tropical Ecology and Conservation (3)

Prerequisite: Biology 220, 342, 442 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 Biology 387 and 487. Three hours of lecture per week.

388 Biometry (3)

Prerequisite: Math 30 and a minimum of 15 hours in biology. This course 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 hour lecture. This course fulfills the statistics requirement for the B.A. or B.S. degree in biology. Students may not receive credit for both Biology 388 and 488.

389 Senior Seminar (2)

Prerequisite: Senior standing. Required of biology majors. Presentation of selected papers by students. May not be taken for graduate credit.

390 Research (1-3)

Prerequisite: Consent of the Biology 390 course coordinator. Generally restricted to junior and senior standing. Research (laboratory and/or library) in an area selected by the student in consultation with and under the supervision of a faculty research adviser. Credit arranged. Course may be repeated for a total of up to five credit hours. No more than two credit hours may be applied toward the minimum number of biology course credits for the major in biology.

392 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.

393 Research Methods in the Health Sciences (3)

Prerequisite: Psychology 201 or equivalent. Develops an understanding of the research process as applied to allied health. The value and purpose of research within an ethical/legal context is explored. Qualitative and quantitative research methods and approaches to solve problems are examined. Students are actively involved in evaluating, critically analyzing and interpreting data to determine implications for practice. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

Biology**395 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 biology 395 and 440.

396 Marine Biology (3)

Prerequisite: Biology 264 (Biology 266 recommended). A survey of the major groups of marine plants and animals and their interactions in the various North American marine communities. Three hours of lecture per week.

398 Marine Biology Laboratory (2)

Prerequisite: Biology 396 (may be taken concurrently) and consent of instructor. Intensive laboratory and field study of selected North American marine communities. Consult the instructor for area to be visited. Students must pay their own travel and living expenses.

399 Science Teaching Intern Seminar (3)

Prerequisite: Biology 285 and 286. Addresses the application of educational philosophy, science curriculum, teaching strategies, and instructional technology in the classroom setting. Offered concurrently with SecEd 290, Secondary School Student Teaching.

405 Topics in Ecology, Evolution, and Systematics (1)

Prerequisite: Graduate standing. Presentation and discussion of current faculty and student research projects in behavior, ecology, evolution, and systematics. May be repeated for a maximum of three credit hours. One hour per week.

406 Topics in Molecular, Cellular and Developmental 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 for a maximum of three credit hours. One hour per week.

407 Topics in Floristic Taxonomy (1)

Prerequisite: Biology 250 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.

408 Museum Methods in Biological Research (1)

Prerequisite: Graduate standing and consent of instructor. Hands-on training will teach methods in the preparation and preservation of research specimens and the recording and cataloging of associated data. Students will learn basic techniques for higher and lower vertebrates, invertebrates, insects, and plants. Each student will prepare representative specimens of all groups studied. The relationship between museum preservation and research programs in systematics, ecology, and behavior will be emphasized. Two hours of lecture-demonstration a week.

410 Advanced Cell Physiology (3)

Prerequisite: Biology 371, (Biology 210 recommended). An advanced study of cellular functions and their relationships to the structural and chemical properties of cellular components. Areas discussed: the cell and its environment, energy flow, exchange of materials across membranes, information transfer within and between cells, and cellular aspects of movements. Three hours of lecture, one hour of discussion or seminar per week. Students may not receive credit for both Biology 310 and Biology 410.

413 Advanced Comparative Animal Physiology (3)

Prerequisite: Biology 213. Advanced aspects of the unity and diversity of physiological mechanisms found through the animal kingdom. Three hours of lecture, one hour of discussion or seminar a week. Students may not receive credit for both 313 and 413.

414 Advanced Environmental Physiology (3)

Prerequisite: Biology 213. Advanced aspects of physiological responses of animals to environmental changes. Adaptation of organisms to various environments. Three hours of lecture, one hour of discussion or seminar per week. Students may not receive credit for both Biology 314 and 414.

417 Advanced Immunology (3)

Prerequisite: Biology 317. 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.

423 Advanced Tropical Resource Ecology (3)

Prerequisite: Biology 220, and either Biology 246 or Biology 280 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 Biology 323 and Biology 423. Three hours of lecture, and one hour of discussion or seminar per week. Offered in odd years.

Biology

424 Advanced Tropical Resource Ecology Field Studies (2)

Prerequisite: Biology 423 (may be taken concurrently). The field component to the lecture and seminar course that applies the behavioral ecology paradigm to examine the patterns of use and exploitation of resources in the tropics by humans. Two weeks of intensive field research and lectures in Guyana, South America the week prior to and during spring break (trip costs to be borne by student). Graduate students will be required to write an extra paper on tropical resource use problems. Students may not receive credit for both Biology 324 and Biology 424. Offered in odd years.

425 Advanced Tropical Vertebrate Ecology (3)

Prerequisite: Biology 220, and either Biology 246 or Biology 280 or their equivalent, or consent of the instructor. This course explores the role of Neotropical vertebrate individuals in the expression of patterns and processes in populations and communities that elucidate the degree to which organic evolution can be ascribed to natural selection and/or random events. Three weeks of intensive lecture, discussion and individual field studies in Guyana, South America during July-August (trip costs to be borne by student). Graduate students will be required to write a paper on a topic relevant to the course. Class size 12 students. Students may not receive credit for both Biology 325 and Biology 425. Offered in even years.

426 Advanced Gene Expression in Eukaryotes (3)

Prerequisite: Biology 224 and 371. An advanced discussion of the current concepts of molecular Biology as they apply to understanding genetic regulation of DNA, RNA, and protein synthesis and function in the cell. Three hours of lecture, one hour of discussion or seminar per week. Students may not receive credit for both Biology 326 and 426.

428 Advanced Techniques in Molecular Biology (4)

Prerequisite: Biology 228 and either Biology 326 or Biology 338. An in-depth look at the theory and practice of current technologies in molecular biology. The focus will be on techniques used to study gene structure and expression. Laboratory will present hands-on experience with these techniques. One hour of lecture, six hours of laboratory, and one hour of seminar per week. Students may not receive credit for both Biology 328 and Biology 428.

429 Advanced Molecular Evolution (3)

Prerequisite: Biology 246 or 342, 326 or 338, or consent of instructor. Advanced lectures and class discussions concerning the evolutionary processes that have changed the genetic material over time. This course will include the dynamics of genes in populations and several aspects of evolutionary change at the molecular level. Students may not receive credit for both Biology 329 and 429.

430 Advanced Topics in Development (3)

Prerequisite: Biology 235. Discussion of selected model systems that are not generally covered in an introductory level course in Development, as well as current views of concepts that are basic to the analysis of the mechanisms of development. Three hours of lecture and one hour of discussion or seminar per week. Students may not receive credit for both Biology 330 and 430.

431 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 490 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.

434 Advanced Virology (3)

Prerequisite: Biology 216 and 224. 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 Biology 334 and 434.

435 Advanced Molecular Cell Biology (3)

Prerequisite: Biology 326 or 338 and Biology 371, or equivalent. This course is designed to explore the structural organizational and processes in living cells. Topics of discussion will include gene product processing and transport, organelle biogenesis and assembly, cell-cell communication, control of gene expression, cytoskeletal structure and function, and normal and abnormal cell differentiation. Particular attention will be given to discussion of the current literature. This course is also designed to help unify genetics, biochemistry, and physiology. Three hours of lecture, one hour of discussion per week. Students may not receive credit for both Biology 335 and Biology 435.

438 Advanced Gene Expression in Prokaryotes (3)

Prerequisite: Biology 216 and 224. Advanced aspects of the principles and mechanisms of inheritance and transfer of genetic material in microorganisms. Includes the study of mutation, gene transfer, and genetic manipulation of microorganisms. Three hours of lecture, one hour discussion or seminar per week. Students may not receive credit for both Biology 338 and Biology 438.

Biology

440 Ecological Research in Temperate Zones (3)

Prerequisite: Graduate standing and consent of instructor. This course will visit several temperate ecosystems with the objectives of learning about the natural history of these areas together with learning how to design projects and conduct field research addressing current ecological theories in a temperate setting. Several faculty members will participate in this course. Temperate sites to be visited will likely include Missouri Ozarks, Great Smokey Mountains, Indiana dunes, and Southern Illinois bottomland and cypress swamp forest. Students will be required to pay costs of travel and of field trips. Students may not receive credit for both Biology 395 and 440. Two hours of discussion (during weekday), four-six weekend field trips (leave Friday, return Sunday), and several (2-4) Saturday field trips during the first eight weeks of semester.

442 Population and Community Ecology (3)

Prerequisite: Biology 220 or 342 or their equivalents. 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.

444 Advanced Gene Activity During Development (3)

Prerequisite: Biology 235 and 326/426 or consent of instructor. Advanced discussion of selected experimental systems in which molecular genetic and cell biological approaches have provided insights about the genes and/or gene products that regulate animal development. Three hours of lecture and one hour of discussion per week. Students may not receive credit for both Biology 344 and Biology 444.

445 Public Policy of Conservation and Sustainable Development (3)

(Same as PolSci 452.) 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.

446 Theory and Application of Conversation Biology (3)

Prerequisite: Biology 342, 442, 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.

447 Internship in Conversation Biology (1-4)

Prerequisite: Biology 445 or 446 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.

448 Advanced Evolution of Animal Sociality (3)

Prerequisite: Biology 280, 220, or 342 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 Biology 348 and Biology 448.

450 Advanced Functional Ecology (3)

Prerequisite: Biology 220 or consent of instructor. An examination of plant and animal responses to environmental variation. Content will focus on Darwinian adaptation, homeostasis, acclimation, and development at the whole organism level. A formal research paper or field study on a topic concerning environmental physiology of plants or animals will be required. Three hours of lecture per week. Students may not receive credit for both Biology 350 and Biology 450.

452 Advanced Functional Ecology Lab (2)

Prerequisite: Biology 450 (may be taken concurrently). Laboratory to accompany Biology 450. Exercises will include detailed measurement and analysis of energy budgets, gas exchange, and acclimation to drought. Two field trips will be taken late in the spring to study physiological parameters in the field. A research project involving the greenhouse, laboratory or computer facilities will be required. Meets three and one-half hours per week. Students may not receive credit for both Biology 352 and Biology 452.

458 Advanced Evolutionary Ecology of Plants (3)

Prerequisite: Biology 224, 220, or 342, or 246 or their equivalent. This course will explore topics concerning evolution in natural plant populations, emphasizing current empirical research on the genetics and ecology of plant populations. Specific topics will include natural selection and pollination and seed dispersal, role of genetic drift, coevolution between plants and animals, molecular evolution, speciation, conservation of natural populations, and artificial selection. A formal research paper on a topic concerning the evolutionary ecology of plants will be required. Students may not receive credit for both Biology 358 and 458. Three hours of lecture per week.

Biology

459 Advanced Evolutionary Ecology of Animals (3)

Prerequisite: Biology 220, 280 and one of 224, 246; or their equivalents; or consent of instructor. This course examines the interactions of the evolutionary forces that determine the distribution and abundance of animals. It explores the patterns and processes in populations and communities that should elucidate the degree to which organic evolution can be ascribed to natural selection and/or random events. Analysis of the theoretical constructs of evolutionary ecology and an examination of the empirical evidence from primary sources that claim to support or refute these theories will also be covered. A formal paper in the form of an NSF research proposal on a topic concerning the evolutionary ecology of animals will be required. Students may not receive credit for both Biology 359 and 459. Three hours of lecture per week.

461 Advanced Plant Molecular Biology and Genetic Engineering (3)

Prerequisite: Biology 326 or 338. Topics will include plant cell and developmental biology, DNA transfer into plants, using mutations to identify genes and their functions, regeneration of plants in tissue culture, signal transduction mechanisms, molecular biology of plant organelles, developmental engineering, metabolic engineering, plant microbe interactions, and engineered resistance to pathogen attack. Three hours of lecture and one hour of seminar per week. Student may not receive credit for both Biology 361 and Biology 461.

465 Methods in Plant Systematics (4)

Prerequisite: Biology 362 or consent of instructor. A techniques course covering the use of anatomical, cytological, chemical, palynological and numerical methods in taxonomic research. Herbarium management, databases, scientific publication and library techniques will also be covered. Two hours of lecture and discussion and three and one-half hours of laboratory per week.

468 Advanced Quantitative Methods in Plant Ecology (4)

Prerequisite: Biology 220 or consent of instructor. Lectures and assigned readings will cover sampling and analytic techniques for soils and plant material. Laboratories will include practice in the technique of plant demography, selection analysis, habitat description and analysis of communities. Attention will be given to experimental design and statistical treatment and interpretation of ecological data. Students will design and execute an independent laboratory or field of study. One-hour lecture, four and one-half hours of laboratory, and one-hour discussion per week. This course fulfills a laboratory requirement. Students may not receive credit for both Biology 368 and 468.

470 Advanced General and Comparative Endocrinology (3)

Prerequisite: Biology 213 (Biology 371 recommended). An advanced survey of chemical coordinating mechanisms with special emphasis on the evolution of hormonal control systems. Three hours of lecture, one hour discussion or seminar per week. Students may not receive credit for both Biology 370 and 470.

474 Hormones, Pheromones, and Behavior (3)

Prerequisite: Biology 213 and 280 required, Biology 370 recommended. This course will survey the hormonal and phenomenal control of behavior in both invertebrates (annelids, arthropods, and molluscs) and vertebrates (from fish to primates). Particular attention will be given to organizational and activational effects of hormones on sexual, parental, and aggressive behaviors. Interactions between hormonal, pheromonal, and neural control of behavior will be discussed. Three hours of lecture per week.

480 Advanced Behavioral Ecology (3)

Prerequisite: Biology 280 (Biology 220 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 Biology 380 and 480.

481 Advanced Theoretical Systematics and Evolution (3)

Prerequisite: Biology 342 or equivalent. Advanced aspects of mechanisms of speciation, the role of such phenomena as isolation, hybridization, polyploidy, gene flow and breeding systems in the evolution and maintenance of species, and modern theoretical systematics in phylogenetic reconstruction. Three hour of lecture, one hour of discussion or seminar per week. Students may not receive credit for both Biology 381 and 481.

483 Applications of Geographic Information Systems (3)

Prerequisite: Biology 220, Biology 388 or equivalent, and consent of instructor; short course in UNIX operating systems recommended. 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. Examples from a wide range of disciplines are used 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 UNIX-based computer workstations. A formal research paper on GIS applications in biological research will be required. Three hours of combined lecture and computer operations per week. Students may not receive credit for both Biology 383 and 483.

Biology

485 Problems in Teaching College Biology (3)

(Same as ADU ED 435.) Prerequisite: Teaching experience, 30 semester hours in biology, and consent of instructor. Basic philosophies underlying undergraduate biology education at the college level will be presented and examined with concern for establishment of an individual philosophy in the prospective college teacher. Teaching techniques suitable for college-level instruction will be considered, practiced, and evaluated. Advantages and limitations of various methods of instruction will be considered with respect to current research findings.

486 Techniques in Teaching College Biology for Graduate Students (2)

(Same as SEC ED 486.) Prerequisite: Graduate standing and teaching assignment. Discussion and practice of techniques specific to instruction in the life sciences. Consideration will be given to teaching strategies, curriculum design, evaluation, instrumentation, and student-teacher interaction. Recommended for all graduate students with teaching assistantships.

487 Advanced Tropical Ecology and Conservation (3)

Prerequisite: Biology 220, or 342, or 442, 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 Biology 387 and 487. Three hours of lecture per week.

488 Advanced Biometry (3)

Prerequisite: Math 30 and a minimum of 15 hours in biology. This course reviews descriptive, analytic, 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. In addition to the take-home assignments and exams, students will be required to analyze a problem of their choice. This can be an analysis of published material or unpublished, original research. Three hour lecture, one-hour discussion per week. Students may not receive credit for both Biology 388 and 488.

489 Graduate Seminar (2)

Presentation and discussion of various research problems in biology. Graduate student exposure to the seminar process.

490 Graduate Research in Biology (1-10)

Research in area selected by student in consultation with faculty members. May be taken for a maximum of ten hours.

491 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.

492 Topics in Biology (2-5)

In-depth studies of selected topics in contemporary biology. May be repeated. Three hours of lecture per week.

Chemistry**Faculty**

Gordon K. Anderson, Professor*, Chairperson
Ph.D., University of Glasgow

Lawrence Barton, Professor*
Ph.D., University of Liverpool

James S. Chickos, Professor*
Ph.D., Cornell University

Joyce Y. Corey, Professor*
Ph.D., University of Wisconsin

Wesley R. Harris, Professor*
Ph.D., Texas A. and M. University

David W. Larsen, Professor*
Ph.D., Northwestern University

Robert W. Murray, Curators' Professor*
Ph.D., Yale University

Robert I. Stearns, Adjunct Professor
Ph.D., Tulane University

William J. Welsh, Professor*
Ph.D., University of Pennsylvania

Charles W. Armbruster, Adjunct Associate Professor
Ph.D., Washington University

Lee Brammer, Associate Professor*
Ph.D., University of Bristol

Lawrence Brannigan, Adjunct Associate Professor
Ph.D., Vanderbilt University

Daniel T. Connolly, Adjunct Associate Professor
Ph.D., The Johns Hopkins University

Joseph B. Dence, Adjunct Associate Professor
Ph.D., California Institute of Technology

Valerian T. D'Souza, Associate Professor*
Ph.D., University of Detroit

David L. Garin, Associate Professor*
Ph.D., Iowa State University

Harold H. Harris, Associate Professor*
Ph.D., Michigan State University

Jane A. Miller, Associate Professor Emeritus*
Ph.D., Tulane University

William L. Neumann, Adjunct Associate Professor
Ph.D., University of Missouri-St. Louis

James J. O'Brien, Associate Professor*
Ph.D., Australian National University

Robert G. Orth, Adjunct Associate Professor
Ph.D., Case Western Reserve University

Nigam P. Rath, Research Associate Professor
Ph.D., Oklahoma State University

William P. Ridley, Adjunct Associate Professor
Ph.D., University of Minnesota

Christopher D. Spilling, Associate Professor*
Ph.D., The University of Technology, Loughborough

Keith J. Stine, Associate Professor*
Ph.D., Massachusetts Institute of Technology

Rudolph E. K. Winter, Associate Professor*; Director of Graduate Studies
Ph.D., The Johns Hopkins University

Dennis Moore, Adjunct Assistant Professor
Ph.D., Washington University

F. Christopher Pigge, Assistant Professor*
Ph.D., University of North Carolina

Raghavan Rajagopalan, Adjunct Assistant Professor*
Ph.D., Columbia University

Janet B. Wilking, Research Assistant Professor*
Ph.D., Washington University

Zhi Xu, Assistant Professor*
Ph.D., University of Pittsburgh

Randy Zauhar, Adjunct Assistant Professor
Ph.D., Pennsylvania State University

John Gutweiler, Lecturer
Ph.D., St. Louis University

Mark Schuermann, Lecturer
M.S., University of Notre Dame

William H. Stegmann, Lecturer
M.S., Southern Illinois University

Sudha Cowsik, Research Associate
Ph.D., All India Institute of Medical Sciences

Reinaldo Atencio-Fuenmayer, Research Associate
Ph.D., University of Zaragoza

Abdul R. Khan, Research Associate
Ph.D., University of Missouri-Saint Louis

Yuejin Li, Research Associate
Ph.D., Nankai University

Ramon Macias, Research Associate
Ph.D., Leeds University

Anil Nair, Research Associate
Ph.D., Banaras Hindu University

Sastry Pappu, Research Associate
D.S.C., Andhra University

Joong-Youn Shim, Research Associate
Ph.D., University of Georgia

Megh Singh, Research Associate
Ph.D., University of Jodhpur

Rhodri L. Thomas, Research Associate
Ph.D., Heriot-Watt University

Jack Uang, Research Investigator
Ph.D., University of Missouri-Rolla

Peter Wolohan, Research Associate
Ph.D., University of Reading

Technical Staff

Kenneth Owens, Glassblower

Joseph Kramer, Electronics Technician II

Gordon Kerschmann, Electronics Technician

Donna Kramer, Supervisor of Chemistry Stores

Frank L. May, Research Investigator

Norman Windsor, Senior Electronics Technician

*members of Graduate Faculty

General Information**Degrees and Areas of Concentration**

The chemistry department offers courses leading to the B.A. in chemistry; the B.S. in chemistry; in cooperation with the School of Education, the B.S. in education with emphasis in chemistry and the B.A. in chemistry with teacher certification; and, in cooperation with the School of Business Administration, the B.A. in chemistry with a business option.

The chemistry department is accredited by the American Chemical Society. Students completing the B.S. degree in chemistry are certified to the American Chemical Society and are well-prepared for graduate study in chemistry or a career in the chemical industry.

The chemistry department also offers work leading to the M.S. degree in chemistry, with or without a thesis. The Ph.D. degree in chemistry is offered in the emphasis areas: inorganic, organic, physical and biochemistry. In addition to a balanced program of basic graduate courses, the department

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offers special topics courses and seminars in current research areas. Research is being carried on in each of the above areas by postdoctoral associates, faculty members, and graduate and undergraduate students.

The department provides students with opportunities for strong interaction with faculty representing the various areas. Students and faculty working in one area consult freely with members in other areas. In addition, there are joint research projects involving faculty and students from two or more areas. The department currently includes 20 full-time and nine part-time faculty members.

Fellowships and Scholarships

The Brunngraber Undergraduate Research Fellowship and the **Lamberg Fellowship** are given annually to a chemistry major and are based on GPA, statement of research interests, and performance in completed course work.

The William and Erma Cooke Chemistry Fellowship is given annually to an outstanding full-time chemistry major who is at least a sophomore and has financial need.

Aid to Education Scholarships are funded by the Monsanto Co. and given to approximately 10 junior or senior chemistry majors annually. The awardees are selected by the faculty on the basis of merit, and the scholarships consist of a stipend for books, educational materials, and Student Affiliate membership dues to the American Chemical Society.

The Mallinckrodt Fellowship is given annually to an outstanding chemistry doctoral student who has completed the teaching and course work component of the program. It consists of a full stipend for the academic year.

Alumni Graduate Research Fellowships are available for summer study for selected chemistry graduate students. The selections are based on merit and the stipend is 20 percent of the academic year GTA stipend.

A series of undergraduate awards are given each year to the outstanding students. The Chemical Rubber Company Freshman Chemistry Award is given to the outstanding student in freshman chemistry, the American Chemical Society Division of Analytical Chemistry Award is given to the outstanding student in analytical chemistry, the American Chemical Society-St. Louis Section, Outstanding Junior Chemistry Major Award is given to the outstanding junior chemistry major, and the outstanding senior receives the Alan F. Berndt Award and the American Institute of Chemists Award.

Departmental Honors The chemistry department 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 Chemistry 290, Chemical Research, and have presented an acceptable thesis.

Minor in Chemistry

A minor in chemistry is available to students majoring in related areas. See General Information section for residency requirements.

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. It is recommended that candidates for the B.S. degree fulfill the language requirement in German or French, but any language which meets the College requirement for the B.A. degree is acceptable. Chemistry majors normally include Language 100 in their foreign language sequence.

Satisfactory/Unsatisfactory Restrictions Chemistry majors may not take required chemistry, mathematics, or physics courses on a satisfactory/unsatisfactory basis, nor may B.S. degree candidates take the three elective hours in science on this option.

Degree Requirements

Bachelor of Arts in Chemistry This degree is intended primarily for preprofessional students in the health science and related areas, as well as prelaw students interested in patent law. Candidates must complete the following chemistry courses:

- 11, Introductory Chemistry I
- 12, Introductory Chemistry II
- 122, Quantitative Analysis
- 202, Introduction to Chemical Literature
- 231, Physical Chemistry I
- 232, Physical Chemistry II
- 233, Laboratory in Physical Chemistry I
- 241, Basic Inorganic Chemistry
- 261, Structural Organic Chemistry
- 262, Organic Reactions
- 263, Techniques of Organic Chemistry
- 289, Seminar (2 credit hours)

In addition, candidates must complete one laboratory course chosen from Chemistry 234, 323, and 364.

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.

After fulfilling the general education and specific major degree requirements, students are to take the remaining hours required to complete the B.A. 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, music (appreciation, history, performance), philosophy, physics, political

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science, psychology, social work, sociology, business, education, engineering, and interdisciplinary. The chemistry department 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 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. Candidates must complete the requirements for the B.A. degree in chemistry. In addition, the following chemistry courses are required:

234, Laboratory in Physical Chemistry II
321, Instrumental Analysis
323, Laboratory in Instrumental Analysis
341, Inorganic Chemistry I
343, Inorganic Reactions
364, Synthetic and Analytical Methods of Organic Chemistry

Students must also take three elective hours of advanced work in chemistry at the 200 level or above.

Students are encouraged to take Chemistry 290, Chemical Research, to fulfill the advanced elective requirement.

Fifty hours of chemistry courses may be applied toward the degree. Each candidate must present a seminar and pass a comprehensive examination during the senior year.

Related Area Requirements

Bachelor of Arts and Bachelor of Science in Chemistry
 Candidates for both degrees must also complete:
Math 80, Analytic Geometry and Calculus I
Math 175, Analytic Geometry and Calculus II
Math 180, Analytic Geometry and Calculus III
 ***Physics 111**, Physics: Mechanics and Heat
 ***Physics 112**, Physics: Electricity, Magnetism, and Optics

*If neither of these courses included a laboratory, a separate laboratory course is required.

B.S. degree in Secondary Education with an Emphasis in Chemistry

In addition to the general requirements for the B.S. degree in secondary education, students must complete the following:

Science Core Courses:

Philosophy 280, Philosophy of Science
Biology 11, Introductory Biology I
Biology 12, Introductory Biology II
Chemistry 11, Introductory Chemistry I
Chemistry 12, Introductory Chemistry II
Geology 1, General Geology
Meteorology 1, Elementary Meteorology
Biology 120, Environmental Biology, or another environmental science
Physics 11, Basic Physics, or
Physics 111, Physics: Mechanics and Heat
Physics 12, Basic Physics, or
Physics 112, Physics: Electricity, Magnetism, and Optics

Chemistry Endorsement

Chemistry 122, Quantitative Analysis
Chemistry 230, Physical Chemistry for the Life Sciences or
Chemistry 231, Physical Chemistry I and **Chemistry 232**, Physical Chemistry II
Chemistry 261, Structural Organic Chemistry
Chemistry 262, Organic Reactions
Chemistry 263, Techniques of Organic Chemistry
Chemistry 371, Biochemistry

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 School of Education section of this Bulletin.)

Bachelor of Arts in Chemistry for Students with an Interest in Business The following courses are suggested for students seeking careers in chemical sales, market research, and so forth. In addition to the B.A. in chemistry requirements, the following core courses are suggested:

Econ 51, Principles of Microeconomics
BA 131, Elementary Statistics
BA 140, Fundamentals of Financial Accounting

Students may then choose to complete one of the following three sets of courses:

1) Marketing Management

BA 206, Basic Marketing
BA 275, Marketing Research
BA 303, Business-to-Business Marketing

2) Financial Management

BA 204, Financial Management
BA 334, Investments
BA 350, Financial Policies

3) Accounting

BA 145, Managerial Accounting
BA 340A, Financial Accounting and Reporting I
BA 345, Cost Accounting

Requirements for the Minor

Students may complete a minor in chemistry as described below:

The three required courses are:

Chem 11, Introductory Chemistry I
Chem 12, Introductory Chemistry II
Chem 261, Structural Organic Chemistry

Electives

At least one course is required from each of the following two groupings:

Lecture Courses

Chem 231, Physical Chemistry I
Chem 262, Organic Reactions
Chem 371, Biochemistry

Laboratory Courses

Chem 122, Quantitative Analysis
Chem 263, Techniques of Organic Chemistry

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.

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Biochemistry Certificate

The University offers a certificate program for science majors who are interested in careers in biochemistry. The Biochemistry Certificate is an interdisciplinary specialization which may be earned by completing the core requirements and either a chemistry track or a biology track. All students complete the following core requirements:

Biology 11, Introductory Biology I
Biology 12, Introductory Biology II
Biology 210, Cell Structure and Function
Biology 224, Genetics
Chem 11, Introductory Chemistry I
Chem 12, Introductory Chemistry II
Chem 122, Quantitative Analysis
Chem 261, Structural Organic Chemistry
Chem 262, Organic Reactions
Chem 263, Techniques of Organic Chemistry

and one of the following biology courses:

216, Microbiology
235, Development
310, Cell Physiology
326, Molecular Biology

Students choosing to complete the certificate through the biology track must take these additional courses:

Biology 376, Advanced Biological Chemistry
Biology 378, Advanced Biological Chemistry Laboratory
Biology 389, Senior Seminar
Chem 230, Physical Chemistry for the Life Sciences

Students choosing to complete the certificate through the chemistry track must take these additional chemistry courses:

231, Physical Chemistry I
232, Physical Chemistry II
233, Laboratory in Physical Chemistry
289, Seminar
371, Biochemistry
372, Advanced Biochemistry
373, Biochemical Techniques

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 pre candidates for the Ph.D. degree in chemistry. A student in the M.S. program, having completed at least 15 credit hours, may request to transfer to the Ph.D. program by petition to the department.

The department admissions committee, which makes admission recommendations to the chairperson, usually 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 for the academic year, and a limited number are also available during the summer. Research assistantships and fellowships are available for advanced students. For further information, contact the Graduate Admissions Committee, Department of Chemistry.

Preliminary Advisement

Students who have been admitted for graduate work in Chemistry will be contacted by the Director of Graduate Studies in order to develop a tentative plan of study which takes into consideration the student's background and interests. Entering students are required to demonstrate proficiency at the undergraduate level in four areas of chemistry (organic, inorganic, physical, and analytical).

Proficiency may be demonstrated in one of the following ways:

- 1) Outstanding performance in recent undergraduate course work.
- 2) 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.
- 3) 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 Students must take chemistry courses for graduate credit at the 300 or 400 level, including at least one in three of the four areas of chemistry: organic, inorganic, physical and biochemistry. Intermediate level courses (Chem 302, 303, 304, and 306) and Inorganic Chemistry I (Chem 341) may not be used to satisfy this distribution requirement.

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 biochemistry chemistry within two years of initial enrollment.

A minimum of 30 hours is required, including three hours in Chem 489, Chemistry Colloquium. No more than three hours in Chem 489, and no more than 6 hours of Chem 30x (intermediate level courses) may be applied toward the required minimum of 30 credit hours. Students are not required to take the cumulative examinations.

Master of Science in Chemistry with Thesis

Students selecting this option must be enrolled full-time in the day division for at least two consecutive semesters. During this time, students are expected to enroll in Chem 490, Graduate Research in Chemistry, and work on their theses.

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A maximum of 12 hours of Chemistry 490 may be applied toward the required 30 hours. At least nine hours must be at the 400 level, excluding Chemistry 490. A maximum of nine hours in 200-level or above courses outside the department may be accepted if students receive prior approval of their advisers and the department.

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 400 level. A maximum of six credits of Chemistry 490, Graduate Research in Chemistry, may be included in place of 300-level courses. A maximum of 12 hours taken in 200-level or above courses outside the department may be accepted with prior approval of the Director of Graduate Studies.

Doctoral Degree Requirements

Incoming doctoral students must demonstrate proficiency in organic, inorganic, physical and analytical chemistry within one year of initial enrollment.

A minimum of 60 hours is required, including research hours.

Cumulative Examinations In addition to the Ph.D. requirements set forth by the Graduate School, students seeking the Ph.D. in chemistry must take a series of cumulative examinations given eight times a year. Students must pass five of the examinations by the end of the third year and a total of eight examinations before completing the program. At least six of these examinations should be in the student's specialization area. Students are encouraged to begin the examination sequence during the first semester of graduate study, but must start no later than the second semester in the Ph.D. program. The examinations are usually given the second Saturday of each month, September through April. The mechanism for designing and deciding on passing and failing grades for each examination resides with faculty members in each specialization area.

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 489, 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 302, Intermediate Analytical Chemistry
Chem 303, Intermediate Physical Chemistry
Chem 304, Intermediate Inorganic Chemistry
Chem 306, Intermediate Organic Chemistry
Chem 321, Instrumental Analysis
Chem 323, Laboratory in Instrumental Analysis
Chem 341, Inorganic Chemistry I
Chem 343, Inorganic Reactions
Chem 419, Advanced Reading in Chemistry
Chem 448, Inorganic Problem Seminar
Chem 468, Organic Problem Seminar
Chem 481, Introduction to Graduate Study in Chemistry
Chem 482, Introduction to Graduate Research in Chemistry
Chem 489, Chemistry Colloquium
 but should include at least one in three of the four areas of chemistry: organic, inorganic, physical, and biochemistry. Courses in areas other than chemistry may be included with prior departmental approval.

2) Pass eight 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

Six copies of the dissertation must be submitted upon completion of the graduate research problem.

Probation and Dismissal

Students are dismissed from the program if they fail to pass at least three cumulative examinations before the end of the third year as applicants for the Ph.D. or otherwise fail to meet the standards set forth by the Graduate School.

Career Outlook

The B.S. degree in chemistry is the usual foundation for graduate study in chemistry, while any bachelor's degree in chemistry provides students with professional competence to enter the chemical industry. The St. Louis metropolitan area is a major center for industrial chemistry, and the demand for graduates consistently exceeds the supply.

A major in chemistry provides students excellent preprofessional training in the health sciences. 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 qualifications and training for a position as a laboratory technician in industry, hospital laboratories, etc.

Chemistry**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 adviser for further information.

The following courses fulfill the Natural Sciences and Mathematics [SM] breadth of study requirements: 1, 2, 3, 4, 9, 10, 11, 12, 13, 122, 202, 230, 231, 232, 233, 234, 261, 262, 263, 289, 290, 302, 303, 304, 306, 310, 321, 323, 331, 333, 336, 341, 342, 343, 352, 361, 362, 364, 366, 371, 372, 373, 374, 381.

1 General Chemistry I (3)

Prerequisite: Satisfactory score on math placement test. A broad introductory survey of chemical principles. Chem 1 plus Chem 9 are equivalent to Chem 11. This alternative may be attractive to students who are not mathematically prepared for Chem 11. Chem 1 and 2 will ordinarily satisfy chemistry requirements in nursing, forestry, physical therapy, and related professions. No student may take both Chem 1 and 10 for credit. Chemistry majors may not include both Chem 1 and 11 in the 120 hours required for graduation. Three hours of lecture per week.

2 General Organic Chemistry (3)

Prerequisite: Chem 1. A short course in organic chemistry with biochemical applications. Recommended for students in nursing, forestry, physical therapy, and related professions. This course should not be taken by majors in the physical or biological sciences. Chemistry majors may not include Chem 2 in the 120 hours required for graduation. Three hours of lecture per week.

3 General Chemistry Laboratory (2)

Prerequisite: Chem 1 (may be taken concurrently). Experiments to acquaint students with chemistry in the laboratory. No student may take both Chem 3 and 9 for credit. Three and one-half hours of laboratory per week.

4 Laboratory in General Organic Chemistry (2)

Prerequisite: Chem 2 (may be taken concurrently). Experiments to introduce the student to organic and biochemistry. These will include studies of the properties of organic compounds and introduce students to methods of synthesis and analysis. Three and one-half hours of laboratory per week.

9 General Chemistry II (3)

Prerequisites: Chem 1 (or equivalent and consent of instructor) and Math 30 and 35 (may be taken concurrently). Additional work on the topics of Chem 1, with emphasis on quantitative material. Introduction to the chemical laboratory. Chem 1 plus Chem 9 is equivalent to Chem 11 for science majors. Chemistry majors who receive credit for Chem 1 and Chem 9 may not also include Chem 10 or Chem 11 in the 120 hours required for graduation. No student may take both Chem 3 and Chem 9 for credit. Two hours of lecture per week, three and one-half hours of lab or one hour of discussion on alternate weeks.

10 Chemistry in Society (3)

A survey of chemistry and its relevance to contemporary problems, including an introduction to important chemical principles. Laboratory experiments are designed to complement the lectures. Chem 10 does not satisfy the prerequisite of any course. No student may take both Chem 1 and 10 for credit. Chemistry majors may not include Chem 10 in the 120 hours required for graduation. Two hours of lecture per week; two hours of lab and one hour of discussion on alternate weeks.

11 Introductory Chemistry I (5)

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 1 and 11, nor both Chem 10 and 11 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.

12 Introductory Chemistry II (5)

Prerequisite: Chem 11 or advanced placement. Lecture and laboratory are a continuation of Chem 11. Three hours of lecture and one hour of discussion per week; one hour laboratory-lecture and three hours of laboratory weekly.

13 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 11 and 12.

122 Quantitative Analysis (3)

Prerequisite: Chem 12. 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.

202 Introduction to Chemical Literature (1)

Prerequisite: Chem 262 (may be taken concurrently). The course will familiarize the student with the literature of chemistry and its use. One hour of lecture per week.

230 Physical Chemistry for the Life Sciences (4)

Prerequisites: Chem 122, Math 80, Math 100, or equivalent, and Physics 11 and 12. Principles and applications of physical chemistry appropriate to students pursuing degree programs in the life sciences. Topics discussed include thermodynamics, equilibria, kinetics, and spectroscopy.

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231 Physical Chemistry I (3)

Prerequisites: Chem 122 and Math 180 (may be taken concurrently), and Physics 111 (or equivalent). Principles of physical chemistry including thermodynamics, theory of gases, phase equilibria, kinetics, crystal structure, spectroscopy, and quantum mechanics. Three hours of lecture per week.

232 Physical Chemistry II (3)

Prerequisite: Chem 231. Continuation of Chem 231. Three hours of lecture per week.

233 Laboratory in Physical Chemistry I (2)

Prerequisite: Chem 231 (may be taken concurrently). Experiments designed to illustrate principles introduced in Chem 231. One hour of lecture and four and one-half hours of laboratory per week.

234 Laboratory in Physical Chemistry II (2)

Prerequisites: Chem 232 (may be taken concurrently) and Chem 233. Experiments designed to illustrate principles introduced in Chem 232. One hour of lecture and four and one-half hours of laboratory per week.

241 Basic Inorganic Chemistry (2)

Prerequisites: Chem 12. 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 compounds.

261 Structural Organic Chemistry (3)

Prerequisite: Chem 12. An introduction to the structure, properties, synthesis, and reactions of aliphatic and aromatic carbon compounds. Three hours of lecture per week.

262 Organic Reactions (3)

Prerequisite: Chem 261. A systematic study of organic reactions and their mechanisms; organic synthetic methods. Three hours of lecture per week.

263 Techniques of Organic Chemistry (2)

Prerequisite: Chem 261 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.

280 Curriculum and Methods of Teaching Physical Sciences (3)

(Same as SEC ED 240.) Prerequisites: SEC ED 213 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.

283 Chemistry/Physics Teaching Intern Seminar (1)

(Same as Physics 283.) Prerequisite: Chem 280 or Physics 280. 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 290. One hour discussion per week.

289 Seminar (1)

Prerequisites: Chem 202 and senior standing. Presentation of papers by students, faculty, and invited speakers. All majors must enroll for credit during two semesters of the senior year. Completion of a comprehensive examination during one of the semesters is a course requirement. One hour of lecture and one hour of discussion per week.

290 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.

302 Intermediate Analytical Chemistry (3)

Prerequisites: Chem 122 and consent of the graduate adviser. A review of the basic concepts of analytical chemistry. Topics to include principles of quantitative analysis, with emphasis on modern instrumental techniques. Course designed for post baccalaureate students; may not be used to fulfill requirements for undergraduate degree programs in chemistry. One to three hours of lecture per week.

303 Intermediate Physical Chemistry (3)

Prerequisites: Chem 231, 232, 233, and permission of graduate adviser. A review of basic principles of physical chemistry. Topics to include thermodynamics, kinetics, and quantum chemistry. Course designed for post baccalaureate students; may not be used to fulfill requirements for undergraduate programs in chemistry. Three hours of lecture per week.

304 Intermediate Inorganic Chemistry (3)

Prerequisite: Permission of the graduate adviser. A review of basic inorganic chemistry. Topics will include atomic and molecular structure, acids and bases, the chemistry of the solid state, and main group and transition metal chemistry. Course designed for post-baccalaureate students; may not be used to fulfill requirements for undergraduate degree programs in chemistry. Three hours of lecture per week.

306 Intermediate Organic Chemistry (3)

Prerequisites: Chem 261, 262, 263, and permission of the graduate adviser. A review of the basic principles of organic chemistry. Topics to include structure, physical and spectroscopic properties and reactions of major classes of organic compounds, reaction mechanisms, and a survey of synthetic methods. Course designed for post-baccalaureate students; may not be used to fulfill requirements for undergraduate degree programs in chemistry. Three hours of lecture per week.

310 History of Chemistry (3)

Prerequisite: Chem 12 or consent of instructor. The development of chemistry, including early theories of matter, alchemy, iatrochemistry, the period of Lavoisier, and selected topics from the nineteenth and twentieth centuries. Three hours of lecture per week.

Chemistry**321 Instrumental Analysis (2)**

Prerequisite: Chem 233. 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.

323 Laboratory in Instrumental Analysis (2)

Prerequisite: Chem 321. 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.

331 Advanced Physical Chemistry (3)

Prerequisite: Chem 232. Study of advanced theoretical and experimental problems in modern physical chemistry. Selected topics such as statistical mechanics, properties of solids, reaction dynamics, molecular orbital theory, and spectroscopic methods may be included. Three hours of lecture per week.

333 Thermodynamics (3)

Prerequisite: Chem 232. Selected advanced topics including solid-state, nonequilibrium, and statistical thermodynamics. Three hours of lecture per week.

336 Introduction to Quantum Chemistry (3)

Prerequisite: Chem 232 or consent of instructor. A brief but quantitative introduction to the application of quantum mechanics to problems in chemistry, covering the uncertainty principle, operators, solution of Schrodinger's equation for simple systems, perturbation theory, variation methods, interaction of radiation with matter, atomic and molecular structure, and theory of collisions. Three hours of lecture per week.

341 Inorganic Chemistry I (3)

Prerequisites: Chem 232, 241 and 262 (may be taken concurrently). 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.

342 Inorganic Chemistry II (3)

Prerequisite: Chem 341. Continuation of Chem 341 with emphasis on such topics as metals, nonaqueous solvents, chemical dynamics, organometallic chemistry, chemistry of the less common elements, and certain frontier areas. Three hours of lecture per week.

343 Inorganic Reactions (2)

Prerequisite: Chem 233, 341 and 364 (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.

352 Nuclear Chemistry (3)

Prerequisite: Chem 232. Properties of radioactive nuclei, nature of radioactivity, nuclear reactions, and applications of nucleonics to chemistry. Three hours of lecture per week.

361 Advanced Organic Chemistry (3)

Prerequisite: Chem 262. Contemporary developments in the study of the structure of carbon compounds and the mechanism of their reactions. Selected topics such as natural products, heterocyclic compounds, stereochemistry, aromaticity, reaction intermediates and photochemistry will be included. Three hours of lecture per week.

362 Spectroscopic Identification of Organic Compounds (3)

Prerequisite: Chem 364. An applied approach to the use of spectroscopic techniques in organic chemistry. Topics to include integrated applications of infrared and Raman spectroscopy, nuclear magnetic resonance (^{13}C and ^1H , cw and pulsed) and mass spectroscopy for the purpose of elucidating the structure of organic compounds. Three hours of lecture per week.

364 Synthetic and Analytical Methods of Organic Chemistry (2)

Prerequisites: Chem 122, 202 (may be taken concurrently), 262, and 263. 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.

366 Physical Organic Chemistry (3)

Prerequisites: Chem 262 and 232 (may be taken concurrently). Advanced topics in the theory of organic chemistry, including conformational analysis, reaction kinetics and mechanisms, and transition state theory. Three hours of lecture per week.

371 Biochemistry (3)

(Same as Biology 371) Prerequisite: Chem 261 and either Biology 11 or Chem 262. 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 Biology 371 and Chemistry 371. Biology 371 may not be used to fulfill the 300-level lecture course requirement for the B.S. in Biology.

372 Advanced Biochemistry (3)

Prerequisite: Chem 371. Selected advanced topics in the chemistry of life processes. Three hours of lecture per week.

373 Biochemical Techniques (2)

Prerequisite: Chem 371 (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 hours of laboratory per week.

374 Advanced Biochemistry Laboratory (2)

Prerequisites: Chem 372 and 373 (latter may be taken concurrently). Continuation of Chem 373. Laboratory to accompany Chem 372. One hour of lecture and three and one-half hours of laboratory per week.

Chemistry

381 Special Topics (1-10)

Prerequisite: Consent of instructor. A reading and seminar course in selected advanced topics.

414 Molecular Spectroscopy (3)

Prerequisite: Chem 232. A broad treatment of the interaction of electromagnetic radiation with matter, emphasizing the unity of such interactions. Interpretation of molecular structure in terms of molecular, electronic, and geometric structure and dynamics. Description and interpretation of physical techniques applied to chemistry. Three hours of lecture per week.

415 Organometallic Chemistry (3)

Prerequisite: Consent of instructor. A systematic study of the compounds containing a carbon-metal or a carbon-metalloid bond. Emphasis will be placed upon the structural types and chemical reactivity of this class of compounds. Topics will also include the role of organometallic compounds in synthesis and their catalytic behavior. Three hours of lecture per week.

416 Chemical Applications of Group Theory (3)

Prerequisite: Chem 232. A brief introduction to the fundamental relationships of group theory. Application of group theory to molecular orbital theory, molecular vibrations, and molecular spectra. Three hours of lecture per week.

417 Environmental Chemistry (3)

Prerequisite: Consent of instructor. Selected topics in the chemistry of the environment including air and water pollution. Subjects to be discussed include photochemical smog, gaseous and particulate contamination, biodegradability of chemicals, and chemical effects of contaminants on living species. Three hours of lecture per week.

419 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.

431 Advanced Chemical Calculations (3)

Prerequisites: Math 180 and Chem 232. Advanced application of analytical techniques to chemical problems; complex variables, linear algebra, and series techniques. Three hours of lecture per week.

433 Statistical Mechanics (3)

Prerequisites: Chem 333 and 431. Consideration of topics of chemical-physical interest including thermophysical properties of fluids and solids, Fermi-Dirac and Bose-Einstein fluids, theory of fluctuations, and irreversible processes. Three hours of lecture per week.

434 Interaction of Electromagnetic Radiation and Matter (3)

Prerequisite: Chem 436. Treatment of the theoretical description of interaction between atoms and molecules and electromagnetic fields. Includes such topics as electromagnetic field theory, spin systems in electromagnetic fields, time-dependent perturbation theory, emission and absorption of radiation, and selected applications to chemical and physical systems. Three hours of lecture per week.

436 Quantum Chemistry II (3)

Prerequisites: Chem 336 and 431. Advanced theoretical concepts; angular momentum, atomic and molecular structure. Three hours of lecture per week.

439 Special Topics in Physical Chemistry (1-3)

Prerequisite: Consent of instructor. Selected topics in physical chemistry. May be taken more than once for credit.

441 Typical Element Chemistry (3)

Prerequisite: Chem 341 or an equivalent course; prior enrollment in Chem 342 is desirable. 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.

442 Coordination Chemistry (3)

Prerequisite: Chem 341 or an equivalent course; prior enrollment in Chem 342 is desirable. The chemistry of the coordination compounds of the transition metals including such topics as kinetics and mechanisms of reaction, stereochemistry, ligand field theory, stability and organotransition element chemistry. Three hours of lecture per week.

443 Physical Inorganic Chemistry (3)

Prerequisites: Chem 341 or an equivalent course; prior enrollment in Chem 342 is desirable. Study of physical concepts with emphasis on physical methods applied to inorganic systems, spectral and magnetic properties of coordination compounds, and application of bonding theories to inorganic chemistry. Three hours of lecture per week.

448 Problem Seminar in Inorganic Chemistry (1)

Prerequisite: Consent of the inorganic chemistry staff. Problems from the current literature, presentations, and discussions by faculty and students.

449 Special Topics in Inorganic Chemistry (1-3)

Prerequisite: Consent of instructor. Selected topics in inorganic chemistry. May be taken more than once for credit.

463 Stereochemistry (3)

Prerequisite: Chem 361 or 366. A study of molecular geometry and relationships in space between atoms and groups in a molecule. Topics to be covered include optical isomerism, conformational analysis, asymmetric synthesis, and topology. Three hours of lecture per week.

464 Organic Photochemistry (3)

Prerequisites: Chem 361 and 366. A study of the synthetic and theoretical aspects and applications of light-induced reactions. Topics to be covered include primary photophysical processes, reaction types, and photosensitization. Three hours of lecture per week.

465 Chemistry of Natural Products (3)

Prerequisite: Chem 361. The chemistry and physiological action of natural products; methods of isolation, determination of structures, synthesis, and biosynthesis. Three hours of lecture per week.

Chemistry

468 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.

469 Special Topics in Organic Chemistry (3)

Prerequisite: Consent of instructor. Advanced topics of special current interest. May be taken more than once for credit.

481 Introduction to Graduate Study in Chemistry (1)

Prerequisite: Consent of Graduate Advisor. 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 advisor.

482 Introduction to Graduate Research in Chemistry (1)

Prerequisite: Consent of Graduate Advisor. 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.

489 Chemistry Colloquium (1)

Presentation of papers by students, faculty, and invited speakers. One hour per week.

490 Graduate Research in Chemistry (1-10)

Communication

Faculty

Thomas McPhail, Professor*; Chairperson
Ph.D., Purdue University
Michael Murray, Professor*;
Ph.D., University of Missouri-Columbia
Donald Shields, Professor*
Ph.D., University of Minnesota
James Fay, Associate Professor*
M.F.A., Tulane University
Elizabeth Kizer, Associate Professor*
Ph.D., Purdue University
C. Thomas Preston, Associate Professor*;
Ph.D., University of Nebraska-Lincoln
Rita Csapo-Sweet, Assistant Professor
Ed.D., Harvard University
Donald Jung, Assistant Professor
Ph.D., Purdue University
Ronald Turner, Assistant Professor*; Vice President
for University Outreach and Director of Cooperative
Extension
Ph.D., University of Missouri-Columbia
Clark McMillion, Lecturer
M.A., State University College of New York at
Brockport
Steven Phipps, Lecturer
Ph.D., University of Missouri-Columbia
Sidney Savan, Lecturer
B.S., Washington University

*members of Graduate Faculty

Each member of the faculty of the Department of Communication represents a requisite balance between practitioner and scholar/teacher. The department's curricula and activities demand a faculty with practical expertise in such disciplines as communication, radio/television/film, and public policy. Each faculty member has demonstrated repeated excellence as a practitioner through varied endeavors in workshops and lectures, as well as communication, radio/television/film, and video programs and productions. The faculty also acknowledges the need for scholarly research as a contribution to the continued growth of academic study, publishing the results of their scholarly pursuits in a wide spectrum of scholarly journals and presenting papers at regional, national, and international professional conferences. Additionally, faculty members contribute to the University's mission through active public service and a commitment to high standards of academic achievement. Annual student evaluations rate the department's teaching as excellent.

General Information

The Bachelor of Arts in Communication

The B.A. in communication is a flexible degree program that allows the student to emphasize a particular field of study (communication, theory and rhetoric or mass communication) or tailor a specific concentration to meet the student's individual needs and interests. An emphasis in communication theory or mass communication is recommended for students with clear career goals in one of these areas. The communication major is recommended for students interested in teacher certification, the Bachelor of General Studies degree in the Evening College, or in specific interdisciplinary fields such as public relations/advertising/organizational communication, information science, electronic journalism, television, media administration, and marketing communication. The faculty encourages all students to meet early and often with their adviser to select a meaningful group of courses for a coherent, career-oriented academic program.

Minors and Certificates for Communication

The department actively supports the following minor and certificate programs open to students majoring in communication: Minor in Public Affairs Journalism, Minor in Photographic Studies, Minor in Legal Studies, the Certificate in Writing, and the Certificate in Secondary Education. For more information, see Certificate Programs and Interdisciplinary Studies in this *Bulletin*.

Undergraduate Studies

General Education Requirements

Majors must satisfy the University and College general education requirements. The College's foreign language requirement may be taken in any language. Communication courses may not be taken on a satisfactory/unsatisfactory basis.

After fulfilling the general education and specific major degree requirements, students are to take the remaining 62 hours required to complete the B.A. degree in communication from courses, which the respective 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), biology, chemistry, communication, criminology and criminal justice, economics, English, foreign languages/literatures, history, mathematics/computer science, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, business, education, engineering, and interdisciplinary coursework.

Graduate Studies

The department is awaiting CBHE approval for a M.A. degree. Please call the department or visit our Web page for further information.

Communication

Course Emphasis Categories

Courses offered by the communication department are categorized below. Students will need to refer to this list in choosing courses to meet the requirements of their particular emphasis area.

Communication Theory and Rhetoric Area Courses

- 30, Interpersonal Communication I
- 40, Introduction to Public Speaking
- 41, Basic Public Debate
- 65, Introduction to Information Technology
- 108, Advertising Copywriting
- 130, Interpersonal Communication II
- 135, Communication Theory
- 140, Advanced Public Speaking
- 141, Business and Professional Speaking
- 143, Parliamentary Procedure
- 150, Introduction to Public Relations
- 228, Public Relations Writing
- 230, Small Group Communication
- 231, Communication in the Organization
- 240, Persuasive Communication
- 241, Argumentation and Debate
- 243, Communication in American Politics
- 330, Empirical Research in Communication
- 331, Research Methods in Communication
- 332, Intercultural Communication
- 334, Advertising Media Planning
- 335, Seminar in Applied Communication Research
- 336, Communication in Advertising
- 337, Male/Female Communication
- 340, Rhetorical Criticism
- 341, Classical Rhetoric and Public Address
- 342, Modern Rhetoric and Public Address
- 343, The Rhetoric of Protest
- 344, Advanced Argumentation Theory
- 345, Theory and Practice of Interviewing
- 346, Advanced Interviewing Techniques
- 358, Communication in Public Relations

Mass Communication Area Courses

- 50, Introduction to Mass Media
- 65, Introduction to Information Technology
- 70, Introduction to Cinema
- 108, Advertising Copywriting
- 110, Introduction to Radio and Television Broadcasting
- 114, Radio Production I
- 118, Radio and Television Announcing
- 150, Introduction to Public Relations
- 210, Television Production I
- 212, Broadcast Writing and Reporting
- 214, News Writing
- 215, Radio Production II
- 216, Radio News
- 217, Script Writing for Business and Industry
- 218, Public Policy in Telecommunication
- 219, Promotion, Publicity, and Advertising in Broadcasting
- 228, Public Relations Writing
- 271, History of Film to World War II
- 272, History of Film Since World War II
- 273, Basic Film Production
- 310, Television Production II
- 311, Broadcast Management
- 316, Television News
- 317, Radio and the Recording Industry
- 334, Advertising Media Planning
- 350, Mass Communication History and Criticism
- 352, Mass Media Criticism

- 354, Comparative Telecommunication Systems
- 355, Media Law and Regulation
- 358, Communication in Public Relations
- 370, Documentary Film

Degree Requirements

Bachelor of Arts in Communication

Majors must complete a minimum of 36, but not more than 45, hours in communication courses. At least 18 of these hours must be taken at UM-St. Louis. Each major must take at least six hours of communication courses numbered 200-299 and at least six hours of communication courses numbered 300-399. Every major must complete the requirements for an emphasis area as described below.

Emphasis Areas

Two emphasis areas are available: Communication Theory and Rhetoric and Mass Communication.

Required Courses for All Majors

- 40, Introduction to Public Speaking
- 135, Communication Theory
- 194, 196, 197, 198, (at least three hours of Practicum courses) or 393, 394, 396, 397, (at least three hours of Internship courses).

Emphasis Area Requirements

In addition to the above required course work, majors must complete the requirements specified below for one of the following emphasis areas:

I Communication Theory and Rhetoric

In addition to the required courses for all majors, students must take the following:

- a. 230, Small Group Communication
- b. Twelve additional hours in Communication theory and Rhetoric
- c. One of the following Mass Communication courses:
 - 50, Introduction to Mass Media
 - 70, Introduction to Cinema
 - 110, Introduction to Radio and Television Broadcasting
- d. Plus 9-18 hours from any area or areas in the communication department.

II Mass Communication

In addition to the required courses for all majors, students must take the following:

- a. 50, Introduction to Mass Media
- 70, Introduction to Cinema
- 110, Introduction to Radio and Television Broadcasting
- b. Nine additional hours in Mass Communication
- c. Plus 9-18 hours from any area or areas in the communication department.

Bachelor of Arts in Communication with Certification in Secondary Education

In addition to the requirements for the B.A. in Communication and general requirements set by the School of Education, students must meet the state requirements for certification.

The B.A. and certification for grades 7-12 can be completed by taking a minimum of 39 hours in communication, selected according to departmental recommendations. The B.A. and certification for grades 7-9 can be obtained by taking 36 hours in communication, selected according to departmental recommendations.

Communication

Requirements of the School of Education include courses in professional education and English 262, The Curriculum and Methods of Teaching English (same as SEC ED 232).

Departmental Activities, Laboratories, and Internships
Cocurricular projects and activities relevant to student interests and vocational plans are sponsored and advised by the department (debate and forensic, television club). In addition to the traditional classroom experience, students receive practical training in the department's laboratory facility: the Lucas Hall Video Laboratory.

Internships at radio and television stations, community agencies, newspapers, public relations, marketing, and advertising firms, and a variety of business organizations provide unique opportunities for majors to apply their communication studies.

Minors in Communication

Students with majors other than communication may select from two minors to complement their academic and career goals.

The following conditions apply to all minors:
Credit hours in Communication 195, and/or Communication 395, may be substituted for credit hours listed below with written permission of the communication department chairperson.

At least nine of the 18 hours required for the minor must be taken at UM-St. Louis.

A minimum GPA of 2.5 is required in the minor.

I Requirements for the minor in Communication Theory and Rhetoric are as follows:

- a. 40, Introduction to Public Speaking
135 Communication Theory
- b. One of the following Communication Theory and Rhetoric courses:
30, Interpersonal Communication I
140, Advanced Public Speaking
141, Business and Professional Speaking
- c. Plus nine hours from courses in Communication Theory and Rhetoric at the 200 level or above.

II Requirements for a minor in Mass Communication are as follows:

- a. 50, Introduction to Mass Media
110, Introduction to Radio and Television Broadcasting
- b. One of the following Mass Communication courses:
70, Introduction to Cinema
350, Mass Communication History and Criticism
- c. Plus nine hours in Mass Communication courses at the 200 level or above.

Career Outlook

The B.A. in communication prepares students for careers in numerous fields. Past graduates are working in the following positions: radio and television news, promotion and public relations, administration, directing, announcing, production, and sports journalism; media management; public relations, advertising, marketing, market research, corporate media, sales, training, speech writing, print editing, journalism, teaching, and research. Other students have pursued graduate education in communication programs offering the M.A. and Ph.D. degrees.

Communication

Course Descriptions

Prerequisites may be waived by consent of the department.

The following courses fulfill the Humanities [H] breadth of study requirements: 70, 160, 260, 271, 272, 337, 340, 341, 342, 343, 344, 350, 352.

The following courses fulfill the Social Sciences [SS] breadth of study requirements: 65, 135, 218, 230, 231, 243, 330, 331, 332, 333, 335, 350, 354, 356.

30 Interpersonal Communication I (3)

Development of basic one-to-one communication skills. Includes self-awareness, listening, nonverbal communication, feedback, roleplaying, and receiver awareness.

40 Introduction to Public Speaking (3)

Theories and techniques of organization, evidence, argumentation, persuasion, and delivery in public speaking.

41 Basic Public Debate (3)

History and practice of debate in the public arena, with opportunities to prepare for a variety of public forums for argumentation. Various debate formats, including panel discussions, joint news conferences, and audience-participation debates, in a variety of settings, will be surveyed.

50 Introduction to Mass Media (3)

Introduction to oral, print, and electronic media of communication. Emphasis on history, theory, and criticism of the mass media as cultural institutions.

65 Introduction to Information Technology (3)

The production and consumption of information by individuals, the work place and society. Emphasis on the changing nature of communication processes as a result of the expansion of communication technologies.

70 Introduction to Cinema (3)

An introduction to the history, rhetoric, and aesthetics of film. Film theory and criticism will be studied as well as major genres, authors, and artists.

95 Seminar in Communication (3)

Prerequisite: Consent of instructor. In-depth treatment of topics pertaining to current research in the department or otherwise of timely interest to students or faculty.

108 Advertising Copywriting (3)

(Same as English 108.) To give students a hands-on approach for writing advertising material for print and broadcast against tight deadlines in a professional setting.

110 Introduction to Radio and Television Broadcasting (3)

An introduction to broadcasting, including the areas of history, government regulations, station operation, and program development.

114 Radio Production I (3)

Prerequisite: Comm 110. Theory and practice in the creation of radio programs. Laboratory experience included.

118 Radio and Television Announcing (3)

Prerequisite: Comm 110; 114, and 210 recommended. Training in radio and television studio procedures. Production and criticism of lab programs, including news, continuity, interviews, and oral improvisation. Classroom meetings at the radio lab and the television lab, plus lab hours to be arranged.

130 Interpersonal Communication II (3)

Prerequisite: Comm 30. Interpersonal communication in relationships within group contexts, such as family, classroom, and business. Various theories and diagnostic approaches to interpersonal communication. Extensive laboratory sessions utilizing individual and group exercises.

135 Communication Theory (3)

Survey of elements and processes critical to human communication behavior. Comparison of influential communication theories.

140 Advanced Public Speaking (3)

Prerequisite: Comm 40. Application of advanced public speaking skills, with emphasis on special occasion speaking situations.

141 Business and Professional Speaking (3)

Prerequisite: Comm 40. Application of communication skills in the business and professional environment with emphasis on presentational speaking, organizational constructs germane to professional careers, and uses of various media.

143 Parliamentary Procedure (2)

Prerequisite: Comm 40. Study and practice in rules of procedure by which self-governing groups transact business.

150 Introduction to Public Relations (3)

Prerequisite: Comm 40 or 50. Publicity methods and public relations representation of profit and nonprofit institutions to the public; use of communication research and media, as applied to the public relations profession.

160 Fundamentals of Oral Interpretation (3)

Prerequisite: Comm 40 or consent of instructor. An introduction to the analysis of literature and to the principles of its oral presentation by the interpreter.

193 Practicum in Applied Communication (1-3)

Prerequisite: Consent of instructor. Practicum work at any of the UM-St. Louis public relations offices, sports and school newspapers, Office of Research or Photography Services. Work must be done on campus, under supervision of a working professional in the field, in consultation with a faculty member.

194 Practicum in Debate/Forensics (1-3)

Practical work in the University debate and forensics program, supervised by a faculty member. Repeatable, but no more than six credit hours may be earned in departmental practicum courses.

195 Seminar in Communication (3)

Prerequisite: Consent of instructor. In-depth study of topics pertaining to current research in the department or otherwise of timely interest to students or faculty.

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196 Practicum in Radio (1-3)

Prerequisites: Comm 110 and consent of instructor; open to communication majors only; not open to students who have any Y or delayed grades outstanding. Practical work at the campus radio station, supervised by a faculty member. Repeatable, but no more than six credit hours may be earned in departmental practicum courses.

197 Practicum in Television/Film (1-3)

Prerequisites: Comm 110 and consent of instructor; open to communication majors only; not open to students who have any Y or delayed grades outstanding. Practical work at one of the campus television studios or for the UM-St. Louis Television/Film Club, supervised by a faculty member. Repeatable, but no more than six credit hours may be earned in departmental practicum courses.

210 Television Production I (3)

Prerequisites: Comm 110 and consent of instructor. A study of the basic theories and practices of television production. The areas of producing and directing will be studied. The class will provide the student with practical experience in camera operation, switching, lighting, and mixing. Lab arranged.

212 Broadcast Writing and Reporting (3)

Prerequisites: Comm 110 and 214, or English 214, or permission of instructor. Elementary principles and practice of writing for radio and television in varied program formats, emphasis on preparation of written materials for news and public affairs presentation. Lecture and lab.

214 News Writing (3)

(Same as English 214.) Prerequisite: English 10 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.

215 Radio Production II (3)

Prerequisite: Comm 114. Study of advanced theories and techniques of audio production, building on principles and skills learned in Radio Production I. Exploration of complex program formats such as radio drama and special problems such as those encountered in recording live music.

216 Radio News (3)

Prerequisite: Comm 114. Theory and laboratory practice in the gathering, writing, and delivery of news through radio. Lab hours to be arranged.

217 Script Writing for Business and Industry (3)

Prerequisites: Comm 210 and 212. Script writing for training, motivation, education, and other applications. Students will identify and discuss communication problems and solutions in live, slide/tape, video, and film script formats.

218 Public Policy in Telecommunication (3)

Prerequisite: Comm 65 or 110 or consent of instructor. An examination of the structure and operation of domestic, international, commercial and public telecommunication. Regulatory agencies, both private and public, will be considered in terms of their effect on programming and ownership.

219 Promotion, Publicity, and Advertising in Broadcasting (3)

Prerequisite: Comm 110. Introduction to theory and practice in the planning, execution, and evaluation of persuasive campaigns involving radio and television. Emphasis on concept developments and production elements. Discussion of broadcast ethics.

228 Public Relations Writing (3)

(Same as English 228.) Prerequisite: English 214 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.

230 Small Group Communication (3)

Prerequisite: Comm 40. Development of communication skills needed in small group decision making. Application of these skills to contemporary problems.

231 Communication in the Organization (3)

Prerequisite: Junior standing or consent of instructor. Course integrates communication theories applicable to the structure and function of organizations. The effect of communication variables on departmental interface, member satisfaction and motivation, leadership and subordinate styles, and perception of the organization by the external environment.

240 Persuasive Communication (3)

Prerequisite: Comm 40. A study of persuasive communication, including theories, techniques, forms, functions, applications, potential, and limitations for the individual and organizations. Insights from both classical rhetoric and contemporary communication theory.

241 Argumentation and Debate (3)

Prerequisite: Comm 40, or 41, or consent of instructor. Principles of argumentation and debate with practice in preparing briefs and in delivering spoken arguments in formal debate. Emphasis on analysis of issues, logical reasoning, and audience analysis.

243 Communication in American Politics (3)

Prerequisite: Comm 40. Analysis of audience response and media preferences in political campaigns, campaign speeches, candidates' uses of television and other mass media, and measuring effectiveness of campaign communications.

260 Advanced Oral Interpretation (3)

Prerequisite: Comm 160. Advanced practice in analyzing and performing oral interpretation of literary forms.

271 History of Film to World War II (3)

Prerequisite: Comm 70 or consent of instructor. History of world cinema from the late nineteenth century to the 1940s.

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272 History of Film Since World War II (3)

Prerequisite: Comm 70 or consent of instructor. History of world cinema from the 1940s to the present day.

273 Basic Film Production (3)

Prerequisite: Comm 70. Introduction to filmmaking equipment and practices. Production of short films.

310 Television Production II (3)

Prerequisite: Comm 210. Study of advanced theories of television production. Refinement of studio television principles learned in Comm 210. Exploration of complex program formats. Lab arranged.

311 Broadcast Management (3)

Prerequisite: Comm 110. Introduction to theories of management, with application to radio and television station operations. Discussion of economic, legal, and ethical problems and issues.

316 Television News (3)

Prerequisite: Comm 210. Theory and laboratory practice in the gathering, writing, and delivery of news through television. Lab arranged.

317 Radio and the Recording Industry (3)

Prerequisite: Junior standing. Historical development and current status of the recording industry, particularly as it interacts with the broadcast industry. Impact of radio and recording technology on the development of rock and other popular music.

330 Empirical Research in Communication (3)

Prerequisite: Comm 135. Introduction to the fundamental tools of quantitative research in communication, including data analysis, statistical design and methods, basic measurement concepts and designs for empirical research.

331 Research Methods in Communication (3)

Prerequisite: Comm 135. Introductory study of research designs and methodologies employed in communication, including historical, critical, and empirical methods. Review of research reports which exemplify these methods.

332 Intercultural Communication (3)

Prerequisite: Junior standing or consent of the instructor. Study of culture as a variable in both interpersonal and collective communicative situations. Emphasis upon opportunities and problems arising from similarities or differences in communication patterns, processes, and codes among various cultural groups.

333 Communication Audit (3)

Prerequisite: Comm 231. The application of specific empirical research designs to evaluate communication flows, effectiveness, or channels in complex organizations.

334 Advertising Media Planning (3)

Prerequisite: Comm 50. A hands-on study of how to determine an advertising budget, select media and develop a strategic plan.

335 Seminar in Applied Communication Research (3)

Prerequisites: Comm 135 and consent of instructor. This course explores the use of communication concepts, theories, methods, and designs in applied field settings with an emphasis on original research.

336 Communication in Advertising (3)

Prerequisites: Comm 50 and junior standing, or consent of instructor. Overview of components in persuasive messages and how advertising messages and campaigns use various media to reach target audiences.

337 Male/Female Communication (3)

Prerequisite: Junior standing or consent of instructor. This course explores the influence of gender upon contemporary American communication behavior. Topics include semantic and syntactic variations in male and female speech, gender-role development as process and product of communication, analysis of communication patterns and barriers within gender groups. Mass, public, interpersonal, and dyadic communication contexts are considered.

340 Rhetorical Criticism (3)

Prerequisite: Comm 40. The application of rhetorical theories to the analytical and critical explanation of persuasive messages.

341 Classical Rhetoric and Public Address (3)

Prerequisite: Comm 40 or consent of instructor. A survey of the history and theories of persuasion and public address from ancient times to the Renaissance.

342 Modern Rhetoric and Public Address (3)

Prerequisite: Comm 40 or consent of instructor. A survey of the history and theories of persuasion and public address from the post-Renaissance era to the present.

343 The Rhetoric of Protest (3)

Prerequisite: Comm 40. An examination of the persuasive messages and tactics used in social movements and their campaigns.

344 Advanced Argumentation Theory (3)

Prerequisite: Comm 241 or consent of instructor. This course focuses on advanced argumentation theory. It is aimed at providing an advanced understanding of the complex issues faced by argumentation scholars.

345 Theory and Practice of Interviewing (3)

Prerequisite: Comm 40 and junior standing, or consent of instructor. The application of modern communication theory to interview situations. This theory and practicum course is designed to aid the student in mastering specific skills appropriate to specialized settings.

346 Advanced Interviewing Techniques (3)

Prerequisite: Comm 345. Examination and application of problem solving and information-gathering methods, with emphasis on specialized situations such as journalistic; health, crisis intervention, and counseling; superior-subordinate relationships and employment. In-class study approach and field interview assignments.

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350 Mass Communication History (3)

Prerequisite: Comm 50 or 110. Examination of the social, economic, and political factors contributing to the development of American mass media. Emphasis on significant personalities who helped shape its course; analysis of select critical works.

352 Mass Media Criticism (3)

Prerequisite: Comm 50 or 110. The study of media content and its effect on society. Reading and viewing of selected works. Independent reading and critical analysis required.

354 Comparative Telecommunication Systems (3)

Prerequisite: Comm 65 or consent of instructor. Historical aspects of various systems of telecommunication throughout the world. Examination of American, Canadian, European Economic Community (EC), and other telecommunication systems.

355 Media Law and Regulation (3)

Prerequisite: Comm 50 or 110. Discussion of laws affecting the mass media. Exploration of problems and issues in legal regulation of media content, ownership, access, and accountability. Discussion of industry self-regulation and the influence of citizens' organizations.

356 International Communication (3)

Prerequisite: Comm 50 or 110. Examination of the social, technical, economic, and political factors affecting international broadcasting and transnational media systems.

357 Media Ethics (3)

Prerequisite: nine hours of philosophy or nine hours communication or consent of instructor. (Same as Philosophy 357). 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 bulleting boards, on-line services, and the Internet.

358 Communication in Public Relations (3)

Prerequisite: Comm 150. An overview of communication within the area of public relations. Emphasis on ethics, law, professional standards, and written communication. Case study approach.

362 Storytelling (1-3)

Prerequisite: Junior standing or consent of instructor. This course gives an overview of the history of storytelling, types of tales, and appropriate uses for storytelling. The primary emphasis of the course is in developing storytelling skills through preparation, performances, and evaluation.

363 Introduction to Cataloging (3)

Prerequisite: Senior or postgraduate status. Cataloging books using Anglo-American Cataloging Rules II and the Dewey classification.

364 Selection and Acquisition of Library Materials (3)

Prerequisite: Senior or postgraduate status. Introduction to types of materials in libraries; their source of supply, evaluation, selection, and acquisition routines and procedures.

365 Introduction to Reference (3)

Prerequisite: Senior or postgraduate status. Introduction to reference materials and procedures, including automated reference sources.

366 Administration of School Libraries/Media Centers (3)

Prerequisite: Senior or postgraduate status. Operational objectives and functions of school learning resource centers, including physical facilities and personnel standards.

370 Documentary Film (3)

Prerequisite: Comm 70. Consideration of the history, theory, and criticism of nonfiction film. Screening of representative documentary films.

390 Directed Readings (3)

Prerequisites: Consent of instructor; not open to students who have any Y or delayed grades outstanding. Supervised independent study involving readings, conferences, papers, etc., in one of the department's disciplines: communication theory and rhetoric, or mass communication.

391 Supervised Research (1-5)

Prerequisites: Junior/senior standing and consent of instructor; not open to students who have any Y or delayed grades outstanding. Supervised field or laboratory research, data collection, literature searches, qualitative or quantitative data analysis, report writing and other techniques used by communication researchers. Repeatable, but no more than five credit hours may be earned in supervised research courses.

392 Administration of Cocurricular Activities (3)

Prerequisites: Junior standing and consent of instructor. A survey of the skills required to administer the various cocurricular activities associated with teachers in the secondary schools, such as: operation of debate tournaments, public speaking competitions, and mass media centers.

393 Internship in Applied Communication (3-6)

Prerequisites: Senior standing, with a least 12 hours of course work in communication theory and rhetoric; an overall GPA of at least 3.0; consent of instructor; open to communication majors only; not open to students who have any Y or delayed grades outstanding. Advanced practical work in business communication, political campaign communication, advertising, public relations, or other forms of organizational or public communication. Work must be done off campus, under supervision of a working professional in the field, in consultation with a faculty member. Repeatable, but no more than six hours total credit may be earned in internship courses toward the 36-hour minimum required for the degree.

Communication

394 Internship in Journalism (3-6)

Prerequisites: Senior standing, with at least 12 hours of course work in journalism, mass communication, etc.; an overall GPA of at least 3.0; consent of instructor; open to communication majors only; not open to students who have any Y or delayed grades outstanding. Practical work with an off-campus newspaper, magazine, or other news organization, supervised by a journalism professional in consultation with a faculty member. Repeatable, but no more than six hours total credit may be earned in internship courses toward the 36-hour minimum required for the degree.

395 Senior Seminar in Communication (3)

Prerequisite: Senior standing and consent of instructor. This course will deal with basic issues, questions, theories and themes central to the discipline of communication. The course project will consist of a critique of selected communication literature and permit the student to integrate and synthesize the knowledge base accumulated in the systematic study of communication.

396 Internship in Radio (3-6)

Prerequisites: Senior standing, with at least 12 hours of course work in radio, broadcasting, etc.; an overall GPA of at least 3.0; consent of instructor; open to communication majors only; not open to students who have any Y or delayed grades outstanding. Practical work at an off-campus radio station, supervised by a professional in consultation with a faculty member. Repeatable, but no more than six hours total credit may be earned in internship courses toward the 36-hour minimum required for the degree.

397 Internship in Television/Film (3-6)

Prerequisites: Senior standing, with at least 12 hours of course work in television, film, video, etc.; an overall GPA of at least 3.0; consent of instructor; open to communication majors only; not open to students who have any Y or delayed grades outstanding. Practical work at an off-campus television, film, or video organization, supervised by a television, film, or video professional in consultation with a faculty member. Repeatable, but no more than six hours total credit may be earned in internship courses toward the 36-hour minimum required for the degree.

Criminology and Criminal Justice

Faculty

Richard Wright, Professor*, Chairperson
Ph.D., Cambridge University
Robert Bursik, Professor
Ph.D., University of Chicago
Scott H. Decker, Professor*;
Ph.D., Florida State University
Richard B. Rosenfeld, Professor*
Ph.D., University of Oregon
G. David Curry, Associate Professor
Ph.D., University of Chicago
Janet L. Lauritsen, Associate Professor*
Ph.D., University of Illinois-Urbana
Kimberly K. Leonard, Associate Professor*
Ph.D., The Wharton School, University of Pennsylvania
Allen E. Wagner, Associate Professor*
Ph.D., Washington University
Eric Baumer, Assistant Professor
Ph.D. State University of New York at Albany
Bruce A. Jacobs, Assistant Professor
Ph.D., University of Southern California
Jody Miller, Assistant Professor
Ph.D., University of Southern California
Norman A. White, Assistant Professor*
A.B.D., State University of New York at Albany
Timothy Maher, Lecturer
M.A. University of Missouri-St. Louis
Norman Malloy, Lecturer
M. A. University of Missouri-St. Louis
Margaret Phillips, Lecturer
Ph.D., St. Louis University

*members of Graduate Faculty

Criminology and criminal justice faculty represent several academic disciplines. By integrating practice with theory, faculty are able to present a comprehensive picture of crime and the justice system. An emphasis on understanding the theoretical foundations which underlie human behavior and the institutions of justice characterizes the departmental orientation. Faculty research and publications also reflect this concern with an understanding of both the underlying theoretical foundations and their application. 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. A federal appeals-court judge, local prosecutor, correctional supervisor, and probation supervisor are among this group. Merging theory with practice is a daily routine for supplemental faculty members. Full-time faculty members provide course work that forms the sound basis of a liberal arts education.

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 of the criminology and criminal justice department hold appointments as Fellows in the Center for Metropolitan Studies, and the Institute for Women's and Gender Studies. Workshops, projects, credit courses, and other social services are brought to the criminal justice community.

Internships

Majors are strongly encouraged to participate in CCJ 280, 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 formal 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.

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; Sociology 220, Quantitative Techniques in Sociology; or Sociology 230, Research Methods. Additionally, substitutions which have been approved by departmental advisers for these courses may not be taken on a satisfactory/unsatisfactory basis.

After fulfilling the general education and specific major degree requirements, students are to take the remaining hours required to complete the B.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), biology, chemistry, communication, criminology and criminal justice, economics, English, foreign languages/literatures, history, mathematics/computer science, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, business, education, engineering, and interdisciplinary. The criminology and criminal justice department may require students to pass a placement 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. All pre-requisites must be satisfied prior to enrolling in a course. Students may register for 300 level courses only after obtaining a signature from the advisor in Criminal Justice Department.

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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 300 level courses only after obtaining a signature from the advisor in Criminology and Criminal Justice. All pre-requisites must be satisfied prior to enrolling in a course.

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

Core Curriculum

The following courses in criminology and criminal justice are required:

10, Introduction to Criminology and Criminal Justice

110, Theories of Crime

120, Criminal Law

130, Criminal Justice Policy

210, Research Methods in Criminology and Criminal Justice

220, Statistical Analysis in Criminology and Criminal Justice

390, Seminar in Criminology and Criminal Justice

Two courses from the following four:

230, Crime Prevention

240, Policing

260, Corrections

270, Juvenile Justice

Two courses at the 300 level:

300, Communities and Crime

305, Comparative Criminology and Criminal Justice

310, Computers in Criminal Justice

315, Ethics in Criminology and Criminal Justice

320, Forms of Criminal Behavior

325, Gender, Crime, and Justice

330, History of Crime and Justice

335, Probation and Parole

340, Race, Crime, and Justice

345, Rights of the Offender

350, Victimology

380, Special Topics in Criminology and Criminal Justice

Elective Courses

99, The City

180, Alcohol, Drugs and Society

227, Urban Law: Poverty and the Justice System

280, Internship in Criminology and Criminal Justice

290, Special Readings

Requirements for the Minor

The minor has been designed to ground students in the basics of criminology and criminal justice.

All minor candidates must take:

10, Introduction to Criminology and Criminal Justice

The candidate must then select from two of the following three courses:

110, Theories of Crime

120, Criminal Law

130, Criminal Justice Policy

Candidates must then complete 6 hours of criminology and criminal justice course work at the 200 level or above.

Candidates must 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 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 2.75 on a 4-point scale. However, students may be admitted under restricted status with a GPA of 2.5.

Students admitted with a 2.5 to 2.75 GPA will be reviewed after completing 6 credit hours of graduate work. Admission is competitive.

Degree Requirements

The M.A. in Criminology and Criminal Justice requires the completion of 33 credit hours, at least 18 of which are in criminology and criminal justice. All students must satisfy a 15-hour core course requirement. Additionally, M.A. candidates must take at least two of four graduate "option" courses offered by the department. Students may choose between a thesis and nonthesis course of study.

Core Curriculum

400, Proseminar: Criminology and Criminal Justice

405, Methods

410, Statistics

415, Foundations of Criminological Theory

420, Contemporary Criminological Theory

Two of the following four courses

451, Juvenile Justice System

452, The Police

453, Adjudication

454, Corrections

Transfer Courses

Transfer courses are evaluated for acceptance on a case-by-case basis subject to the rules and regulations of the Graduate School.

Application to the Ph.D. Program

Eligibility Undergraduate applicants must have a baccalaureate degree or expect one by the end of the academic year in which they apply. Applicants must have a grade point average of 3.0 or greater (on a scale of A=4.0) for the last 60 hours of undergraduate work.

Graduate applicants who have or will have a Master's degree must have a grade point average of 3.0 or greater (on a scale of A=4.0) for their graduate coursework.

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Application To consider an applicant for admission, the Department of Criminology and Criminal Justice must have transcripts, three letters of recommendations, Graduate Record Examination scores, and a writing sample. Applications with Master's degrees should include a chapter of their thesis. International students whose native language is not English are required to submit scores from the TOEFL examination.

Amount of Course Work Sixty post-baccalaureate hours of graduate work are required for the Ph.D. More than half of these hours must be completed in residence. Twelve credit hours of dissertation research (CCJ 499) are required. Students may enroll for dissertation credits (CCJ 499) only when all other degree requirements have been completed.

Required courses for the Ph.D. are:

- 400, Proseminar (3)
- 405, Methods (3)
- 410, Statistics (3)
- 415, Foundations of Criminological Theory (3)
- 420, Contemporary Criminological Theory (3)
- 430, Law and Social Control (3)
- 440, Nature of Crime (3)
- 450, Criminal Justice Organization (3)
- 480, Multivariate Statistics (3)

In addition to the above 27 hours, students must choose two of the following three courses:

- 465, Qualitative Research Design (3)
- 470, Quantitative Research Design (3)
- 475, Evaluation Research Methods (3)

Students are also required to specialize in one of the following three areas:

- Option 1: Crime and Criminality
- Option 2: Criminal Justice
- Option 3: Law and Social Control

Courses in Option 1 include the following:

- 441, Juvenile Delinquency (3)
- 442, Communities and Crime (3)
- 443, Violent Crime (3)
- 444, Organizational Crime (3)
- 445, Property Crime (3)
- 446, Sex Crime (3)
- 447, Public Order Crime (3)
- 448, Victimization (3)

Courses in Option 2 include the following:

- 451, Juvenile Justice Systems (3)
- 452, The Police (3)
- 453, Adjudication (3)
- 454, Corrections (3)
- 455, Ethical and Legal Issues in Criminal Justice (3)

Courses in Option 3 include the following:

- 431, The Nature of Punishment (3)
- 432, Criminal Law (3)
- 433, Philosophy of Law (3)
- 434, Human Rights (3)
- 435, Law, Courts, and Public Policy (3)
- 436, Comparative Legal Systems (3)
- 437, Private Justice (3)

Additional courses, beyond the above requirements are taken as elective courses. These courses may be at the 300- or 400-level. Students are also encouraged to take courses outside of the Department of Criminology and Criminal Justice.

Qualifying Examination

Graduate students in the Ph.D. program cannot become recognized as "Ph.D. Candidates" until they have passed the qualifying examination. The goals of the comprehensive examination are to assess the student's familiarity with substantive literature, theory and methods of criminology and criminal justice and to evaluate the student's intellectual imagination and ability to apply knowledge to broad criminological questions.

The qualifying examination will consist of two parts—the first focusing on crime and criminality, and the second on either law and social control or criminal justice. The choice of the second part is made by the student. Each will integrate theory and methods into the substantive literature.

Part one of the exam will consist of a six-hour examination without access to notes or external references. Part two will be a 48-hour, non-collaborative, take-home examination. The student will pick which subject area is taken under which testing format.

Other information about the qualifying exam is available from the department.

The Dissertation

The dissertation is required of all Ph.D. candidates and demonstrates the student's scholarly expertise. The dissertation process formally begins when all other requirements of the Ph.D. program have been met. The dissertation committee assists in selecting and developing the research problem, and evaluates the student's work on that problem.

Career Outlook

The orientation of the criminology and criminal justice faculty and of the degree program prepares the graduate to work professionally for local, state, and federal agencies concerned with maintaining public safety by the prevention of crime and apprehension and rehabilitation of offenders. The B.S. in criminology and criminal justice is also advantageous for careers with various social agencies, especially those connected with the juvenile court system, probation and parole, and local police. Many students use the B.S. in criminology and criminal justice as preparation for law school.

The interdisciplinary curricula unify a body of knowledge from criminology, social science, law, public administration and corrections, giving a unique preparation for and providing 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.

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Course Descriptions

Prerequisites may be waived by consent of the department or instructor.

The following courses fulfill the Social Sciences [SS] breadth of study requirements: 10, 20, 75, 99, 110, 120, 130, 180, 210, 220, 226, 227, 230, 240, 260, 270, 290, 300, 305, 310, 315, 320, 325, 328, 330, 335, 340, 345, 350, 380, 390, 399.

10 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.

20 Foundations of Law: An Introduction to Legal Studies (3)

(Same as ID 20, and PoliSci 20.) 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.

75 Crime and Punishment (3)

(Same as Sociology 75 and Interdisciplinary 75.) 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.

99 The City (3)

(Same as PolSci 99, Sociology 99, and Interdisciplinary 99.) 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.

110 Theories of Crime (3)

Prerequisite: CCJ 10. Introduction to major theoretical approaches to the study of crime and justice.

120 Criminal Law (3)

Prerequisite: CCJ 10. Analysis of substantive criminal law, evidence and judicial procedure.

130 Criminal Justice Policy (3)

Prerequisite: CCJ 10. Introduction to criminal justice policy making, planning, and implementation.

180 Alcohol, Drugs, and Society (3)

(Same as Sociology 180.) Prerequisite: Sociology 10 or Psych 3. 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.

210 Research Methods in Criminology and Criminal Justice (3)

Prerequisite: CCJ 10. Examination of basic methods of research design, measurement and data collection in criminology and criminal justice.

220 Statistical Analysis in Criminology and Criminal Justice (3)

Prerequisites: CCJ 10, 210 and 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.

226 Law and the Individual (3)

(Same as PolSci 226.) Prerequisite: PolSci 11, or 20, or consent of instructor. An examination of the formal and informal aspects and processes of the American judicial system and its effect on the individual. The course will cover criminal and civil law, public and private law, state and federal courts, and the processes by which disputes are transformed into legal actions. Topics include judicial selection and recruitment, plea bargaining, the impact and implementation of judicial decisions, the examination of a number of substantive areas of law like contracts and torts, and the role of courts in policy-making and dispute resolution. Course fulfills the state requirement.

227 Urban Law: Poverty and the Justice System (3)

Prerequisite: CCJ 170 or PolSci 11, or consent of instructor. Examination of administrative regulations and the civil law process as it affects the life of the urban, rural, and the poor.

230 Crime Prevention (3)

Prerequisite: CCJ 10. Examination of situational, social, and legislative approaches to the prevention of crime and delinquency. Emphasis on theories, implementation and consequences of these approaches.

240 Policing (3)

Prerequisite: CCJ 10. Overview of current and historical perspectives on the function of American policing. Emphasis on the management of police organizations and relationships with the community.

260 Corrections (3)

Prerequisite: CCJ 10. 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.

270 The Juvenile Justice System (3)

Prerequisite: CCJ 10. 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.

280 Internship in Criminology and Criminal Justice (3)

Prerequisite: Junior standing. Internship under faculty supervision in criminal justice setting.

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290 Directed Readings (1-6)

Prerequisite: CCJ 10 and consent of instructor. Individualized study, under regular faculty supervision, designed to meet particular educational needs of selected students.

300 Communities and Crime (3)

(Same as Sociology 300.) Prerequisites: CCJ 110, 120, 130, 210, 220, 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.

305 Comparative Criminology and Criminal Justice (3)

Prerequisites: CCJ 110, 120, 130, 210, 220, 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.

310 Computers in Criminal Justice (3)

Prerequisites: CCJ 110, 120, 130, 210, 220, or consent of instructor. Use of computers, data base systems, and software applications in research and professional practice.

315 Ethics in Criminology and Criminal Justice (3)

(Same as Philosophy 315.) Prerequisites: CCJ 110, 120, 130, 210, 220, or Philosophy 153, 154, 156, 230, 235, 238, or consent of instructor. Examination of major ethical issues encountered in criminology and criminal justice research and practice.

320 Forms of Criminal Behavior (3)

(Same as Sociology 320.) Prerequisites: CCJ 110, 120, 130, 210, 220, 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.

325 Gender, Crime, and Justice (3)

(Same as Sociology 325.) Prerequisites: CCJ 110, 120, 130, 210, 220, 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.

328 Institutions and the Control of Crime and Delinquency (3)

(Same as Sociology 328.) Prerequisites: CCJ 110, 120, 130, 210, 220, 260, or Sociology 214 or Sociology 326. Institutional responses to crime and delinquency. Theories and programs of rehabilitation and punishment. Organizational conditions affecting behavior of correctional personnel.

330 History of Crime and Justice (3)

(Same as History 320) Prerequisites: Junior Standing or consent of instructor; CCJ 110, 120, 130, 210, 220. 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.

335 Probation and Parole (3)

Prerequisites: CCJ 110, 120, 130, 210, 220, 260, or consent of instructor. Analysis of alternatives to incarceration and postincarceration supervision. Emphasis on diversion, restitution, and community reintegration.

340 Race, Crime, and Justice (3)

(Same as Sociology 340.) Prerequisites: CCJ 110, 120, 130, 210, 220, 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.

345 Rights of the Offender (3)

Prerequisites: CCJ 110, 120, 130, 210, 220, 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.

350 Victimology (3)

Prerequisites: CCJ 110, 120, 130, 210, 220, 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.

380 Special Topics in Criminology and Criminal Justice (3)

Prerequisites: CCJ 110, 120, 130, 210, 220. In-depth study of a selected topic in criminology and criminal justice.

390 Seminar in Criminology and Criminal Justice (3)

Prerequisites: CCJ 110, 120, 130, 210, 220, and senior standing. In this capstone course, students demonstrate the ability to work independently, integrating theory and research in criminology and criminal justice in a major paper supervised by the instructor.

399 Senior Thesis (1-6)

Prerequisites: CCJ 110, 120, 130, 200, 210, 220, and consent of instructor. A major research paper prepared under the guidance of a CCJ faculty member. Students may receive 1-6 elective credits over one or two semesters. Thesis credits may not substitute department 300-level course requirements. Enrollment restricted to senior majors.

400 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.

405 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.

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410 Statistical Applications in Criminology and Criminal Justice (3)

Prerequisites: CCJ 405. 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.

415 Foundations of Criminological Theory (3)

(Same as Sociology 415.) Prerequisite: Graduate standing. Examination of the history of criminological thought incorporating the major works of such theorists as Bentham, Beccaria, Marx, Durkheim, Lombroso, Sutherland, and Merton.

420 Contemporary Criminological Theory (3)

Prerequisite: CCJ 415. 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.

430 Law and Social Control (3)

(Same as Sociology 461.) 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.

431 The Nature of Punishment (3)

(Same as Philosophy 431) 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.

432 Criminal Law (3)

Prerequisite: Graduate standing. A study of substantive criminal law, the laws that control the behavior of all citizens, and procedural criminal law, the laws that guide the behavior of criminal justice agents.

433 Philosophy of Law (3)

(Same as Philosophy 433.) Prerequisite: Graduate standing. Examination of origins of law and the basis for legal obligation. Specific consideration of the justification of punishment, morality and law, and legal reasoning.

434 Human Rights (3)

Prerequisite: Graduate standing. Examination of human rights from historical and cross cultural perspectives. Topics include capital and corporal punishment, political prisoners, rights of the accused, and rights of those imprisoned.

435 Law, Courts, and Public Policy (3)

(Same as PolSci 422.) Prerequisite: Graduate standing. Analysis of public policies, as represented by laws, court decisions, and agency adjudication, judicial review discrimination, affirmative action, urban planning, social welfare, intergovernmental relations, environmental law, freedom of information, and privacy concerns will be surveyed. The relationship between courts and the Constitution, courts and legislatures, and courts and the administrative process will be stressed.

436 Comparative Legal Systems (3)

Prerequisite: Graduate standing. Examination of diverse types of law and legal systems. The course contrasts Western and non-Western legal systems.

437 Private Justice (3)

Prerequisite: Graduate standing. Examination of the private sector's impact on formal criminal and juvenile justice systems, as well as the development of private security and informal justice systems. Financial incentives, moral and legal issues are explored.

440 Nature of Crime (3)

Prerequisite: Graduate standing. Examination of patterns and correlates of crime at the individual, situational, and aggregate levels. Topics include definitions of crime, offending typologies, and criminal careers.

441 Juvenile Delinquency (3)

Prerequisite: Graduate standing. Examination of youth crime and juvenile offenders. Topics include definitions of juvenile crime, and theories of juvenile crime causation in the United States.

442 Communities and Crime (3)

Prerequisite: Graduate standing. 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.

443 Violent Crime (3)

Prerequisite: Graduate standing. 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.

444 Organizational Crime (3)

Prerequisite: Graduate standing. Examination of crime by and within groups. Focuses on the types of criminal behavior known as organized crime, white collar crime, and political corruption.

445 Property Crime (3)

Prerequisite: Graduate standing. Examination of the sources and patterns of property offending across time and space. Topics include conceptions and typologies of property crimes and offenders, victim-offender relationships, and efforts to predict and control property offending.

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446 Sex Crime (3)

Prerequisite: Graduate standing. 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.

447 Public Order Crime (3)

Prerequisite: Graduate standing. Examination of the nature of, prevalence of, and efforts to control public order crimes such as gambling, illicit drug use, prostitution, vagrancy, and disorderly conduct. The function of public order crimes as a means to control disruptive or threatening persons and groups is emphasized.

448 Victimization (3)

Prerequisite: Graduate standing. 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.

450 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.

451 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.

452 The Police (3)

Prerequisite: Graduate standing. Historical, social and political analysis of policing in America. Examination of federal, state, county, and municipal agencies.

453 Adjudication (3)

Prerequisite: Graduate standing. Examination of the objectives, institutions and processes involved in the adjudication of offenders. Topics address the structure and function of the judicial system and principal court actors.

454 Corrections (3)

Prerequisite: Graduate standing. 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.

455 Ethical and Legal Issues in Criminal Justice (3)

(Same as Philosophy 455.) Prerequisite: Graduate standing. Examination of the moral and legal aspects of the policies and practices of criminal justice agencies and agents. Issues may include treatment of offenders, the role of technology, and research and professional ethics.

465 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.

470 Quantitative Research Design (3)

Prerequisite: CCJ 405 and CCJ410. Examination of experimental, longitudinal, and cross-sectional designs. Sources of data, sampling procedures, operational definitions, and issues of reliability are also discussed.

475 Evaluation Research Methods (3)

(Same as Psych 475, Sociology 475, and Public Policy Administration 475.) 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.

480 Multivariate Statistics (3)

Prerequisite: CCJ 410. Introduction to the general linear model with applications to multivariate problems in criminology and criminal justice. Topics include advanced ordinary least squares, causal modeling, time series analysis, simultaneous equations, and analysis of limited dependent variables.

485 Directed Readings (1-6)

Prerequisite: Directed Readings/Research in Criminology and Criminal Justice. Directed reading and research, under faculty supervision, designed to meet particular educational needs of selected students.

495 Internship in Criminology and Criminal Justice (3)

Prerequisite: Graduate standing. Supervised placements with criminal justice agencies. Designed primarily for students with limited field experience.

498 M.A. Thesis Research (1-6)

Prerequisites: Graduate standing.

499 Independent Study and Research (3)

Prerequisite: Graduate standing. Directed study or research in criminology and criminal justice.

Economics

Faculty

William E. Mitchell, Professor* Chairperson
Ph.D., Duke University

Elizabeth M. Clayton, Professor Emeritus
Ph.D., University of Washington

Susan K. Feigenbaum, Professor*
Ph.D., University of Wisconsin

Thomas R. Ireland, Professor*
Ph.D., University of Virginia

Sharon G. Levin, Professor*; Director of Graduate Studies
Ph.D., University of Michigan

Joseph P. McKenna, Professor Emeritus*
Ph.D., Harvard University

Donald Phares, Professor*
Ph.D., Syracuse University

Robert L. Sorensen, Professor*; Director of Undergraduate Studies
Ph.D., Virginia Polytechnic Institute

Timothy McBride, Associate Professor,* Economics, Public Policy Administration, Gerontology
Ph.D., University of Wisconsin-Madison

David C. Rose, Associate Professor*;
Ph.D., University of Virginia

Herbert D. Werner, Associate Professor Emeritus*
Ph.D., University of California-Berkeley

Anne Winkler, Associate Professor*, Economics and Public Policy Administration
Ph.D., University of Illinois at Urbana-Champaign

J. Ray Bowen II, Assistant Professor*
Ph.D., University of Michigan

Clinton A. Greene, Assistant Professor*
Ph.D., University of California-Davis

Donald J. Kridel, Assistant Professor*
Ph.D., University of Arizona

Sarapage McCorkle, Assistant Professor*; Director, Center for Entrepreneurship & Economic Education
Ed.D., University of Missouri-St. Louis

Michael T. Allison, Senior Lecturer
A.B.D., University of Virginia

Kathleen Phares, Senior Lecturer
M.A., University of Missouri-St. Louis

*members of Graduate Faculty

The economics department is actively engaged in teaching, research, publishing, and community service. Members have received numerous grants for basic and applied research projects. In addition to published research, members regularly present papers and serve as moderators and discussants at professional meetings. They have been honored with teaching and research fellowships and as visiting scholars at leading universities throughout the United States. Faculty members actively participate in community service; they address local citizen and business groups on topics of current interest, and frequently act as consultants for public service groups and local governmental units.

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 housing, productivity, employment, taxation, zoning, technology diffusion, the former Soviet Union, international trade flows, agriculture, energy, monetary economics, conglomerates, and public choice.

The economics department also offers courses at the undergraduate level in geography.

A graduate program offers work leading to the M.A. degree in economics in preparation for careers in teaching, research, government, and industry. The program includes course work in macroeconomic theory; urban, international, industrial, and quantitative economics; and research methodology. The program can accommodate prospective full-time students, as well as those who wish to study part-time solely in the evening. Classes are small, and student-faculty interaction is encouraged.

The economics department cooperates with the School of Business Administration and the Department of Political Science in offering a master's degree program in public policy administration.

Departmental Honors A student may earn departmental honors with a GPA of 3.6 in economics and the recommendation of the department.

Minor in Economics A minor in economics is also available. See the following section for requirements.

Undergraduate Studies

General Education Requirements

All undergraduate economics majors must meet the University and College of Arts and Sciences general education requirements. Candidates for the B.S. degree, however, do not need to fulfill the College's foreign language requirement. Candidates for the B.A. degree may take any foreign language to meet this 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.

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Satisfactory/Unsatisfactory (S/U) Option

Courses outside the major field and Economics 51, Principles of Microeconomics, and Economics 52, Principles of Macroeconomics, may be taken on a satisfactory/unsatisfactory (S/U) 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 100 level. All required courses for the major must be completed with a grade of C- or better. The following courses are required:

51, Principles of Microeconomics
 52, Principles of Macroeconomics
 220, Money, Banking, and Monetary Theory
 251, Intermediate Economic Theory: Microeconomics
 252, Intermediate Economic Theory: Macroeconomics
 265, Economic Statistics
 380, History of Economic Thought

Since many theories in economics make use of calculus, it is also recommended that students take: Math 80, Analytic Geometry and Calculus I, or Math 100, Basic Calculus

After fulfilling the general education and specific major degree requirements, students are to take the remaining hours required to complete the B.A. 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, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, business, education, engineering, and interdisciplinary.

Requirements outside the economics department should be completed by the end of the sophomore year.

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 above the 100 level. All required courses for the major must be completed with a grade of C- or better. The following courses are required:

51, Principles of Microeconomics
 52, Principles of Macroeconomics
 220, Money, Banking, and Monetary Theory
 251, Intermediate Economic Theory: Microeconomics
 252, Intermediate Economic Theory: Macroeconomics
 265, Economic Statistics
 365, Introduction to Econometrics
 Math 80, Analytic Geometry and Calculus I, or
 Math 100, Basic Calculus
 Comp. Sci. 122, Computers and Programming, or
 BA 103, Computers and Information Systems

Also required are two of the following:

350, Mathematical Economics
 352, Analysis of Business Cycles
 366, Applied Econometrics
 367, Econometric and Time Series Forecasting or any mathematics course numbered 175 or above (with consent of adviser)

Requirements outside the economics department should be completed by the end of the sophomore year.

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.

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Graduate School Preparation:

It is recommended that students considering doctoral-level graduate work in economics also take:

Math 175, Analytical Geometry and Calculus II
Math 180, Analytical Geometry and Calculus III,
Math 245, Linear Algebra
Math 250, Introduction to Modern Mathematics
Math 320, Mathematical Statistics

General Business Preparation:

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

BA 140, Fundamentals of Financial Accounting
BA 145, Managerial Accounting
BA 156, Legal Environment of Business
BA 204, Financial Management
BA 206, 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 above the 100 level. Econ 265, Economic Statistics, cannot be counted towards the economics minor if the student has also taken Math 31, Math 132, BA 131, or the equivalent.

The following courses are required:

51, Principles of Microeconomics
52, Principles of Macroeconomics
251, Intermediate Economic Theory: Microeconomics

It is also recommended that students take: Econ 252, Intermediate Economic Theory: Macroeconomics

Also required is a GPA of 2.0 or better for courses presented for the minor. The satisfactory/unsatisfactory option may be applied to Econ 51 and 52 only.

Graduate Studies

Master of Arts in Economics

The Department of Economics offers a Master of Arts in Economics with two options: general economics and business economics.

Admission Requirements

An undergraduate major in economics is not required for acceptance into the program. Application for admission may be submitted at any time, although class work formally begins in late August, mid-January, and mid-June. Candidates must meet the general admission requirements of the Graduate School, submit GRE scores (Advanced Economics optional), and submit two letters of recommendation from persons qualified to judge the candidates' potential for success in the program.

The admissions decision is based on the applicant's academic transcript, GRE scores, letters of recommendation, and a personal narrative on the application form.

Departmental Honors A student may earn departmental honors with a GPA of 3.75 in all required courses for the M.A. degree and the recommendation of the department.

Degree Requirements

Candidates for the M.A. in Economics must complete a core curriculum that provides training in the fundamental areas of economic theory, quantitative methods, and communication skills. Students then select either the general economics or business economics option.

Required Core Courses

The following courses or their equivalents are required for both the general economics and business economics option. Students with previous education in economics or business may waive some of these courses.

Econ 350, Mathematical Economics
BA 410, Managerial Economic Analysis
BA 411, Analysis of National Economic Environment
MS/IS 481, Statistical Analysis for Management Decisions
Econ 403, Seminar in Economic Research
Econ 451, Microeconomic Analysis
Econ 452, Macroeconomic Analysis
Econ 465, Econometric Theory and Methods

General Economics

The general economics option is designed for students interested in a broad-based background in the traditional fields of economics. It is intended for those who wish to teach basic economics or pursue further graduate study in economics. A recommended study program is available for students who plan to pursue a Ph.D. at another university after completing the M.A. in economics at UM-St. Louis.

The general economics option requires 42 credit hours. Students with previous education in economics or business may waive up to 12 hours of the 42 hours required.

Regardless of the number of required courses waived, at least 30 hours of graduate work must be completed within a six-year period to earn the degree. And a minimum of 21 hours must be completed while enrolled in the M.A. in Economics program at UM-St. Louis.

Required Courses

Candidates must complete the required core courses.

Electives

Candidates must complete at least 18 hours of electives. A maximum of six hours of economics electives may be taken at the 300 level. With the approval of the graduate coordinator, students may take up to nine hours of graduate courses outside the Department of Economics.

Business Economics

The business economics option prepares students for careers in business, government, and other organizations. This option combines the applied economic analysis and quantitative skills necessary for decision making in business and government with an appreciation for the function areas of these institutions.

Economics

The business economics option requires 60 credit hours. Students with previous education in economics or business may waive up to 24 hours of the 60 hours required. Regardless of the number of required courses waived, at least 36 hours of graduate work must be completed within a six-year period to earn the degree. A minimum of 24 hours must be completed while enrolled in the M.A. in Economics program at UM-St. Louis. More than 50 percent of the credit hours completed in the business economics option must be taken in the Department of Economics.

Required Courses

In addition to the required core courses, students must complete the following courses:

BA 412, Public Policies Toward Business
BA 440, Financial Accounting: Theory and Practice
BA 450, Financial Management
BA 460, Organizational Behavior and Administrative Processes
BA 470, Contemporary Marketing Concepts
MS/IS 480, Management Information Systems
Econ 366, Applied Econometrics
Econ 453, Economics of Contracts and Organization
Econ 467, Business and Economic Forecasting

Electives

Candidates must complete at least nine hours of electives in 400-level economics courses. With the approval of the graduate coordinator, students may take additional graduate courses outside the Department of Economics.

Graduate Certificate in Management Economics

A Graduate Certificate in Managerial Economics is a program of study designed for individuals who wish to supplement previous graduate studies with advanced training in economic analysis. The entrance requirement is a master's degree in such areas as business administration, finance, or public policy administration. Individuals admitted to this certificate program will be nonmatriculating graduate students.

Requirements

The Certificate requires a minimum of 18 hours of course work in economics. Students must complete:

451, Microeconomic Analysis
452, Macroeconomic Analysis
465, Econometric Theory and Methods

and two of the following:

366, Applied Econometrics
453, Economics of Contracts and Organization
467, Business and Economic Forecasting

Career Outlook

Economics is a language that provides the individual with a concise and logical way to study a wide range of problems and issues. It provides the flexibility for adapting to our ever-changing society, and it is also useful in everyday life. Thus, the economics major is excellent preparation for launching many careers. Economics graduates with a B.A. or B.S. degree pursue careers in banking, industry, and government. They use their training in economics as a foundation for a variety of jobs in management, personnel, sales, and marketing. Others continue their study of economics in graduate schools, earning M.A. and Ph.D. degrees. An undergraduate major in economics also provides a strong background for work on an M.B.A. or law degree. Economics is also important for careers in politics, journalism, and public and private service in foreign countries. Career planning materials are available in the Economics Resource Center, 455 SSB. For additional information, call the director of graduate studies at 516-5562.

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Course Descriptions

Courses in this section are grouped as follows: Economics; Geography; and Home Economics.

Prerequisites may be waived by consent of the department.

The following courses fulfill the Social Sciences [SS] breadth of study requirements: 40, 51, 52, 110, 210, 216, 217, 219, 220, 230, 231, 238, 240, 251, 252, 253, 256, 260, 261, 262, 265, 266, 270, 272, 302, 304, 305, 306, 317, 320, 331, 350, 352, 355, 357, 360, 364, 365, 366, 367, 380, 395.
GEOGRAPHY: 101, 102, 210, 211, 220, 295.

Economics

40 Introduction to the American Economy (3)

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 40 does not substitute for Econ 51 or 52. Students who have already completed Econ 51 or 52 may not take Econ 40 for credit.

51 Principles of Microeconomics (3)

Prerequisite: Math 30. 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.

52 Principles of Macroeconomics (3)

Prerequisite: Econ 51. 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.

110 The Economics of Professional Sports (3)

Prerequisite: Econ 40 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.

210 Selected Topics in Economics (3)

Prerequisites: Econ 51 and 52. 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.

216 Public Finance: Expenditures (3)

Prerequisite: Econ 51. Analysis of public goods and externalities, models of collective choice, elements of benefit-cost analysis, the theory of bureaucracy, governments as agents in markets.

217 Political Finance: Revenues (3)

Prerequisite: Econ 51. Analysis of the economic role of governments, subsidies and taxes in the federal system, criteria for tax evaluation, the nature of tax legislation private decision making under differing tax institutions, and government borrowing.

219 Law and Economics (3)

Prerequisite: Econ 51. 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.

220 Money, Banking, and Monetary Theory (3)

Prerequisites: Econ 51 and 52. 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.

230 International Economic Analysis (3)

Prerequisite: Econ 40, or 51, or 52. Introduction to the theories of international trade and factor movements including determinants of trade, the effects of trade on sectors and on overall economic performance, trade restrictions, and balance of payments and exchange rates. Discussion of current institutions and economic developments in the global economy.

231 International Finance (3)

Prerequisite: Econ 40, or 51, or 52. Introduction to international monetary systems; foreign exchange markets; financing of international transactions; the international position of the dollar.

238 Comparative Economic Systems (3)

Prerequisite: Econ 40, or 51, or 52. Introduction to the comparative study of economic organization, growth, and welfare in different types of national economies such as the United States, the United Kingdom, France, Germany, Sweden, Japan, the republics of the former Soviet bloc, and China.

240 Economic Development (3)

Prerequisites: Econ 51 and 52. 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.

251 Intermediate Economic Theory: Microeconomics (3)

Prerequisites: Econ 51 and 52. Analysis of prices in terms of equilibrium of the business firm and consumer demand in markets of varying degrees of competition.

252 Intermediate Economic Theory: Macroeconomics (3)

Prerequisites: Econ 51, 52; 220 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.

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253 Managerial Economics (3)

Prerequisite: Econ 51; Math 80 or 100 recommended. Application of microeconomic theory to the decision-making process in the business firm. Discussion of cost behavior, price and output determination under various competitive conditions, as well as factors affecting wages, interest, and profits.

256 The Consumer and the Economy (3)

Prerequisite: Econ 40 or 51. Examination of issues in consumer choice and personal financial management in today's economy. Analysis of methods of increasing consumer efficiency and the role of government in consumer protection.

260 Labor Economics (3)

Prerequisite: Econ 40, or 51, or 52. Forms of labor organization, state and federal labor legislation, and policies of labor unions. Emphasis on an application of economic theory to the relations of labor and business.

261 The Economics of Poverty and Income Maintenance (3)

Prerequisite: Econ 51 or permission of instructor. Considers the problems of defining and measuring poverty, as well as competing views of its causes. Examines the incentive effects of government transfer programs for the family's economic decisions, with emphasis on labor market behavior. Topics will include unemployment insurance, AFDC, food stamps, and negative income tax schemes.

262 Economics of Women, Men, and Work (3)

Prerequisite: Econ 40 or 51. 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.

265 Economic Statistics (3)

Prerequisites: Math 30, Econ 51, and Econ 52. 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.

266 Industrial Organization (3)

Prerequisite: Econ 51. 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.

270 Urban and Regional Economics (3)

Prerequisites: Econ 51 and 52. 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.

272 The Political Economy of Health Care (3)

Prerequisite: Econ 40 or Econ 51. 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.

301 Quantitative Methods and Modeling in Economics, Business and the Social Sciences (3)

Prerequisites: Math 30; Econ 51 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 350 or Math 80 or Math 100 may not take this course for credit.

302 Planning Processes in the Urban Economy (3)

Prerequisites: Econ 51 and junior standing. Economic techniques and criteria used in planning and evaluating programs and projects for the urban economy, including costing, cost-benefit and cost-effectiveness, and information control systems. Special attention will be given to St. Louis area studies for schools, transportation, public facilities, economic development, and social services delivery.

304 Survey Research Practicum (3)

(Same as PolSci 304 and Sociology 304.) Prerequisites: Junior standing 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.

305 Macroeconomics for the School Curriculum (1-3)

Prerequisite: Junior standing. Analysis of forces affecting the national economy, with emphasis on income determination, employment, money and banking, and international trade and finance. Special reference to topics included in elementary and secondary school social science curricula. Econ 305 may not be used by economics majors to meet degree requirements.

Economics

306 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 306 may not be used by economics majors to meet degree requirements.

310 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.

317 Public Finance: State and Local (3)

Prerequisites: Econ 51 and 52 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.

320 Financial Markets and Institutions (3)

Prerequisite: Econ 220. 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.

331 International Economic Analysis: Finance (3)

Prerequisite: Econ 231 or 252. Provides advanced study of the foreign sector in the theory and methods of international macroeconomics; income determination and trade balance; devaluation; international linkages; global monetary theory.

350 Mathematical Economics (3)

Prerequisites: Math 80 or 100, Econ 251, or Business 408 or 410. 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.

352 Analysis of Business Cycles (3)

Prerequisites: Econ 220; 252; 265 or equivalent. 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.

355 Business and Government (3)

Prerequisite: Econ 51. Relations between business firms and government at all levels. Questions of regulation, public ownership, guidelines, and competition considered.

357 Government Regulation and Antitrust Policy (3)

Prerequisite: Econ 51. Evaluation of the use of antitrust policy and government regulatory agencies to improve the performance of industrial markets. Course will include discussion of antitrust cases and analysis of the economic impact of deregulatory initiatives in the airline, trucking, railroad, and telecommunications industries.

360 Natural Resource Economics (3)

Prerequisite: Econ 51, or consent of instructor. 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.

364 Manpower Policies (3)

Prerequisite: Econ 251, or Econ 260, or BA 410. Analysis of the allocation of human resources with emphasis on the economic theory of labor markets in both the short and the long run. Discussion of the operation of the labor market in specific occupations.

365 Introduction to Econometrics (3)

(Same as Public Policy Administration 365.) Prerequisites: Econ 52; Econ 251 or BA 410; Econ 265 or MS/IS 481 or Public Policy Administration 401; Math 80 or Math 101. 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.

366 Applied Econometrics (3)

Prerequisite: Econ 365 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.

367 Econometric and Time Series Forecasting (3)

Prerequisite: Econ 365 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.

380 History of Economic Thought (3)

Prerequisites: Econ 51 and 52. The evolution of economic thought from the ancients through post-Keynesian theory.

395 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.

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403 Seminar in Economic Research (3)

Prerequisites: Econ 220; Econ 251 or BA 410; Econ 252 or BA 411. 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.

420 Monetary Theory and Policy (3)

Prerequisites: Econ 220; Econ 251 or BA 410; Econ 252 or BA 411; Econ 350. 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.

421 Public Sector Microeconomics (3)

(Same as Public Policy Administration 421.)
Prerequisite: Econ 251 or BA 410. 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.

422 Financial Markets (3)

Prerequisites: Econ 220; Econ 251 or BA 410; Econ 252 or BA 411. 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.

430 International Trade (3)

Prerequisite: Econ 251 or BA 410. Survey of the modern theories of international trade and their applications including factor endowments and other determinants of trade, 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.

431 International Monetary Analysis (3)

Prerequisite: Econ 220; Econ 252 or BA 411. Application of macroeconomic theory to the international monetary system. Topics include the balance of payments, exchange rates, international linkages, world inflation, capital flows, and the gold standard.

451 Microeconomic Analysis (3)

Prerequisites: Econ 251 or BA 410; Econ 252 or BA 411; Econ 350. Survey of microeconomic comparative statics. Detailed examination of demand and supply, product, and factor markets. Partial equilibrium in competitive, imperfectly competitive, and monopolistic markets.

452 Macroeconomic Analysis (3)

Prerequisites: Econ 220; Econ 251 or BA 410; Econ 252 or BA 411; Econ 350. 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.

453 Economics of Contracts and Organization (3)

Prerequisites: Econ 251 or BA 410 (or 408). Considers issues in the coordination of human resources in the production of goods and services, either through individual contracting or through various forms of organizations. Organization is explained as a nexus of contractual relationships within a cooperative production unit, whether that unit is governmental, in private commerce, or has a non-profit orientation-or some mix of the three basic modes. Emphasizes the roles of transactions costs, bounded rationality, monitoring individual performance in team production, opportunism, basic principles of insurance, and other incentive compatibility issues.

460 Structure and Performance of United States Industry (3)

Prerequisites: Econ 251 or BA 410; Econ 350. 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.

463 Economics of Telecommunications (3)

Prerequisites: Econ 251, BA 408 or BA410 and Econ 350. 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.

465 Econometric Theory and Methods (3)

Prerequisites: Econ 251 or BA 410; Econ 252 or BA 411; Econ 350; Econ 365 or MS/IS 481; Math 245 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.

Economics

467 Business and Economic Forecasting (3)

Prerequisites: Econ 251 or BA 410; Econ 252 or BA 411; Econ 350; Econ 365 or MS/IS 481. 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.

470 The Political Economy of Metropolitan Areas (3)

Prerequisites: Regular graduate student status and consent of graduate student coordinator. This course deals with both the public and private sector issues that affect our nation's metropolitan areas. It focuses on policy implications for economic development, government finance (especially at the state and local level) and intergovernmental relations. It also covers the economics of specific topical areas such as local education, transportation, financing adequate urban services, governmental structure and financial organization, infrastructure needs.

471 The Political Economy of Health Care (3)

Prerequisite: Econ 251 or BA 408 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.

472 Health Economics (3)

Prerequisites: Econ 251 or BA 410; Econ 265 or equivalent; Econ 365 or equivalent recommended. 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.

480 Labor Economics: Theory and Public Policy (3)

Prerequisite: Econ 251 or BA 410. 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.

490 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.

495 Directed Readings (1-6)

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

Geography

101 Introduction to Geography (3)

Prerequisite: Math 02 or equivalent. 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.

102 World Regions (3)

Prerequisite: Geography 101 recommended. 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.

210 Urban Geography (3)

Prerequisite: Sophomore standing. An in-depth examination of urban growth, the location and basis of cities, and the internal spatial structure of cities provide the main topics of consideration. In addition, contemporary urban problems including zoning, urban renewal, blight, the journey to work and shop, pollution, etc., are discussed with a spatial emphasis.

211 Location Theory (3)

Prerequisites: Math 80 or 100 and Econ 51. A survey of industrial location theory, agriculture location theory, and central place theory; programming formulations of location models; spatial competition; location-allocation problems; and noneconomic approaches to locational analysis.

220 Social Geography (3)

Prerequisite: Sophomore standing. Topics presented in a spatial (geographic) framework include the diffusion of innovations, population (distribution, problems, and solutions), settlement patterns, migration, poverty, and urban-social problems (e.g., race and residential choice).

295 Special Topics in Geography (1-6)

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.

Home Economics

83 Clothing Selection (3)

Study of line, form, space, color, and texture in selection of clothing as related to the individual. There will be wardrobe planning of men's, women's, and children's wear, as well as appropriate projects, field trips, and guest speakers.

Economics

130 Nutrition in Health (3)

A study of dietary nutrients essential for health, proper selection of foods to provide them, and current issues affecting them.

177 Community Nutrition (3)

Current issues and resources in nutrition. National nutrition policy, economic aspects of the food supply, nutrition-related roles of public agencies, selected nutrition programs, and community resources are emphasized.

181 History of Fashion and Costume (3)

An illustrated lecture presentation to gain insight into fashion as a kaleidoscopic portrayal of society and idiomatic style changes from ancient Egypt to the present. The course will cover the history of fashion as a definitive subject and will describe how costume reflects social, cultural, and political events of each period.

186 Fashion Merchandising (3)

A survey course of fashion merchandising with emphasis on retail principles, operations, and practices in the many sectors of fashion marketing. Specific application through case studies, problems, and field projects may be included.

330 Child Nutrition (3)

Prerequisite: Home Economics 130 or instructor's permission. A study of nutrition related to the major periods of development: fetal, infant, childhood, and adolescent.

English**Faculty**

Jane Williamson, Associate Professor*, Chairperson
Ph.D., Bryn Mawr College

David Carkeet, Professor*
Ph.D., Indiana University

Joseph Carroll, Professor*
Ph.D., University of California-Berkeley

B. Bernard Cohen, Professor Emeritus
Ph.D., Indiana University

Sylvia J. Cook, Professor*
Ph.D., University of Michigan

Charles Dougherty, Professor Emeritus
Ph.D., University of Toronto

William C. Hamlin, Professor Emeritus
Ph.D., University of Missouri-Columbia

Charles Larson, Professor*
Ph.D., Indiana University

Howard Schwartz, Professor*
M.A., Washington University

James E. Tierney, Professor*
Ph.D., New York University

Peter Wolfe, Professor*
Ph.D., University of Wisconsin

Richard M. Cook, Associate Professor*
Ph.D., University of Michigan

Sally Ebest, Associate Professor*
Ph.D., Indiana University

Kathy Gentile, Associate Professor*
Ph.D., University of Oregon

Barbara Kachur, Associate Professor*
Ph.D., The Ohio State University

Deborah A. Larson, Associate Professor*
Ph.D., Columbia University

Bruce L. Liles, Associate Professor Emeritus
Ph.D., Stanford University

John T. Onuska, Jr., Associate Professor*;
Ph.D., Harvard University

Steven Schreiner, Associate Professor*
Ph.D., Wayne State University

Jane Zeni, Associate Professor*
Ed.D., University of Missouri-St. Louis

Francis Grady, Assistant Professor*
Ph.D., University of California-Berkeley

Nanora Sweet, Assistant Professor*
Ph.D., University of Michigan

Charles Wartts, Assistant Professor
M.F.A., University of Iowa

Dennis Bohnenkamp, Senior Lecturer
M.A., University of Missouri-Columbia

Barbara Burns, Lecturer
M.A., Vanderbilt University

Ellie Chapman, Senior Lecturer Emerita
M.A., Murray State University

Susan Grant, Senior Lecturer
M.A., Southern Illinois University-Edwardsville

Nancy Gleason, Senior Lecturer
M.A., University of Missouri-St. Louis

Judy Gurley, Senior Lecturer
M.A., University of Arkansas

Linda Kick, Senior Lecturer
M.A., University of Toronto
M.A., University of Missouri-Columbia

William Klein, Senior Lecturer
M.A., University of Tulsa

Judith Linville, Senior Lecturer
M.A., University of Arkansas

Jennifer MacKenzie, Senior Lecturer
M.A., Purdue University

Terence Martin, Senior Lecturer
Ph.D., Southern Illinois University-Carbondale

William Mayhan, Lecturer
Ph.D., Washington University

Scott McKelvie, Lecturer
M.A., University of Missouri-St. Louis

Susan Mueller, Lecturer
M.A., St. Louis University

M.P.P.A., University of Missouri-St. Louis

Lyman Peters, Lecturer
M.A., University of Missouri-St. Louis

David Rota, Senior Lecturer
Ph.D., Southern Illinois University-Carbondale

Mary Troy, Lecturer
M.F.A., University of Arkansas

Barbara Van Voorden, Lecturer
M.A., Washington University

Harry Weber, Lecturer
M.A., University of Minnesota

*members of Graduate Faculty

General Information

Degrees and Areas of Concentration The English department offers or participates in the offering of the B.A. in English, the B.A. in English with certification for secondary teaching, and the B.S. in secondary education with an emphasis area in English. The department also offers a minor in English. Additionally, students with any major in the University may earn a Certificate in Writing so that they may demonstrate evidence of training in creative, journalistic, or technical writing.

The department has a graduate program leading to the Master of Arts degree. Students may pursue a literature track where they acquire a broad coverage in British and American writers or, a writing track where half of the course work deals with composition and writing theory. The department also offers the Master of Fine Arts in creative writing, in which half of the courses are writing workshops and independent writing projects.

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**

Majors must meet the University general education requirements and the requirements of the School or College from which they expect to receive their degree. After fulfilling the general education and specific major degree requirements, students are to take the remaining 70 hours required to complete the B.A. in English 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, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, business,

English

education, engineering, and inter-disciplinary. English courses may be used to meet the University's humanities requirement, **except** the following:

- 10, Freshman Composition
- 11, Freshman Composition for International Students
- 112, Topics in Writing
- 122, Traditional Grammar
- 209, Practical Criticism: Writing About Literature
- 210, Advanced Expository Writing
- 211, Advanced Expository Writing for International Students
- 212, Business Writing
- 213, Technical Writing
- 214, News Writing
- 215, Feature Writing
- 216, Writing in the Sciences
- 218, Reporting
- 262, The Curriculum and Methods of Teaching English
- 300, Writing in the Professions
- 305, Writing for Teachers
- 313, Advanced Business and Technical Writing
- 319, Editing

The College's foreign language requirement may be met in any language.

Satisfactory/Unsatisfactory Option

English majors may take any English course on a satisfactory/unsatisfactory basis except the following:

- 10, Freshman Composition
- 11, Freshman Composition for International Students
- 209, Practical Criticism: Writing About Literature
- 210, Advanced Expository Writing
- 211, Advanced Expository Writing for International Students
- 212, Business Writing
- 213, Technical Writing
- 214, News Writing
- 215, Feature Writing
- 216, Writing in the Sciences
- 218, Reporting
- 262, The Curriculum and Methods of Teaching English
- 300, Writing in the Professions
- 305, Writing for Teachers
- 313, Advanced Business Writing
- 319, Editing

Degree Requirements

Bachelor of Arts in English

English majors must complete at least 36, but no more than 45, hours in English exclusive of English 10, Freshman Composition; English 11, Freshman Composition for International Students; and English 209, Practical Criticism: Writing About Literature.

1) Students majoring in English must take:

- 131, English Literature I
- 132, English Literature II
- 171, American Literature I
- 172, American Literature II

2) English 209, Practical Criticism: Writing About Literature. (For English majors, this course is a prerequisite or corequisite for 300-level courses in English.)

3) Students must also complete one course from five of the following nine areas:

Area 1 Medieval English

- 322, Old English Literature
- 324, Chaucer
- 325, Medieval English Literature

Area 2 Shakespeare

- 337, Shakespeare: Tragedies and Romances
- 338, Shakespeare: Comedies and Histories

Area 3 The Renaissance

- 332, Elizabethan Poetry and Prose
- 339, Tudor and Stuart Drama
- 342, Early Seventeenth-Century Poetry and Prose
- 345, Milton

Area 4 Restoration and Eighteenth-Century English

- 346, Restoration and Eighteenth-Century Drama
- 352, Age of Dryden and Pope
- 353, Age of Johnson
- 364, The Eighteenth-Century English Novel

Area 5 Nineteenth-Century English

- 365, The Nineteenth-Century English Novel
- 368, Early Romantic Poetry and Prose
- 369, Later Romantic Poetry and Prose
- 371, Prose and Poetry of the Victorian Period
- 372, Literature of the Late Nineteenth and Early Twentieth Centuries

Area 6 Nineteenth-Century American

- 373, Selected Major American Writers I
- 374, Selected Major American Writers II
- 375, American Fiction to World War I

Area 7 Twentieth-Century English/American

- 376, Modern American Fiction
- 383, Modern British Fiction
- 384, Modern Poetry
- 385, Modern Drama
- 386, Poetry Since World War II

Area 8 Literary Criticism

- 321, History of Literary Criticism
- 327, Contemporary Critical Theory
- 329, Forms and Modes of Poetry

Area 9 Special Topics

- 306, Adolescent Literature
- 323, Continental Fiction
- 380, Studies in Women and Literature
- 390, Seminar
- 391, Special Topics in Jewish Literature
- 395, Special Topics in Literature

Work in 100-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 English 131 or consent of the instructor as a prerequisite for all courses in Areas 1-4 and English 132 or consent of the instructor as a prerequisite for all courses in Areas 5 and 7, except American literature courses. English 171 or consent of the instructor is a prerequisite for all courses in Area 6, and both English 171 and English 172 or consent of the instructor are prerequisites for English 376. All survey courses (English 131, 132, 171, and 172) must be taken before the major has completed 90 hours toward a degree.

English

A maximum of six satisfactory/unsatisfactory hours may be taken in the department. Majors must compete at least 18 graded (i.e., not satisfactory/unsatisfactory) hours in English courses at the 200 level or above with a grade point of 2.0 or better in these courses.

Transfer students majoring in English must complete a minimum of 12 graded hours in English courses at the 200 level or above with a grade point average of 2.0 or better in these courses.

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

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:

English

- 10, Freshman Composition, may be counted.
 209, Practical Criticism: Writing About Literature, is required.
 305/SEC ED 305, Writing For Teachers, is required. Recommended courses include creative writing, journalism, and business writing.

- 3) English language requirements

a English

122, Traditional Grammar
 Students with sufficient background may gain exemption from the English 122 requirement by passing the English-Educational Studies Test of Basic Grammar. This test may be taken only twice. Certification candidates must pass English 122 or the English-Educational Studies Test of Basic Grammar before applying for student teaching.

b English

- 308, English Grammar
 c 307, Linguistics or
 309, History of the English Language

- 4) English 262, The Curriculum and Methods of Teaching English. Must be taken before student teaching. Prerequisite: SEC ED 213, Techniques of Secondary School Teaching, and a near major in English.

- 5) English 270, English Teaching Intern Seminar, must be taken concurrently with SEC ED 290, Secondary School Student Teaching.

- 6) Candidates for certification in Missouri must have a 2.5 cumulative GPA, computed from the beginning of freshman year and including all colleges attended. They also need a minimum GPA of 2.5 in their English courses. All grades in professional education and in required English courses must be C or better.

Courses in professional education listed as requirements by the Teacher Education Program in the School of Education are also required for secondary certification. Note that SEC ED 385, Problems of Teaching Reading in Secondary Schools, is required for prospective English teachers.

Bachelor of Science in Secondary Education with an Emphasis Area in English

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 School of Education rather than those of the College of Arts and Sciences.

Minor in English

A student may minor in English by taking at least 18 hours of English courses exclusive of Basic Writing, English 10, Freshman Composition, and English 11, Freshman Composition for International Students. English 209 is required, and 12 of the 18 hours must be in literature courses, 9 of which must be in courses at the 200 or 300 level. Every student taking a minor in English must consult with an advisor in the English department in order to ensure a coherent program of studies. The GPA in courses for the minor must be 2.0 or better. Nine of the 18 hours must be taken in residence at UM-St. Louis. No more than three hours taken on a satisfactory/unsatisfactory basis may be counted toward the 18-hour minimum.

Certificate Program in Writing A student may receive the Certificate in Writing by completing a total of 18 hours in writing courses chosen from the following:

- Comm 212, Broadcast Writing and Reporting
 Comm 217, Script Writing for Business and Industry
 CCJ 200, Writing in Criminology and Criminal Justice
 English 103, Poetry Writing
 English 104, Short Story Writing
 English 105, Play Writing
 English 108, or Comm 108 Advertising Copywriting
 English 209, Practical Criticism: Writing About Literature
 English 210, Advanced Expository Writing
 English 211, Advanced Expository Writing for International Students
 English 212, Business Writing
 English 213, Technical Writing
 English 214 or Comm 214, News Writing
 English 215, Feature Writing
 English 216, Writing in the Sciences
 English 218, Reporting
 English 228 or Comm 228, Writing for Public Relations
 English 300, Writing in the Professions
 English 302, Writing Literary Criticism
 English 303, Advanced Poetry Writing
 English 304, Advanced Fiction Writing
 English 305, Writing for Teachers
 English 313, Advanced Business and Technical Writing
 English 317, Topics in Teaching Writing
 English 319, Editing
 English 320, Independent Writing Project (This course is required. It is to be taken as the last course a student will take in the program, and it is to be used to generate an extensive final project.)

English

Note: English 313, Advanced Business and Technical Writing, may be substituted for English 320 as the required final course for students who wish to do their final projects in business or technical writing.

Courses taken to fulfill requirements for the Writing Certificate may not be taken on a satisfactory/unsatisfactory basis.

Graduate studies

Admission Requirements

To enter the graduate program in English, a candidate must satisfy the requirements both of the Graduate School and of the Department of English. A candidate should have a bachelor's degree, with at least 24 hours in English courses. Normally only students with a grade point average of at least 3.0 in undergraduate English courses and with an overall undergraduate average of 2.75 will be considered.

In addition, the English department requires letters of recommendation from two of the applicant's former English instructors. The graduate committee will use the letters, the undergraduate record, and the Graduate Record Examination scores as the basis for its decision. Applications to the Master of Arts program should be submitted according to the following schedule: May 1 for the Fall Semester; May 1 for the Summer Session; and December 1 for the Winter Semester. Late applications will be considered for the upcoming semester only if all spaces for that semester have not been filled.

Teaching Assistantships

A number of teaching assistantships are available for qualified applicants. Applications should be submitted to the graduate coordinator of the English department no later than March 15 preceding the academic year for which the appointment is desired.

Degree Requirements

Master of Arts in English

In addition to the Graduate School requirements, students must complete at least 36 hours, 27 hours of which must be in 400-level courses. Nine hours may be taken in 300-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 400, Introduction to Graduate Study in English, which focuses upon bibliography, research methods, and literary criticism. Students must receive graduate credit for English 400.

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 writing theory track must take 18 hours in literature courses and 18 hours in writing theory courses. The literature courses should provide broad coverage, rather than a narrow focus on a particular genre or historical period.

Thesis Option Students in literature or writing theory may elect the thesis option, which requires a total of six (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 two exceptions: a writing sample is required (15-20 poems or 20-40 pages of fiction), and there is one annual deadline for all applications, March 1. In addition to the Graduate School requirements, students must complete at least 39 hours, 30 of which must be in 400-level courses. Nine hours may be taken in 300-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) 21 hours in creative writing courses: 15 hours of workshops (at least one course outside the genre) and six hours of English 494; (b) 15 hours of courses in literature, language, or writing theory offered by the English department; and (c) three hours of elective—another workshop or literature/language/ writing theory course or a relevant offering in another discipline. Students may not take a 300-level writing course in their genre for graduate credit. At least two of the writing workshops and English 494 must be taken at UM-St. Louis.

Complete information may be found in *The Master of Fine Arts in Creative Writing*, available from the English Department.

Career Outlook

In addition to traditional employment as teachers at the primary, secondary, and community-college levels, recent UM-St. Louis graduates in English are working in journalism, editing, advertising, public relations, and other fields that place a premium upon creation and interpretation of the written word. Numerous recent English majors have successfully entered law school.

English

Course Descriptions

Courses in this section are grouped as follows: Composition; Language; Literature; and Special Offerings.

English 10, Composition, or its equivalent, is a general prerequisite for all English courses numbered 131 and above. This, and other specific prerequisites, may be waived by consent of the department.

English 210, Advanced Expository Writing, its equivalent or consent of the instructor is a general prerequisite for all literature courses numbered 300 and above for non-English majors.

The following courses fulfill the Humanities [H] breadth of study requirements: **COMPOSITION: 103, 104, 105, 302, 303, 304. LANGUAGE: 307, 308, 309. LITERATURE: 12, 13, 14, 15, 16, 17, 20, 70, 71, 120, 123, 124, 125, 126, 127, 128, 131, 132, 133, 134, 135, 171, 172, 225, 280, 306, 321, 322, 323, 324, 325, 327, 329, 332, 337, 338, 339, 342, 345, 346, 352, 353, 364, 365, 368, 369, 371, 372, 373, 374, 375, 376, 380, 383, 384, 385, 386, 391, 395. SPECIAL OFFERINGS: 250, 390. THEATRE: 23, 80, 198, 223, 261, 281, 282, 322.**

Writing

10 Freshman Composition (3)

This course teaches critical reading and thinking skills and emphasizes writing as a process. It is designed to prepare students for college writing by moving them through a sequence of increasingly complex writing assignments, beginning with the narrative and ending with the research paper. Class discussion and small-group workshops focus on problems of invention, organization, development, and revision in essay writing. The course fulfills the campus freshman writing requirement. It does not count toward the major in English.

11 Freshman Composition for International Students (3)

Prerequisite: Essay proficiency test or a TOFEL score of 500 or above. Theory and practice of writing expository American prose. Special attention is given to verb tenses, idioms, articles, and syntax. Does not count toward the major in English. This course substitutes for English 10 in all University requirements.

103 Poetry Writing (3)

Prerequisite: English 10 or equivalent. Theory and practice of poetry writing.

104 Short Story Writing (3)

Prerequisite: English 10 or equivalent. Theory and practice of writing the short story.

105 Play Writing (3)

Prerequisite: English 10 or equivalent. Theory and practice of writing plays.

108 Advertising Copywriting (3)

(Same as Comm 108.) To give students a hands-on approach for writing advertising material for print and broadcast against tight deadlines in a professional setting.

112 Topics in Writing (3)

Prerequisite: English 10 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.

209 Practical Criticism: Writing About Literature (3)

Prerequisites: English 10 or equivalent and junior standing or consent of the department. 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 the satisfactory/unsatisfactory option.

210 Advanced Expository Writing (3)

Prerequisites: Freshman Composition or equivalent (3-6 hours) and junior standing. 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 required 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.

211 Advanced Expository Writing for International Students (3)

Prerequisite: English 11 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.

English

212 Business Writing (3)

Prerequisites: Freshman composition or equivalent (3-6 hours) and junior standing. 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.

213 Technical Writing (3)

Prerequisites: Freshman composition or equivalent (3-6 hours) and junior standing. 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 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.

214 News Writing (3)

(Same as Comm 214.) Prerequisite: English 10 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.

215 Feature Writing (3)

Prerequisite: English 10 or equivalent. Study of freelance 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. Fulfills the University requirement for a junior-level course in communicative skills. May not be taken on the S/U option.

216 Writing in the Sciences (3)

Prerequisite: Freshman composition or equivalent (3-6 hours) and junior standing. 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 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.

218 Reporting (3)

Prerequisite: English 214 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.

228 Public Relations Writing (3)

(Same as Comm 228.) Prerequisite: English 214 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.

300 Writing in the Professions (3)

Prerequisite: Completion of the University's junior-level requirement in communication skills. A reading and writing course (1) to analyze and imitate the ways that writers in the arts and humanities, sciences, and business adapt their on-paper personalities, topics, organizations, and styles to achieve different aims or address different audiences; and (2) to speculate what finished texts imply about how different writers and disciplines see the world.

302 Writing Literary Criticism (3)

Prerequisite: English 210 or equivalent as judged by instructor. Intensive training in the writing of literary criticism, with some attention to the bibliography and to methods of research in literature. Recommended for all English majors.

303 Advanced Poetry Writing (3)

Prerequisite: English 210 or its equivalent as judged by instructor. Workshop in poetry writing.

304 Advanced Fiction Writing (3)

Prerequisite: English 210 or its equivalent as judged by instructor. Workshop in fiction writing.

305 Writing for Teachers (3)

(Same as SEC ED 305.) Prerequisite: English 210 or a comparable course in advanced composition. 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.

English**313 Advanced Business and Technical Writing (3)**

Prerequisite: English 210 or its equivalent as judged by instructor. An advanced, project-oriented course to produce substantial, multifaceted business and technical writing projects (e.g., reports, manuals, proposals) that demonstrate the ability to handle complex assignments requiring initiative, independent judgment, and good writing skills.

317 Writing Project Workshop (3)

Prerequisites: English 210 or equivalent. A workshop in writing and in teaching writing designed for in-service teachers. Topics may vary. Counts toward Certificate in Writing.

319 Editing (3)

Prerequisites: English 210 or its equivalent as judged by instructor; English 22 or English 322. Introduction to the language and processes of editing. Includes copy editing, the study of style manuals, and an overview of the production process. Counts toward requirement for the Writing Certificate.

320 Independent Writing Project (3)

Prerequisite: English 210 or its equivalent as judged by instructor. Course limited to students who are completing their certificates in writing. May be taken concurrently with the final course in the certificate sequence. Students work individually with the instructor to complete an extensive writing project.

329 Forms and Modes of Poetry (3)

Prerequisite: English 209 prerequisite or corequisite. An advanced critical study of formal poetry, from classical and Renaissance models to modern innovations and master-pieces. The course will cover scansion, figurative language, stanza form and convention, modes of occasional poetry, and studies of formal poets (e.g., Yeats, McKay, Bogan, Auden).

455 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 is 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.

456 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.

459 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 consent 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 ordinarily be repeated for maximum graduate credit of six hours.

485 Theories of Writing (3)

An analysis of major modern theories in composition

486 Studies in Rhetoric (3)

Provides graduate students with a clear definition of and strong background in rhetoric. Topics may include classical rhetoric, modern rhetorical theory, rhetoric/composition.

487 Writing/Reading Theory (3)

The parallel evolution of reading and writing theory and pedagogy. Topics include the influence of psycholinguistics and reader-response theory and the link between reading and writing theory and instruction.

488 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.

489 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.

490 Gateway Writing Project (1-6)

(Same as SEC ED 436.) 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 Certificate in Writing.

491 Studies in Composition (3)

The study of special topics in composition. Topics may include history of composition, psychology of writing, reader-response theory, etc.

492 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 (15) hours.

English

493 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.

494 Final Writing Project (1-6)

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 (defined as six hours of credit) requires a substantial body of original poetry or fiction. May be repeated for maximum graduate credit of six (6) hours.

Language

122 Traditional Grammar (3)

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.

307 Linguistics (3)

Prerequisite: English 210; majors, English 209. 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.

308 English Grammar (3)

Prerequisite: English 210; majors, English 209. A study of modern English grammar from the perspectives of traditional, structural, and transformational grammar.

309 History of the English Language (3)

Prerequisite: Prerequisites: English 10 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.

410 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

12 Literary Types (3)

The student is introduced to the various literary types, including poetry, drama, fiction, and the essay.

13 Topics in Literature (3)

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.

14 Short Subjects (1)

A course on special limited subjects in literature, language, or writing. Content will vary from semester to semester. Subject matter may include, for example, Shakespeare's sonnets, the novels of Tolkien, Wertmuller's films, or any other topics suitable for treatment in a one-hour course. Since the topics of English 14 may change each semester, the course may be repeated for credit if the topics are substantially different.

15 Images of the Elderly in Film (3)

(Same as Gerontology 15.) 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.

16 Images of Age in Literature (3)

(Same as Gerontology 16.) 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.

17 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.

20 Myth (3)

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.

70 African-American Literature (3)

A survey of prose, poetry, and drama by black Americans from the period of enslavement through the Negro Renaissance to the present.

English

71 Native American Literature (3)

(Same as Anthropology 71.) 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 and the College of Arts and Sciences Cultural Diversity requirement.

120 Classical Literature in Translation (3)

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.

123 Jewish Literature (3)

Examines the traditional Jewish literature of the Bible and later legends found in the Talmud and Midrash and also considers later phases of Jewish literature, both sacred and secular. These include medieval folklore and Hasidic tales.

124 Literature of the New Testament (3)

A comprehensive understanding of the New Testament, its literary background, and significance for Western civilization.

125 Literature of the Old Testament (3)

Prerequisite: Sophomore standing or consent of instructor. A comprehensive understanding of the Old Testament, its literary background, and significance for Western civilization.

126 Continental Medieval Masterpieces in Translation (3)

A survey of the masterworks of the early and later Middle Ages, to include the Divine Comedy, Nibelungenlied, Song of Roland, El Mio Cid, selections from Chretien de Troyes, Boccaccio's Decameron, and Machiavelli's The Prince.

127 Survey of European Literature From 1650 to the Second World War (3)

Works of continental writers such as Moliere, Goethe, Dostoevsky, Ibsen, and Kafka, read in translation.

128 The Contemporary World in Literature (3)

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 and it satisfies the College of Arts and Sciences Cultural Diversity requirement.

131 English Literature I (3)

The development of English literature from the Middle Ages through the eighteenth century. Reading and analysis of representative works of selected major writers.

132 English Literature II (3)

The development of English literature during the nineteenth and twentieth centuries. Reading and analysis of representative works of selected major writers.

133 Introduction to Poetry (3)

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.

134 Introduction to Drama (3)

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.

135 Introduction to Fiction (3)

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.

171 American Literature I (3)

Representative selections from American authors from the middle of the seventeenth century to the middle of the nineteenth century.

172 American Literature II (3)

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."

225 Themes and Forms in Literature (3)

The study of particular literary ideas, modes, and genres, and their significance. Topics announced in advance by the department. Since the topics of English 225 may change each semester, the course may be repeated for credit if the topics are substantially different.

280 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 English 280 may change each semester, the course may be repeated for credit if the topics are substantially different.

306 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.

English

321 History of Literary Criticism (3)

Historical survey of the principles of literary criticism from Plato to the present.

322 Old English Literature (3)

Prerequisite: English 210; or, for majors, English 209 prerequisite or corequisite and English 131 prerequisite or permission of instructor. An introduction to the literary culture of Anglo-Saxon England through study of the Old English language and close reading of a diverse group of Old English texts from the eighth to eleventh centuries.

323 Continental 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.

324 Chaucer (3)

Concentrates on the poetry of Geoffrey Chaucer, including the Canterbury Tales, early poetic works, and the Troylus and Criseyde. All readings are in the original Middle English.

325 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.

327 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.

329 Forms and Modes of Poetry (3)

An advanced critical study of formal poetry, from classical and Renaissance models to modern innovations and masterpieces. The course will cover scansion, figurative language, stanza form and convention, modes of occasional poetry, and studies of formal poets (e.g. Yeats, McKay, Bogan, Auden).

332 Elizabethan Poetry and Prose (3)

Spenser, Sidney, Wyatt, and other poets of the latter sixteenth century. The origin and development of prose fiction.

337 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.

338 Shakespeare: Comedies and Histories (3)

Shakespeare's early work for the theatre 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.

339 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 theatres 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.

342 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.

345 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.

346 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.

352 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.

353 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.

364 The Eighteenth-Century English Novel (3)

The origins and early development of the English novel, from Defoe to Jane Austen.

365 The Nineteenth-Century English Novel (3)

Novels of the Romantic and Victorian Periods, from Austen to George Eliot.

368 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.

369 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.

371 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.

English**372 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.

373 Selected Major American Writers I (3)

American literature of the nineteenth century: Emerson, Thoreau, Hawthorne, Melville, Whitman, and others.

374 Selected Major American Writers II (3)

American literature of the late nineteenth and early twentieth centuries: James, Twain, Stephen Crane, Dreiser, and others.

375 American Fiction to World War I (3)

Development of the novel and short story in America.

376 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.

380 Studies in Women and Literature (3)

The course examines feminist critical approaches to literature, the appropriation or transformation of literary genres by women writers, or the writings of women during a particular historical period. Specific topics vary from semester to semester. The course may be repeated for credit if topics are substantially different.

383 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.

384 Modern Poetry (3)

Critical reading and analysis of poetry of the late nineteenth and early twentieth centuries: Yeats, Eliot, Frost, Williams, and others.

385 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.

386 Poetry Since World War II (3)

Reading and analysis of contemporary poetry.

391 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.

395 Special Topics in Literature (3)

Special topics in literature that are not covered in other 300-level English courses. Since the topics of English 395 may change each semester, the courses may be repeated for credit if the topics are substantially different.

400 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.

415 Literary Criticism (3)

An examination of selected theories of literature.

416 Feminist Critical Theory (3)

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.

420 Old English (3)

Elements of old English grammar and exercises from Anglo-Saxon literature.

421 Studies in Middle English Literature (3)

Special topics in English literature before 1500.

430 Renaissance Literature (3)

Special topics in English literature from 1500 to 1660.

450 Eighteenth-Century Literature (3)

Studies in Augustan poetry and prose, including drama and fiction, with emphasis on background and major figures.

460 Studies in Poetry (3)

Study of a few selected British and American poets.

465 Studies in Fiction (3)

Study of a few selected British and American novelists and short story writers.

467 Studies in Drama (3)

Study of a few selected British and American dramatists.

470 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.

475 American Literature Before 1900 (3)

Selected American writers or topics from the Colonial period to 1900.

English

476 Twentieth-Century American Literature (3)
Selected American writers or topics from 1900 to the present.

480 Twentieth-Century British Literature (3)
Selected British and Commonwealth writers of the twentieth century.

495 Seminar in Special Topics (1-3)
Special topics which are not covered in other graduate-level English courses.

497 Independent Reading (1-3)
Directed study in areas of English for which courses are not available.

499 Thesis (6)
Prerequisite: 3.5 graduate G.P.A. Thesis research and writing on a selected topic in English studies.

Special Offerings

250 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.

262 The Curriculum and Methods of Teaching English (3)
(Same as SEC ED 232.) Prerequisites: SEC ED 213 and a near-major in the subject matter. 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. Includes field experiences. 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. This course must be completed in residence.

270 English Teaching Intern Seminar (1)
(Same as SEC ED 270.) Prerequisite: Concurrent enrollment in SEC ED 290. 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 290.

390 Seminar (3)
Prerequisite: Consent of instructor. Intensive reading, critical discussion, and writing on topics to be announced each semester. Since the topics of English 390 may change each semester, the course may be repeated for credit if the topics are substantially different. Enrollment limited to twelve students.

Theatre

21 Fundamentals of Acting (3)
Oral and physical communication of a role through improvisations, exercises, and scene work. Emphasis on modern representational method with some attention given to other styles.

23 Production Aesthetics (3)
An analysis of the visual components of dramatic presentation, including an introduction to theatrical styles and forms, technical design elements, and presentational techniques. A broad survey of theatre production.

60 Voice and Diction (3)
A course designed to aid the student in developing clear and distinct enunciation and in using correct pronunciation as requisite in mass media communication, public address, theatre, and oral interpretation.

80 Introduction to the Theatre (3)
A study of theatre as an art form, emphasizing the audience's appreciation of the art of the playwright, actor, director, and designer. Study of major periods, genres, and plays from classical to modern times.

124 Stage Movement (3)
Training in movement techniques for the stage, including mime, stage combat, and dramatic dance forms.

125 Stagecraft (4)
A survey of the theory and practice of stage scenery methods. Practical experiences in construction, rigging, and stage lighting and painting techniques, as well as supervised work in all other phases of theatrical production will be emphasized. Two hours of lecture and four hours of laboratory.

126 Costuming for the Theatre (3)
This course covers the theory and practice of costume design and construction. It includes an overview of the history of clothing and fashion and its effect on the actor playing period drama. Lab required.

128 Stage Lighting (3)
Prerequisite: Theatre 23 or consent of instructor. An introduction to the theory and practice of stage lighting. The course will include a variety of established theories of stage lighting as well as practical training in lighting instrumentation and control systems.

198 Practicum in Theatre (1-2)
Prerequisites: Theatre 21, 23, or 80. Laboratory experience in campus theatre production from one of the following areas: acting, directing, stage management, lighting, sound design, scene construction, house management. Repeatable, but no more than four credit hours may be earned in departmental practicum courses.

English

221 Ensemble Acting (3)

Prerequisite: Theatre 21. Laboratory-discussion course emphasizing role analysis, scene study, characterization, and ensemble acting.

223 Aesthetics of Theatrical Styles (3)

Prerequisite: Theatre 23. Analysis of the development of dramatic and artistic styles as they affect the visual presentation of ideas in theatre.

224 Movement for Musical Theatre (3)

Prerequisite: Theatre 124 or consent of instructor. Specialized training in movement and dance techniques for musical theatre.

225 Designing for the Theatre (3)

An introduction to the theories and practices of scenic and costume design for the theatre. The course will survey the evolution of theatrical designs through different cultures, dramatic genres, and theatre architecture.

261 Readers Theatre (3)

Prerequisite: Communication 160. Study of the oral interpretation of literature as a theatrical experience. Study of theory, techniques, and performance.

281 Theatre from the Ancient Greeks to the Restoration (3)

Prerequisite: Theatre 80 or consent of instructor. History of theatre and drama from Classical Greek to the Restoration period.

282 Theatre from the Eighteenth Century to the 1990s (3)

Prerequisite: Theatre 80 or consent of instructor. History of theatre and drama from the eighteenth century to the present.

321 Acting Styles (3)

Prerequisite: Theatre 221. Studies in period acting styles, emphasizing cultural distinctions in manners, movement, and vocal practice.

322 Directing for the Theatre (3)

Prerequisite: Theatre 21 or consent of instructor. A survey of the theories and practices of theatrical directing. The course will explore the director's role in the theatre from script analysis and production planning to the performance of laboratory scenes.

323 Theatre Management (3)

Prerequisite: Communication 135. Comprehensive study of theatre management techniques, including season selection, budget control, box office, facility management, and promotional techniques for theatre.

398 Internship in Theatre (3)

Prerequisite: Senior standing with at least 12 hours of course work in theatre. Supervised practical work at a theatre off-campus in one of the following areas: acting, directing, design stage management. Repeatable, but no more than six hours total credit may be earned in internship courses.

Foreign Languages and Literatures

Faculty

Roland A. Champagne, Professor*, French
Chairperson
Ph.D., The Ohio State University

Lorna V. Williams, Professor*, Spanish
Ph.D., Indiana University

Marcus Allen, Associate Professor Emeritus*, French
Ph.D., University of Pittsburgh

Albert J. Camigliano, Associate Professor*, German
Ph.D., University of Wisconsin

Alfred F. Goessl, Associate Professor Emeritus*,
German Ph.D., Tulane University

Jeanne Morgan Zarucchi, Associate Professor*;
French Ph.D., Harvard University

Theresa Sears, Associate Professor*, Spanish
Ph.D., Cornell University

Linda Quinn Allen, Assistant Professor, French
Ph.D., Purdue University

Ingeborg M. Goessl, Assistant Professor*, German
Ph.D., University of Kansas

Panayiotis Bosnakis, Assistant Professor, Greek
Ph.D., Ohio State University

Paul R. Hoffman, Assistant Professor Emeritus,
German M.A., University of Michigan

Rolf R. Mueller, Assistant Professor, German
Ph.D., University of Kansas

Deborah Baldini, Senior Lecturer, Spanish
M.A., Washington University

Rita Bergoudian, Senior Lecturer, French
M.A., University of South Carolina

Geremie Hoff, Senior Lecturer, Italian and Spanish
M.A., Webster University

Anne-Sophie Blank, Lecturer, French
M.A., Washington University

Martha Caero, Lecturer, Spanish
M.A., Washington University

Donna Cays, Lecturer, Spanish
M.A., St. Louis University

Sandra Harris, Lecturer, French
M.A., University of Missouri-Columbia

Denise Mussman, Lecturer, ESL
M.A., University of Illinois-Chicago

Leslie Nelson, Lecturer, Spanish
M.A., Washington University

Margaret B. Phillips, Lecturer, Latin
Ph.D., St. Louis University

Susana Walter, Lecturer, Spanish
M.A., Washington University

Susan Yoder, Lecturer, Spanish
M.A., University of Virginia, Charlottesville

*members of Graduate Faculty

General Information

Degrees and Areas of Concentration The Department of Foreign Languages and Literatures offers course work in French, German, and Spanish, leading to the B.A. degree, and a field of concentration in each of these languages for those students seeking the B.S. degree in education. In addition, the department offers lower-level courses in Chinese, English as a Second Language, Italian, Japanese, Korean, Latin, and Russian.

Courses in Chinese, Japanese and Korean are offered on the UM-St. Louis campus in conjunction with Washington University faculty, as part of the Joint Center for East Asian Studies. A minor in French,

German, or Spanish may also be earned in the department. For details, see "Specific Requirements for the Minor," which appears later in this section.

The Department maintains a library where books, journals, magazines, and other foreign language realia are available to students, and a language resource center with audiovisual and computer materials.

Cooperative Study Courses in other languages are available to UM-St. Louis students through Washington University and St. Louis University. For information, consult the UM-St. Louis registrar's office.

Study Abroad Language students who have been at the University of Missouri-St. Louis at least one semester and have studied the language at least one year may receive 3-6 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 that is renewable each semester on a competitive basis. For information, contact the department.

German Majors Students of German may apply for UM-St. Louis Summer Abroad scholarships that will partially finance their summer studies abroad. Qualified German majors with junior or senior standing may apply for educational fee waivers. For information, contact the department.

Departmental Honors Candidates for departmental honors in French, German, 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 001 and 002)
- 2) maintain an overall GPA of 3.2
- 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. Any literature or civilization course offered by the department may be used to meet the humanities requirement.

Satisfactory/Unsatisfactory Option

Any course offered by the department may be taken on a satisfactory/unsatisfactory basis by nonmajors except Language 001, 002, and 101 (or equivalent), and Language 115a, b, and c, Intensive Language. Courses taken as a part of the major may not be taken on a satisfactory/unsatisfactory basis.

Students who have fulfilled the language requirement (thirteen hours: Language Courses 001, 002, and 101) may enroll in a second language on a satisfactory/unsatisfactory basis.

Foreign Languages and Literatures

Specific Requirements or Restrictions

Students entering with no high school language units must enroll in Language 001 or may enroll in Language 115. Language 115 (a, b, and c) is the intensive study of a language and will satisfy the foreign language requirement.

A D in a Language 001 course is a passing grade but not an entrance grade for a Language 002 course. A D in a Language 002 course is a passing grade but not an entrance grade for a Language 101 course or its equivalent. A D in a Language 101 course fulfills the language requirement, but is not an entrance grade for a higher level course.

Students with a degree of proficiency equivalent to 13 hours of college-level work may obtain exemption and/or credit by passing the department's placement exam. Upon taking the exam, non-native speakers of the language will receive credit (up to 13 hours) provided that they take a higher level course at UM-St. Louis and receive a grade of C- or better. A native speaker is defined as a person who speaks the target language fluently and has had formal schooling through the secondary-school level or equivalent in the target language. The specific dates for the exam are announced in the Schedule of Courses or may be obtained from the admissions office or the department.

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 002 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 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 001 and 002). The maximum number of hours that may be taken in the major is 45 (including Language 001 and 002). In addition, students seeking the B.A. in a foreign language who desire a teaching certificate must also take Course 264 (same as SEC ED 274), Curriculum and Methods of Teaching Foreign Languages, Course 364 (same as SEC ED 374), Foreign Language Teaching Seminar, and fulfill the professional secondary education requirements of the School 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 001 and 002), of which 12 hours must be on the 300 level. Students working toward a degree in elementary education, with related work in a foreign language, should consult the School of Education concerning their program.

Transfer Students

Transfer students majoring in one of the modern foreign languages must complete at UM-St. Louis a minimum of 12 graded hours in language courses at the 200 level or above with a grade point average of 2.0 or better in these courses.

Native Speakers

Native speakers must complete five courses on the 200 level or above to obtain a major in their native language.

Specific Requirements for the Major

French

Each major in French must complete the following courses:

- 101**, Intermediate French Language and Culture, or the equivalent
- 170**, Composition and Conversation
- 180**, Readings in French
- 200**, Advanced Grammar
- 211**, Contemporary French Civilization
- 280**, French Literature I: Middle Ages to Eighteenth Century
- 281**, French Literature II: Nineteenth and Twentieth Centuries

and four courses at the 300 level.

In addition to fulfilling the general education and specific major degree requirements, each French major is advised to take 15 hours of electives from two or more of the following areas: art, economics, English, history, music, philosophy, or political science. Listings of recommended courses may be obtained in the department office. The remaining hours should be selected from university-level courses at UM-St. Louis in one or more of the areas listed below 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, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, business education, engineering, and interdisciplinary.

The following courses are also strongly recommended:

- German 110**, Masterpieces of German Literature in Translation
- Spanish 110**, Spanish Literature in Translation
- History 345**, Europe 1763-1871
- History 351**, Contemporary France: Since 1870

Foreign Languages and Literatures

German

Each major in German must complete the following courses:

- 101**, Intermediate German Language and Culture
- 170**, Composition and Conversation
- 180**, Readings in German
- 201**, Masterpieces of German Literature
- 202**, The German Novelle and Drama
- 208**, Intermediate Composition and Conversation
- 210**, German Culture and Civilization

and four courses at the 300 level.

In addition to fulfilling the general education and specific major degree requirements, each German major is advised to take 15 hours of electives from two or more of the following areas: art, economics, English, history, music, philosophy, or political science. Listings of recommended courses may be obtained in the department office. The remaining hours should be selected from university-level courses at UM-St. Louis in one or more of the areas listed below 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, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, business, education, engineering, and interdisciplinary.

The following courses are also strongly recommended:

- English 120**, Classical Literature in Translation
- English 337**, Shakespeare: Tragedies and Romances
- French 110**, Modern French Literature in Translation, or **150**, European Literature in Translation: Special Topics
- Spanish 110**, Spanish Literature in Translation, or **150**, European Literature in Translation: Special Topics
- History 352**, Germany in the Modern Age
- Philosophy 105**, Twentieth-Century Philosophy

Spanish

Each major in Spanish must complete the following courses:

- 101**, Intermediate Spanish Language and Culture, or **105**, Commercial Spanish, or the equivalent

Two of the following three:

- 171**, Spanish Conversation and Pronunciation
- 172**, Spanish Composition
- 180**, Readings in Spanish
- 200**, Syntax of the Spanish Language
- 210**, Hispanic Culture and Civilization: Spain, or **211**, Hispanic Culture and Civilization: Spanish America

- 280**, Introduction to Hispanic Literature: Spain
- 281**, Introduction to Hispanic Literature: Spanish America

and four courses at the 300 level, **one of which must be: 399**, Seminar on Hispanic Literature

In addition to fulfilling the general education and specific major degree requirements, each Spanish major is advised to take 15 hours of electives from two or more of the following areas: art, economics, English, history, music, philosophy, or political science. Listings of recommended courses may be obtained in the department office. The remaining hours should be selected from university-level courses at UM-St. Louis in one or more of the areas listed below 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, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, business, education, engineering, and interdisciplinary.

The following courses are also strongly recommended:

- French 110**, Modern French Literature in Translation, or **150**, European Literature in Translation: Special Topics
- German 110**, Masterpieces of German Literature in Translation
- History 355**, History of Spain
- History 371**, History of Latin America: to 1808
- History 372**, History of Latin America: Since 1808
- PolSci 253**, Political Systems of South America
- PolSci 254**, Political Systems of Mexico, Central America, and the Caribbean

Specific Requirements for the Minor

A minor in French, German, or Spanish may be earned by completing six courses in the language beginning with Language 101 or its equivalent. These courses must be completed with a grade of C- or better. Transfer students must complete at least two courses for the minor at UM-St. Louis. After Language 101, students must complete the following courses in the language of their chosen minor:

- French**
- 170**, Composition and Conversation
- 180**, Readings in French
- 200**, Advanced Grammar
- 280**, French Literature I, or **281**, French Literature II

Plus one additional course on the 200 level or above.

German

- 170**, Composition and Conversation
- 180**, Readings in German
- 201**, Masterpieces of German Literature, or **202**, The German Novelle and Drama

Plus any two additional courses on the 200 level or above.

Foreign Languages and Literatures

Spanish

Two of the following three:

171, Conversation and Pronunciation

172, Composition

180, Readings in Spanish

200, Syntax of the Spanish Language, or

271, Advanced Spanish Conversation

280, Introduction to Hispanic Literature: Spain, or

281, Introduction to Hispanic Literature: Spanish
America

Plus one additional course on the 200 level or above.

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.

Foreign Languages and Literatures

Course Descriptions

Prerequisites may be waived by consent of the department.

The following courses fulfill the Humanities [H] breadth of study requirements:

FRENCH: 110, 150, 180, 211, 280, 281, 331, 341, 342, 353, 354, 362, 365, 371, 375, 390. **GERMAN:** 110, 150, 180, 201, 202, 210, 315, 320, 345, 397, 398, 399. **SPANISH:** 110, 111, 150, 180, 210, 211, 280, 281, 310, 315, 320, 321, 325, 330, 331, 335, 340, 345, 351, 360, 399.

264 Curriculum and Methods of Teaching Foreign Languages (3)

(Same as SEC ED 274.) Prerequisites: SEC ED 213 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.

300 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.

364 Foreign Language Teaching Seminar (2)

(Same as SEC ED 374.) Prerequisite: Concurrent enrollment in SEC ED 290 or consent of instructor. A practicum course in the teaching of foreign languages. Review and explanation of drills, dialogues, and a variety of classroom techniques, oral and written. A continuation of FLL 264, Curriculum and Methods, with an emphasis on specific practical skills. To be taken concurrently with SEC ED 290, Student Teaching.

Chinese

Courses in Chinese are taught on the UM-St. Louis campus by faculty of Washington University, through the Joint Center for East Asian Studies.

001 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.

002 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.

101 Intermediate Chinese I (5)

Prerequisite: Chinese II or equivalent. Grammar review and continued development of language skills.

102 Intermediate Chinese II (5)

Prerequisite: Chinese 101 or equivalent. Continuation of Chinese 101.

190 Special Readings (1-3)

Prerequisite: Chinese 102 or consent of the department. Independent study through readings, reports, and conferences.

English as a Second Language

201 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.

203 Intermediate ESL Reading and Writing (3)

Prerequisite: Minimum TOEFL score of 450 or placement by examination. In this course international students develop fluency in their reading and writing skills in American English. This course consists of reading a variety of types of written texts, vocabulary building, organization in writing from the paragraph to essay, techniques for generating ideas, grammar use and editing. This course does not count toward a degree.

205 Intermediate ESL Grammar (2)

Prerequisite: Minimum TOEFL score of 450 or placement by examination. A course for international students who have already studied basic English grammar. The content covers intensive study of verb tenses; their forms, meanings an integrated use; and other grammatical structures. This course does not count toward a degree.

301 Advanced ESL Conversation and Pronunciation (3)

Prerequisite: Successful completion of ESL 201, minimum TOEFL score of 500 or placement by examination. Designed for non-native speakers who need to improve their fluency and pronunciation in American English. Conversation strategies, oral presentations and extensive practice to reduce accent are included. This course does not count toward a degree.

302 Advanced ESL Listening and Note-taking (2)

prerequisite: Successful completion of ESL 201, minimum TOEFL score of 500 or placement by examination. Listening and note-taking skills are developed through practice. Students learn to recognize the organization and emphasis of class lectures. Strategies include vocabulary building, test-taking, and participation in class discussions. This course does not count toward a degree.

Foreign Languages and Literatures

303 Advanced ESL Reading and Writing (3)

Prerequisite: Successful completion of ESL 203, minimum TOEFL score of 500 or placement by examination. To prepare students for English 10 or English 210, writing skills include organization of essays, rhetorical forms and their structure works, revision of ideas, research techniques, grammar use and editing. For reading development, students read articles and a novel, practice reading strategies and learn how to summarize articles. This course does not count toward a degree.

305 Advanced ESL Grammar (2)

Prerequisites: Minimum TOEFL score of 500. This course is for ESL students who need review and applied practice of English grammar for oral and written work. This course does not count toward a degree. Placement by assessment or consent of program coordinator.

390 Special Readings (1-3)

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

400 International Teaching Assistant Seminar (1-3)

Prerequisites: Consent of instructor. 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

001 French I (5)

Emphasis will be placed upon the speaking and understanding of French and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

002 French II (5)

Prerequisite: French 1 or equivalent. Emphasis will be placed upon the speaking and understanding of French and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

35 English Grammar for Students of Foreign Languages (1)

This course is designed to familiarize the student with basic English grammar and the terms commonly used in the teaching of most languages. This course does not count toward a major or minor in English or any foreign language.

101 Intermediate French Language and Culture (3)

Prerequisite: French 2 or equivalent. Grammar review and continued development of language skills with readings in their cultural context.

110 Modern French Literature in Translation (3)

Prerequisite: Sophomore standing. Reading and discussion of selected works in French literature from the modern period, in English translation. No credit toward major in French.

111 Francophone Culture (3)

Prerequisites: French 101 or equivalent and permission of instructor. Analyses and discussions of cultural issues in the French-speaking world through the critical reading of representative texts.

115A, 115B, 115C Intensive French (15)

Prerequisites: Aptitude test and permission of department. An intensive study of French. 115a, 115b, 115c 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.

125 Introduction to French/English Translation Techniques (3)

Prerequisite: French 101 or equivalent, or permission of instructor. Practical training in translating from English into French and French into English using a variety of technical, scientific, literary, and commercial texts.

150 European Literature in Translation: Special Topics (3)

Major figures, works, or movements in the literature of Europe and their relevance to our own age. Topic is announced in advance by the department. Does not count toward major in French.

160 French Phonetics (3)

Prerequisite: French 101 or consent of instructor. An analytic and practical study of French pronunciation. Emphasis is placed upon the articulation and practice of contemporary French sounds.

170 Composition and Conversation (3)

Prerequisite: French 101 or equivalent. Emphasis will be placed on the development of speaking and writing skills in French.

180 Readings in French (3)

Prerequisite: French 170 or equivalent. Development of language skills through reading and discussion of literary texts.

190 Special Readings in French (1-3)

Prerequisites: French 101 and consent of the department. Independent study on mutually acceptable topics through readings, reports, and conferences.

200 Advanced Grammar (3)

Prerequisite: French 170 or equivalent. Problems in grammatical analysis.

205 Commercial French (3)

Prerequisite: French 170 or equivalent. Introduction to French business language with emphasis on technical vocabulary and correct French usage in business affairs.

211 Contemporary French Culture (3)

Prerequisite: French 180 and 200 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 in French.

271 Intermediate French Conversation (3)

Prerequisites: French 170 or consent of department. Emphasis will be placed upon the further development of oral skills in French.

Foreign Languages and Literatures

280 French Literature I: Middle Ages to Eighteenth Century (3)

Prerequisite: French 180 and 200 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.

281 French Literature II: Nineteenth and Twentieth Centuries (3)

Prerequisite: French 180 and 200 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.

290 Special Readings (1-3)

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

300 Syntax and Stylistics (3)

Prerequisite: French 200 or equivalent. Advanced theoretical and practical study of modern French syntax. Analysis of French prose style.

311 Special Topics in French Culture (3)

Prerequisite: Junior standing or French 280 or 281 for French majors. Selected topics in French culture taught in English with assignments in English. French majors will do course assignments in French. This course may be repeated for credit.

331 Medieval and Renaissance Literature (3)

Prerequisite: French 280 or 281. 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.

341 Seventeenth-Century French Theatre and Poetry (3)

Prerequisite: French 280 or 281. Critical reading and analysis of French Classical Age theatre and poetry, including works by Corneille, Moliere, Racine, and La Fontaine.

342 Seventeenth-Century French Prose (3)

Prerequisite: French 280 or 281. 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.

353 Eighteenth-Century French Literature (3)

Prerequisite: French 280 or 281. The philosophic movement. Selected readings of the eighteenth century, including Montesquieu, Voltaire, Diderot, and Rousseau.

354 Eighteenth-Century French Theatre and Novel (3)

Prerequisite: French 280 or 281. Critical reading and discussion of representative novels and plays of the eighteenth century.

362 Nineteenth-Century French Novel (3)

Prerequisite: French 280 or 281. Critical reading of selected works by the major novelists of the period. Discussion of realism and naturalism.

365 Modern French Poetry (3)

Prerequisite: French 280 or 281. A study of French poetry in the nineteenth and twentieth centuries through critical readings of selected works by major poets.

371 Twentieth-Century French Novel (3)

Prerequisite: French 280 or 281. A study of selected works by the principal novelists of the modern period.

375 Modern French Theatre (3)

Prerequisite: French 280 or 281. A study of French drama in the nineteenth and twentieth centuries through critical study of selected works by major dramatists.

390 Special Readings (1-3)

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

399 French Seminar (3)

Prerequisite: French 280 or 281. Specialized topic in French literature. Subject to be announced by instructor in charge of seminar.

400 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

001 German I (5)

Emphasis will be placed upon the speaking and understanding of German and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

002 German II (5)

Prerequisite: German 1 or equivalent. Emphasis will be placed upon the speaking and understanding of German and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

35 English Grammar for Students of Foreign Languages (1)

This course is designed to familiarize the student with basic English grammar and the terms commonly used in the teaching of most languages. This course does not count toward a major or minor in English or any foreign language.

50 German for Reading Knowledge (3)

This course presumes no prior knowledge of German and is designed to provide the student with a basic recognition knowledge of vocabulary, structure, and syntax. German for Reading Knowledge does not fulfill the language requirement nor does it count toward a major or minor in German.

100 Scientific German (3)

Prerequisite: German 2 or equivalent. Reading of selected German texts in the natural and social sciences. Designed primarily for majors in these areas. This course is the equivalent of German 101. German 101 and German 100 may not both be taken for credit.

Foreign Languages and Literatures

101 Intermediate German Language and Culture (3)

Prerequisite: German 2 or equivalent. Grammar review and continued development of language skills with readings in their cultural context.

110 Masterpieces of German Literature in Translation (3)

Prerequisite: Sophomore standing. Representative readings in German literature from the beginning to the present. Emphasis to be placed upon German literature in the general context of European culture. No credit toward major in German.

115A, 115B, 115C Intensive German (15)

Prerequisites: Aptitude test and permission of department. An intensive study of German assuming no previous knowledge of German. 115a, 115b, 115c 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.

150 European Literature in Translation: Special Topics (3)

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

170 Composition and Conversation (3)

Prerequisite: German 101 or equivalent. Emphasis will be placed on the development of speaking and writing skills in German.

180 Readings in German (3)

Prerequisite: German 170 or equivalent. May be taken concurrently. Further development of language skills through readings and discussions of literary texts.

190 Special Readings (1-3)

Prerequisites: German 101 and consent of department. Independent study on mutually acceptable topics through readings, reports, and conferences.

201 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.

202 The German Novelle and Drama (3)

Prerequisite: German 201 or equivalent. Reading and critical analysis of selected German Novellen and dramas.

208 Intermediate Composition and Conversation (3)

Prerequisite: German 170 or equivalent. Emphasis on speaking and writing German.

210 German Culture and Civilization (3)

Prerequisite: German 180 or equivalent. A survey of the development of German culture and civilization. All reading and class work in German.

290 Special Readings: German (1-3)

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

308 Advanced Composition and Conversation (3)

Prerequisite: German 208 or equivalent. Continuation of German 208. Designed to develop accuracy and fluency of expression in German.

315 German Classicism and Romanticism (3)

Prerequisites: German 201 and one other 200-level course in German. Representative writers from the classical and romantic periods of German literature, including works by Lessing, Goethe, Kleist, and E.T.A. Hoffmann.

320 German Realism and Naturalism (3)

Prerequisites: German 201 and one other 200-level course in German. Representative writers of realism and naturalism in German literature, including works of Grillparzer, Hebbel, Stifter, Keller, and Hauptmann.

345 Modern German Literature (3)

Prerequisites: German 201 and one other 200-level course in German. Representative works from modern German literature.

390 Special Readings (1-3)

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

397 Survey of German Literature Part I (3)

Prerequisite: German 201 or 202. Special emphasis on the summary and synthesis of trends and characteristics of major periods in German literature, considered in the general context of European culture.

398 Survey of German Literature Part II (3)

Prerequisite: German 201 or 202. Special emphasis on the summary and synthesis of trends and characteristics of major periods in German literature, considered in the general context of European culture.

399 German Seminar (3)

Prerequisite: German 201 or 202. Specialized topic in German literature.

Ancient Greek

001 Ancient Greek 1 (5)

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

002 Ancient Greek 2 (5)

Prerequisite: Ancient Greek 1 or equivalent. The study of vocabulary, grammar, and syntax is continued from Greek 1. Readings and discussion from selected classical authors.

35 English Grammar for Students of Foreign Languages (1)

This course is designed to familiarize the student with basic English grammar and the terms commonly used in the teaching of most languages. This course does not count toward a major or minor in English or any foreign language.

101 Intermediate Ancient Greek Language and Culture (3)

Prerequisite: Ancient Greek 2 or equivalent. Grammar review and continued development of language skills with readings in their cultural context.

Foreign Languages and Literatures

151 Greek and Latin in English Today (3)
(Same as Latin 151.) 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.

190 Special Readings (1-3)
Prerequisites: Greek 101 and consent of department. Independent study through readings, reports, and conferences.

Modern Greek

001 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.

002 Modern Greek II (5)
Prerequisite: Modern Greek 001 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.

101 Intermediate Modern Greek Language and Culture (3)
Prerequisite: Modern Greek 002 or equivalent. Grammar review and continued development of language skills with readings in their cultural context.

150 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.

190 Special Readings (1-3)
Prerequisite: Modern Greek 101 or consent of the department. Independent study through readings, reports, and conferences.

Hebrew

Courses in Biblical and Modern Hebrew are available at Washington University for UM-St. Louis students. Consult the Foreign Languages and Literatures department for details.

- 101D Beginning Biblical Hebrew (3)
- 102D Beginning Biblical Hebrew (3)
- 211D Intermediate Biblical Hebrew (3)
- 212D Biblical Literature (3)
- 105D Beginning Modern Hebrew I (5)
- 106D Beginning Modern Hebrew II (5)
- 213D Intermediate Modern Hebrew I (5)

Note: Course 101 at Washington University is equivalent to Course 001 at UM-St. Louis.

Italian

001 Italian I (5)
Fundamentals of Italian grammar, pronunciation, and diction for students with no previous acquaintance with the language. One-hour laboratory per week required.

002 Italian II (5)
Prerequisite: Italian 1 or equivalent. Continuation of grammar and conversation with introductory readings centering on Italian contributions to art, literature, and music. One-hour laboratory per week required.

35 English Grammar for Students of Foreign Languages (1)
This course is designed to familiarize the student with basic English grammar and the terms commonly used in the teaching of most languages. This course does not count toward a major or minor in English or any foreign language.

101 Intermediate Italian Language and Culture (3)
Prerequisite: Italian 2 or equivalent. Grammar review and continued development of language skills with readings in their cultural context.

190 Special Readings (1-3)
Prerequisite: Italian 101 or equivalent. Readings on literary topics mutually acceptable to student and instructor.

Japanese

Courses in Japanese are taught on the UM-St. Louis campus by faculty of Washington University, through the Joint Center for East Asian Studies.

001 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.

002 Japanese II (5)
Prerequisite: Japanese I or equivalent. Emphasis is placed upon the understanding, speaking, reading, and writing of Japanese. Continuation of the acquisition of the fundamentals of grammar and syntax.

101 Intermediate Japanese I (5)
Prerequisite: Japanese II or equivalent. Grammar review and continued development of language skills.

102 Intermediate Japanese II (5)
Prerequisite: Japanese 101 or equivalent. Continuation of Japanese 101.

190 Special Readings (1-3)
Prerequisite: Japanese 102 or consent of the department. Independent study through readings, reports, and conferences.

Korean

001 Korean I (5)
Emphasis is placed upon the understanding, speaking, reading, and writing of Korean and upon the acquisition of the fundamentals of grammar and syntax.

Foreign Languages and Literatures

002 Korean II (5)

Prerequisite: Korean I or equivalent. Emphasis is placed upon the understanding, speaking, reading, and writing of Korean. Continuation of the acquisition of the fundamentals of grammar and syntax.

101 Intermediate Korean I (5)

Prerequisite: Korean II or equivalent. Grammar review and continued development of language skills.

102 Intermediate Korean II (5)

Prerequisite: Korean 101 or equivalent. Continuation of Korean 101.

190 Special Readings (1-3)

Prerequisite: Korean 102 or consent of the department. Independent study through readings, reports, and conferences.

Latin

001 Latin 1 (5)

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

002 Latin 2 (5)

Prerequisite: Latin 1 or equivalent. The study of vocabulary, grammar, and syntax is continued from Latin 1. Readings and discussion from selected classical authors.

35 English Grammar for Students of Foreign Languages (1)

This course is designed to familiarize the student with basic English grammar and the terms commonly used in the teaching of most languages. This course does not count toward a major or minor in English or any foreign language.

101 Intermediate Latin Language and Culture (3)

Prerequisite: Latin 2 or equivalent. Grammar review and continued development of language skills with readings in their cultural context.

151 Greek and Latin in English Today (3)

(Same as Ancient Greek 151.) 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.

190 Special Readings (1-3)

Prerequisites: Latin 101 and consent of department. Independent study through readings, reports, and conferences.

Russian

001 Russian I (5)

Emphasis will be placed upon the speaking and understanding of Russian and upon the acquisition of the fundamentals of grammar and syntax. Five hours of class and one-hour language laboratory per week required.

002 Russian II (5)

Prerequisite: Russian 1 or equivalent. Emphasis will be placed upon the speaking and understanding of Russian and upon the acquisition of the fundamentals of grammar and syntax. Five hours of class and one-hour language laboratory per week required.

008 Introduction to Life in Russia (2)

This course gives insights into the practices, customs and habits of contemporary Russian society. It targets the beginner and teaches many useful phrases for basic reading skills for business or travel. Course is taught in English and does not count towards the language requirement.

35 English Grammar for Students of Foreign Languages (1)

This course is designed to familiarize the student with basic English grammar and the terms commonly used in the teaching of most languages. This course does not count toward a major or minor in English or any foreign language.

100 Scientific Russian (3)

Prerequisite: Russian 2 or equivalent. Introduction to reading of selected Russian texts in the natural and social sciences. Designed primarily for majors in these areas. This course is the equivalent of Russian 101. Russian 101 and Russian 100 may not both be taken for credit.

101 Intermediate Russian Language and Culture (5)

Prerequisite: Russian 2 or equivalent. Grammar review and continued development of language skills with readings in their cultural context.

190 Special Readings (1-3)

Prerequisite: Russian 101 or equivalent. Readings on literary topics mutually acceptable to student and instructor.

Spanish

001 Spanish I (5)

Emphasis will be placed upon the speaking and understanding of Spanish and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

002 Spanish II (5)

Prerequisite: Spanish 1 or equivalent. Emphasis will be placed upon the speaking and understanding of Spanish and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

Foreign Languages and Literatures

35 English Grammar for Students of Foreign Languages (1)

This course is designed to familiarize the student with basic English grammar and the terms commonly used in the teaching of most languages. This course does not count toward a major or minor in English or any foreign language.

101 Intermediate Spanish Language and Culture (3)

Prerequisite: Spanish 2 or equivalent. Grammar review and continued development of language skills with readings in their cultural context.

105 Commercial Spanish (3)

Prerequisite: Spanish 2 or equivalent. Grammar review and cultivation of language skills with emphasis on technical vocabulary and correct Spanish usage in business affairs. Designed for business majors, economics majors, or anyone interested in the commercial application of Spanish. This course is the equivalent of Spanish 101; both may not be taken for credit.

110 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.

111 Spanish-American Literature in Translation (3)

Prerequisite: Sophomore standing. Lectures on the literature and culture of Spanish America. Reading and discussion of works of representative poets, novelists, and essayists of the contemporary period. No credit toward major in Spanish.

115A, 115B, 115C Intensive Spanish (15)

Prerequisites: Aptitude test and permission of department. An intensive study of Spanish assuming no previous knowledge of Spanish. 115a, 115b, 115c 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.

150 European Literature in Translation: Special Topics (3)

Major figures, works, or movements in the literature of Europe and their relevance to our own age. Topic is announced in advance by the department. Does not count toward major in Spanish.

171 Spanish Conversation and Pronunciation (3)

Prerequisite: Spanish 101 or equivalent. Emphasis will be placed upon the development of oral skills in Spanish and upon the problems of Spanish pronunciation and intonation.

172 Spanish Composition (3)

Prerequisite: Spanish 101 or equivalent. Emphasis in developing the capacity and the ability to write in Spanish.

180 Readings in Spanish (3)

Prerequisite: Spanish 101 or equivalent. Development of language skills through reading and discussion of a variety of texts.

190 Special Readings (1-3)

Prerequisites: Spanish 101 and consent of department. Independent study through readings, reports, and conferences.

200 Syntax of the Spanish Language (3)

Prerequisite: Spanish 171, 172, 180 (2 of the 3 courses) or equivalent. Study of the syntactical and morphological characteristics of the Spanish language. Designed primarily for students majoring in Spanish. May be taken concurrently with any 200-level course.

210 Hispanic Culture and Civilization: Spain (3)

Prerequisite: Spanish 171, 172, 180 (2 of the 3 courses) or equivalent. The development of Spanish peninsular civilization from its Roman beginnings to the present.

211 Hispanic Culture and Civilization: Spanish America (3)

Prerequisite: Spanish 171, 172, or 180 (2 of the 3 courses) equivalent. The development of the cultures and civilization of the Spanish-speaking nations of the Western hemisphere.

271 Advanced Spanish Conversation (3)

Prerequisite: Spanish 171 or consent of department. Emphasis will be placed upon the further development of oral skills in Spanish.

280 Introduction to Hispanic Literature: Spain (3)

Prerequisite: Spanish 171, 172, 180 (2 of the 3 courses) or equivalent. Study of selected texts of Spanish writers from the Middle Ages to the present and the historical, cultural, and political factors which influence their writing. Required of Spanish majors. Spanish 180 is recommended for prerequisite.

281 Introduction to Hispanic Literature: Spanish America (3)

Prerequisite: Spanish 171, 172, 180 (2 of the 3 courses) or equivalent. 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 180 is recommended for prerequisite.

290 Special Readings: Spanish (1-3)

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

300 Advanced Spanish Grammar (3)

Prerequisite: Spanish 200 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.

310 Spanish Literature From 1898 to 1939 (3)

Prerequisite: Spanish 280. A study of cultural and literary characteristics of the period. Emphasis on leading novelists, poets, essayists, and dramatists.

Foreign Languages and Literatures**315 Spanish Literature From 1939 to the Present (3)**

Prerequisite: Spanish 280. A study of cultural and literary development since the Spanish Civil War. Emphasis on leading novelists and dramatists.

320 Realism and Naturalism in the Nineteenth-Century Spanish Novel (3)

Prerequisite: Spanish 280. 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).

321 Poetry and Drama of the Nineteenth Century (3)

Prerequisite: Spanish 280. 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).

325 Poetry and Drama of the Golden Age (3)

Prerequisite: Spanish 280. 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.

326 Applied Linguistics in Spanish (3)

Prerequisites: Spanish 200 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.

327 Spanish Dialectology (3)

Prerequisites: Spanish 200 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.

330 Cervantes (3)

Prerequisite: Spanish 280. A study of Don Quixote in relation with the author's life and with the cultural background of the Spanish Golden Age. Independent readings on other works of Cervantes.

331 Picaresque and Satirical Prose (1550-1650) (3)

Prerequisite: Spanish 280. A study of Renaissance and Baroque prose in its social context. All readings and discussions in Spanish.

335 Masterpieces of Spanish Medieval and Renaissance Literature (3)

Prerequisite: Spanish 280. 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.

340 Spanish-American Literature of the Nineteenth Century (3)

Prerequisite: Spanish 281. 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.

341 Modernismo (3)

Prerequisite: Spanish 281. The genesis, development, and influence of this literary movement in Spanish-American letters with emphasis on Modernista poetry and prose.

345 Spanish-American Literature of the Twentieth Century (3)

Prerequisite: Spanish 281. A study of the leading Spanish American poets, essayists, and novelists of this period as interpreters of contemporary man's dilemma and the "pathos" and "ethos" of their culture.

351 Spanish-American Fiction in the Twentieth Century (3)

Prerequisite: Spanish 281. The role of prose fiction in Spanish American literary and cultural history from World War I to the present.

360 Spanish American Poetry From Modernismo to the Present (3)

Prerequisite: Spanish 281. A study of poetry and its role in the literary and cultural history of Spanish-American society from Modernismo to the present.

390 Special Readings (1-3)

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

399 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.

400 Spanish as Spoken Today (3)

Prerequisite: Graduate standing. 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.

History

Faculty

Mark A. Burkholder, Professor*; Chairperson
Ph.D., Duke University

Jerry M. Cooper, Professor*; Graduate Coordinator
Ph.D., University of Wisconsin

Walter Ehrlich, Professor Emeritus*
Ph.D., Washington University

Paul Corby Finney, Professor*
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*
Ph.D., Washington University

Charles P. Korr, Professor*
Ph.D., University of California-Los Angeles

William S. Maltby, Professor Emeritus*
Ph.D., Duke University

Richard H. Mitchell, Professor*
Ph.D., University of Wisconsin

James Neal Primm, Curators' Professor Emeritus*
Ph.D., University of Missouri-Columbia

James H. Rounds, Endowed Professor, Desmond Lee
Professor for Museum and Community History Studies,
Ph.D., University of California, Los Angeles

Steven W. Rowan, Professor*
Ph.D., Harvard University

Arthur H. Shaffer, Professor*; Education Coordinator
Ph.D., University of California-Los Angeles

Blanche M. Touhill, Professor*; Chancellor
Ph.D., St. Louis University

Robert Archibald, Associate Professor*; President,
Missouri Historical Society
Ph.D., University of New Mexico

J. Frederick Fausz, Associate Professor*
Ph.D., William and Mary

Winston Hsieh, Associate Professor*
Ph.D., Harvard University

Andrew J. Hurley, Associate Professor*
Ph.D., Northwestern University

Adell Patton Jr., Associate Professor*
Ph.D., University of Wisconsin

Gerda W. Ray, Associate Professor*
Ph.D., University of California-Berkeley

Richard W. Resh, Associate Professor*
Ph.D., University of Wisconsin

John A. Works, Jr., Associate Professor*;
Undergraduate Coordinator
Ph.D., University of Wisconsin

Priscilla Dowden, Assistant Professor*
Ph.D., Indiana-Bloomington

Leslie Brown, Assistant Professor
Ph.D., Duke University

Louise B. Robbert, Adjunct Professor*
Ph.D., University of Wisconsin

Suzanne H. Burkholder, Adjunct Assistant Professor*
Ph.D., University of California-San Diego

Eric Sandweiss, Adjunct Assistant Professor
Ph.D., University of California-Berkeley

*members of Graduate Faculty

General Information

The study of history, in addition to providing background for other subjects and disciplines, is an essential part of a liberal arts education. It encourages students to develop self-knowledge and helps them to understand people of widely disparate backgrounds and periods. The history department offers instruction in a wide variety of fields and formats at all levels, and the program is organized to serve as an introduction to the discipline of history.

Degrees and Areas of Concentration The department offers work in Asian, African, European, Latin American, Middle Eastern, 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 School of Education, the B.A. in history with teacher certification and the B.S. in education with an emphasis in social studies.

At the graduate level, the department offers an M.A. in history with work in European, Latin American, East Asian, Middle Eastern, African, African-American, and United States history. The department also offers the option of an M.A. in History (Historical Agencies) with a concentration in Museum Studies.

Departmental Honors

Students majoring in history may be awarded departmental honors upon graduation if they have achieved the following: a) at least a 3.2 overall GPA; b) at least a 3.5 GPA for all hours attempted in history courses; and c) an outstanding research paper in the Senior Seminar as certified by the faculty member responsible for directing it.

Undergraduate Studies

General Education Requirements

History majors must meet the University and College general education requirements. History courses that will satisfy the University's state requirement are:

History 3, American Civilization

History 4, American Civilization

History 5, American Biography

History 6, African-American History

History 7, The History of Women in the United States

History 207, The History of Missouri

History 302, United States History: Revolution and the New Nation, 1763 to 1815

History 311, 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 five credit hours must complete a seminar paper.

History

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 1 to 199.

History 3, American Civilization

History 4, American Civilization

History 5, American Biography

History 6, African-American History

History 7, The History of Women in the United States

Plus two of the following:

History 30, The Ancient World

History 31, Topics in European Civilization: The Emergence of Western Europe to 1715

History 32, Topics in European Civilization: 1715 to the Present

Plus:

Non-Euro/American survey: One three-hour course

Courses 201 to 399.

One course in **United States history**

One course in **European history**

One course in **Non-Euro-American history**

History 393, Senior Seminar

Three additional 200 or 300-level courses

Other

38-hour minimum/45 maximum; No grade below C in major; Courses 255 and 256 do not count toward major. After fulfilling the general education and specific major degree requirements, students are to take the remaining 31 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 areas or their university-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 minimum of fourteen hours of 300 level history courses in residence. One course must be 393, Senior Seminar (5.0 credit hrs.)

Minor in History

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

- 1) One course numbered 1-199 in each of the following areas: United States history, European history, and Non-Euro-American history
- 2) One course numbered 201-399, except 255 and 256 in each of the following areas: United States history, European history, and Non-Euro-American history

No course in which a grade below a "C" is received shall count toward a minor.

Related Areas

Since history is a broad discipline, it can be combined with serious work in any other discipline. Courses in the humanities, social sciences, languages, and the natural sciences may complement the history program.

Students should consult with faculty advisers to select courses suited to their individual interests.

Bachelor of Arts with Teacher Certification For information, refer to the School 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 School of Education general education requirements rather than those of the College of Arts and Sciences. For information, refer to the School of Education section in this *Bulletin*.

Graduate Studies

Degree Requirements

Master of Arts in History

The Department of History offers students two ways of completing the Master of Arts degree: one path of study emphasizes depth of knowledge and research competence acquired through writing a substantial master's thesis; the second emphasizes breadth of historical knowledge acquired through graduate course work and the writing of research papers. Both paths include a core of substantive courses in history (see "Core") to which the student adds either a thesis (see "Thesis") or additional research papers and seminars (see "Research Papers").

The M.A. program offers all students intermediate training preparatory to doctoral programs, advanced training leading to teaching and other careers, and disciplined advanced work.

The department offers study in European history, United States history, East Asian history, Latin American history, and African and Middle Eastern history. Within these general areas of study, students may specialize in the following fields:

- Europe to 1715
- Europe since 1715
- Latin America
- China and Japan since 1800
- United States to 1865
- United States since 1865
- Africa and the Middle East

History

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 sample may or may not be academic work, and length is not a consideration. Applicants must take the Graduate Record Examination (GRE) Aptitude Test; the Advanced Test is optional. The departmental Graduate Committee bases its admission decisions upon the undergraduate transcript, the letters of recommendation, the sample of written work, and the GRE scores.

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 300 level (except History 393). This 26-hour core must include seven courses at three credit hours each (21 hours in all), and one five-credit-hour writing seminar (consisting of a two-credit-hour research paper supplement to a three-credit-hour, 400-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 three credit hours or more), the second and third with a minimum of two courses each (at three credit hours or more). Each field must include at least one 400-level course.

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 six hours of thesis credit and submit an acceptable thesis. The thesis is based on original research in primary sources. Normally, theses do not exceed 100 pages of text. Candidates receive a grade for the thesis upon its approval by an advisory committee. The committee consists of professors selected by the candidate after consultation with the major professor. One member of the committee must be outside the candidate's general area of study, and one may be outside the history department.

The advisory committee conducts an oral examination on the thesis during the candidate's last semester of residence. The committee decides whether the candidate shall pass, fail, or fail with the option to repeat the oral examination at a later date. Students may not take the oral examination more than twice. The second examination must be held no less than one and no more than two semesters following the date of the first examination. Summer session may be counted as a semester under this procedure, but students should be aware of the difficulties involved in assembling faculty committees during the summer.

Thesis candidates must demonstrate competence in one foreign language or in quantitative methods as applied to historical study. Candidates may demonstrate foreign language competence by satisfactory performance on a GSFLT examination or by other means approved by the department Graduate Committee. Candidates may demonstrate quantitative methods competence by satisfactory performance in History 300, Selected Topics in History: Quantitative Methods in Historical Research, or by other means approved by the Graduate Committee.

2) Research Paper Option—36 hours total

To complete this option, the candidate must complete two five-credit-hour seminars (each consisting of a 400-level reading seminar plus two credit hours of supplementary work on a substantial research paper), in addition to the core. The candidate may choose a fourth field in addition to the three already represented in the core to complete this option.

Career Outlook

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 our 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 that are 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, broadening the historian's traditional options of teaching, civil service, and social service.

Writing history accurately is a public service, as well as intellectual exercise. To break off a significant fragment of the human past and examine it closely is an act of social importance; historical research contributes to society's store of useful memory. Writing a history essay or monograph based on primary sources carries with it the stirring experience of firsthand knowledge. One who paints, writes poetry, or carves in stone understands the problems of the masters better than any armchair critic. The writer of history gains a new awareness in understanding it.

History

Course Descriptions

Students enrolled in variable credit reading courses for five credit hours must complete a seminar paper.

The following courses fulfill the Social Sciences [SS] breadth of study requirements: 3, 4, 5, 6, 7, 30, 31, 32, 61, 62, 71, 72, 81, 82, 83, 84, 91, 201, 203, 207, 210, 211, 212, 220, 241, 242, 243, 244, 252, 262, 300, 301, 302, 303, 304, 305, 306, 311, 312, 313, 314, 315, 316, 317, 318, 320, 321, 323, 324, 330, 331, 332, 333, 334, 335, 336, 337, 341, 342, 343, 345, 347, 348, 349, 351, 352, 353, 354, 355, 358, 361, 362, 371, 372, 380, 381, 382, 385, 386, 390, 393.

The following courses fulfill the Cultural Diversity requirement: 61, 62, 71, 72, 81, 82, 83, 84, 201, 252, 262, 358, 361, 362, 371, 372, 380, 381, 382, 385, 386.

3 American Civilization (3)

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. Course fulfills the state requirement.

4 American Civilization (3)

Continuation of History 3 to the present. Course fulfills the state requirement. Either History 3 or History 4 may be taken separately.

5 American Biography (3)

A survey of United States history utilizing the perspective of biography. Students will study major themes in the history of the United States by focusing on the lives and experiences of selected individuals. The course fulfills the state requirement.

6 African-American History (3)

A survey of African-American history from the beginning of the European slave trade to the modern Civil Rights era. This course meets the state requirement.

7 The History of Women in the United States (3)

A survey of women's history from the colonial era to the present. The course meets the state requirement.

30 The Ancient World (3)

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.

31 Topics in European Civilization: Emergence of Western Europe to 1715 (3)

Lectures and discussions on the development of Western European society and tradition from approximately 800 to 1715.

32 Topics in European Civilization: 1715 to the Present (3)

Lectures and discussions on the development of Western European society and tradition from 1715 to the present. Either History 31 or History 32 may be taken separately.

61 East Asian Civilization (3)

The development of Asian civilization from earliest times to the Manchu conquest. This course fulfills the Cultural Diversity requirement.

62 East Asian Civilization (3)

Continuation of History 61 with emphasis on the Asian response to the Western incursion. Either History 61 or History 62 may be taken separately. This course fulfills the Cultural Diversity requirement.

71 Latin American Civilization (3)

A survey of selected topics important in the development of Latin America from pre-Columbian times to the twentieth century. This course fulfills the Cultural Diversity requirement.

72 Mexican Civilization (3)

This course will focus on the history and culture of Mexico from the Aztecs to the mid-twentieth century. Among the topics to be covered are: the Aztecs, Cortés and the Conquest of Mexico, colonial institutions and culture, the obtaining of political independence, disorder and dictatorship in the nineteenth century, the Mexican Revolution, contemporary Mexico. This course fulfills the Cultural Diversity requirement.

81 African Civilization to 1800 (3)

Introduction to African cultural history from the emergence of early man to the abolition of the Atlantic slave trade. This course fulfills the Cultural Diversity requirement.

82 African Civilization Since 1800 (3)

Survey of African initiative and response in the period spanning the loss and reassertion of independence. History 81 or History 82 may be taken separately. This course fulfills the Cultural Diversity requirement.

83 The African Diaspora to 1800 (3)

An examination of the major developments which have shaped the history of Africans and their descendants in the Atlantic, Mediterranean, and Indian Ocean areas from the earliest times to 1800. The course will survey the political, social, and religious foundations of the African continent and include a comparative analysis of other diasporas. Special attention will be given to themes and issues associated with: slavery, creolization, multi-racialism, transformation from heterogeneous crowds to new homogeneous communities, and cultural linkages between Africans and their descendants in the Atlantic Communities. This course satisfies the Cultural Diversity requirement.

History

84 The African Diaspora Since 1800 (3)

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, multi-racialism, 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. This course satisfies the Cultural Diversity requirement.

87 Women in the Ancient World (3)

Surveys the roles and statuses assigned to women in the Ancient Near East, Greece, and Rome to the fall of the Roman Empire in the fifth century A.D. Pays particular attention to extant sources for the study of women in ancient societies including literary and documentary materials and unwritten evidence including archaeological and iconographic sources.

91 The Rise of Modern Judaism (3)

Introduction to the historical development of modern day Judaism and the Jewish people. Subjects will include the genesis of the major movements in Jewish life, the destruction of European Judaism, Zionism and the birth and growth of Israel. Substantial attention will be given to the flowering of American Judaism and its significant role in defining the rise of Modern Judaism.

201 History of Women in Comparative Cultures (3)

Prerequisite: Junior standing or the consent of the instructor. 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. This course fulfills the Cultural Diversity requirement.

203 U.S. Social Movements in the 20th Century

Prerequisite: Junior standing or the consent of the instructor. This course challenges students to analyze the historical sources, objectives, and techniques of social movements initiated by racial minorities, women, gays and lesbians, evangelical Christians, and many others.

207 History of Missouri (3)

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. Course satisfies the state requirement.

209 History of American Conservatism (3)

Prerequisite: History 3 or 4. Examines the core of conservative thought from eighteenth-century America to the present. Will analyze the texts of Federalists, Jacksonians, the Gilded Age, Progressivism, anti-New Dealers, and the modern period. Writers from James Madison through William F. Buckley will be included.

210 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.

211 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.

212 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.

219 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 and 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.

220 History of Feminism in Western Society (3)

Prerequisite: Junior standing or the consent of the instructor. History of feminist movement and feminist thought on status of women, family, work, and sexuality in the United States, Great Britain, Western Europe, and Russia, as well as the relationship between feminist theory and the feminist movement.

History

241 European Social History to 1715

Prerequisite: Junior standing or the consent of the instructor. This is a survey course that examines the life of ordinary people in late medieval and early modern Europe. It begins with an analysis of economic conditions and the social relationships that derive from them, but 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 and drink, clothing and housing, leisure and entertainment, and popular attitudes.

242 European Social History Since 1715

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.

243 Western Legal System to 1800

Prerequisite: Junior standing or the consent of the instructor. An introduction to the development and elaboration of English Common Law and other legal systems (Roman law, canon law, Germanic Customary law) which developed in Western Europe before the period of the Napoleonic codifications and the English Benthamite reforms.

244 War and Society in Pre-Industrial Europe

Prerequisite: Junior standing or the consent of the instructor. The development of early modern warfare from the end of the feudal era to the battle of Waterloo.

252 The World of Islam (3)

Prerequisite: Junior standing or consent of instructor. The development of Islam as a religion and a civilization will be traced from its Arabian origins to its present position as the major religion of Africa and Asia. Special emphasis on the Islamic state, Sufi mysticism, the Shariah and the Muslim confrontation with modernization. This course fulfills the Cultural Diversity requirement.

255 Curriculum and Methods of Teaching Secondary School History and Social Studies (3)

(Same as SEC ED 255.) Prerequisite: Junior standing and Sec Ed 213. 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. Attention is directed also toward learning the techniques and research tools of the scholar in the fields of history and social studies. May not count toward history hours required for history major. Must be completed prior to student teaching. This course must be completed in residence.

256 Social Studies Teaching Intern Seminar (1)

(Same as SEC ED 256.) Prerequisite: Must be enrolled concurrently in student teaching. Addresses the application of educational philosophy, social studies curriculum, teaching strategies, and instructional technology in the classroom setting. Offered concurrently with Secondary School Student Teaching, SEC ED 290.

257 United States History for the Secondary Classroom (3)

Prerequisite: Education 213, Graduate Standing or consent of instructor. (Same as Secondary Education 257.) 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. Either History/Sec Ed 257 or 258 must be taken the same semester as History/Sec Ed 255 except with special consent of the Social Studies Coordinator. Cannot be counted towards the minimum 38-hour history major requirement, but can be counted towards the 45-hour maximum and for Social Studies Certification.

258 World History for the Secondary School Classroom (3)

Prerequisite: Education 213, Graduate standing or consent of instructor. (Same as Secondary Education 258.) 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. Either History/Sec Ed 257 or 258 must be taken the same semester as History/Sec Ed 255 except with special consent of the Social Studies Coordinator. Cannot be counted towards the minimum 38-hour history major requirement, but can be counted towards the 45-hour maximum and for the Social Studies Certification.

262 Modern History of the Pacific Rim

Prerequisite: Junior standing or the consent of the instructor. A survey course on the 20th-century history of the most rapid growth of a broad economic region in East and Southeast Asia as well as their interactions with America. For students who need to understand the political and economic dynamics of the countries around the Pacific Basin and the historical roots of various problems. This course fulfills the Cultural Diversity requirement.

300 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.

History

301 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.

302 United States History: Revolution and the New Nation, 1763 to 1815 (3)

Prerequisite: Junior standing or consent of the instructor. The American Revolution and the creation of the new nation. The young republic and the development of the first American party system. Course fulfills the state requirement.

303 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.

304 United States History: 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.

305 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.

306 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.

311 Topics in American Constitutional History (3)

Prerequisite: Junior standing or consent of instructor. Origins and development of the principal institutions and ideas of the American constitutional system; the role of the Constitution and the Supreme Court in the growth of the nation; important Supreme Court decisions; great American jurists and their impact upon the law; historical background to current constitutional issues. Course fulfills the state requirement.

312 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.

313 American Military History to 1900 (3)

Prerequisite: Junior standing or consent of instructor. A study of American military institutions from colonial times to 1900. The impact of the military upon major aspects of American life. The place of war in American history to 1900.

314 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.

315 History of Women in the United States (3)

Prerequisite: 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.

316 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.

317 Comparative Urban History (3)

Prerequisite: Junior standing or consent of the instructor. Historical overview of urban social problems in comparative perspective with an emphasis on cities in Latin America and the United States.

318 African-American Women's History (3)

Prerequisite: Junior standing or consent of the instructor. This course introduces some of the themes of African-American women's history. By examining the impact of region, gender, and class on African-American women's experiences across time, the course highlights black women's applied and theoretical contributions to feminist politics and activism as well as the black struggle for freedom and equality. Topics covered include: slavery and emancipation, institution and community building, the family and work, electoral politics and direct action protest, civil rights, and contemporary issues.

319 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.

320 History of Crime and Justice (3)

Prerequisite: Junior standing or consent of the instructor. (Same as CCJ 330). 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.

321 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.

History

323 Yorkist and Tudor England (3)

Prerequisite: Junior standing or consent of instructor. The turmoil over the monarchy and consolidation of the Tudor dynasty. A study of the English Reformation and the political and economic changes of the sixteenth century.

324 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.

330 The Ancient Near East(3)

Prerequisite: Junior standing or consent of the instructor. The Bronze age in Mesopotamia and Egypt, Amorite expansion, the Hittite Empire, Arameans, Canaanites, Philistines, Phoenicians and Israelites in Syria-Palestine at the end of the Bronze Age and into the Iron Age, the Kingdom of Israel, the Assyrian and Persian Empires, Egypt in the first millennium B.C. Major themes: politics, economy, religion and culture.

331 The Ancient World: Greece (3)

Prerequisite: Junior standing or consent of the instructor. The Bronze age in the Aegean: Minoans and Mycenaeans: the dark age transition; historical Greek civilization from Homer to Alexander; comparative political forms; Greek colonization; Athens and Sparta; classical Greece and the dispersion of Greek culture to the end of the Hellenistic period.

332 Rome: The Republic (3)

Prerequisite: Junior standing or consent of the instructor. Italy in the first millennium B.C.; Etruscans, Greeks and indigenous Italic people; the legendary royal period ca. 750-500 B.C.; the Republic 509 to 29 B.C. The major focus of this course will concern the political and social transformation of Italy due to the Punic wars of the third century B.C.

333 Rome: The Empire (3)

Prerequisite: Junior standing or consent of the instructor. The Augustan Principate and the creation of a Roman monarchic and imperialistic system extending over the years 29 B.C. to the reign of Justinian, 527-565 A.D. Themes: politics and economy, war, society, ethnicity, gender, culture, religion and philosophy.

334 History of the Church: Early Christianity (3)

Prerequisite: Junior standing or consent of the instructor. Survey of Jewish, Greek, and Roman antecedents, Christian beginnings, and the emergence of Christian traditions, to the council of Nicaea (325 A.D.).

335 History of the Church: The Middle Ages (3)

Prerequisite: Junior standing or consent of the instructor. A topical study of the Christian church in Europe as an autonomous and central institution from the sixth century through the reformation crisis. Special attention will be given to the relations between the church and the secular world, and the contributions of medieval Christianity to the development of European institutions and ideas.

336 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.

337 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.

341 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.

342 The Age of Reformation (3)

Prerequisite: Junior standing or consent of the instructor. Religious, intellectual, political, and socioeconomic developments of the sixteenth century.

343 Absolutism and Revolution: Europe from 1598 to 1715 (3)

Prerequisite: Junior standing or consent of the instructor. Examines how the final stages of the Reformation and the decline of Habsburg hegemony interacted with a series of simultaneous "revolutions" (social, political, scientific, and economic) in the mid-seventeenth century to produce a vibrant, expansionist Europe with Bourbon France as the major power.

345 Europe 1763-1871: Revolution, Reaction, and Reform (3)

Prerequisite: Junior standing or consent of the instructor. This course will examine Europe from the end of the Seven Years' War to the end of the Franco-Prussian war. It includes industrialization and the social and economic responses to it, the causes and course of the French Revolution and its impact on the rest of Europe, the romantic and reactionary aftermath to revolution, the slow and unsteady pace of political, social, and economic reform during the nineteenth century, the significance of the revolutions of 1848, the dawn of the age of nationalism, and the unification of Italy and Germany. The approach will be topical.

History

347 Europe in the Belle Epoque (1870-1914) (3)

Prerequisite: Junior standing or consent of the instructor. This is an advanced course examining European history in the late 19th and early 20th centuries. Special emphasis is placed upon the great powers of that era (Austria-Hungary, Britain, France, Germany, Italy, and Russia) and the European state system in a period of German hegemony. Topics covered include the persistence of monarchy and the old order, the gradual development of democratic institutions, the challenge of socialism and trade unionism, standards of living and the conditions of daily life, the position of women and the development of feminism, the condition of minorities and human rights, European imperialism in Africa and Asia, and the origins of World War One.

348 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.

349 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.

351 Contemporary France: Since 1870 (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.

352 Germany in the Modern Age (3)

Prerequisite: Junior standing or consent of instructor. The course deals with whether or not the Third Reich should be considered the culmination of German history. Problems of national unification, economic development, representative government, and cultural modernism will be considered.

353 Russian History to 1917 (3)

Prerequisite: Junior standing or consent of instructor. This course will emphasize the history of Russia from the Napoleonic Wars to the Revolution of 1917, including social and economic modernization and the development of the bureaucratic state, foreign policy and maintenance of the empire, rise and development of liberal reform and revolutionary movements, and the Revolution of 1917.

354 History of Russia From 1917-Present (3)

Prerequisite: Junior standing or consent of the instructor. The nature and results of the Bolshevik revolution (October 1917). Topics include Lenin as a ruler, War Communism, and NEP; the struggle for power and the triumph of Stalin, 1924-1930; collectivization of agriculture and industrialization; Stalinist foreign policy, the Second World War, and the Cold War; and continuity and change in post-Stalinist Russia.

355 History of Spain (3)

Prerequisite: Junior standing or consent of the instructor. A survey of Spanish history from the fifteenth century to the present, emphasizing its period of imperial greatness and examining the effects of empire on national development.

358 Central Asia, Nationalism, and the Contemporary World (3)

Prerequisite: Junior standing or consent of the instructor. This course provides a broad background for understanding developments leading to the present-day configuration of Central Asia, a cultural and ethnic mosaic that was under Russian and Soviet domination for 130 years. It will analyze changes in Central Asian culture and art, demography, economics, history, language, politics, and related fields in order to examine nation building, identity levels, and potential ethnic and religious conflicts. This course fulfills the Cultural Diversity requirement.

361 Modern Japan: 1850 to Present (3)

Prerequisite: Junior standing or consent of instructor. The economic, social, and political development of modern Japan. This course fulfills the Cultural Diversity requirement.

362 Modern China: 1800 to Present (3)

Prerequisite: Junior standing or consent of instructor. The economic, social, and political development of modern China. This course fulfills the Cultural Diversity requirement.

371 History of Latin America: To 1808 (3)

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. This course satisfies the Cultural Diversity requirement.

372 History of Latin America: Since 1808 (3)

Prerequisite: Junior standing or consent of instructor. Emphasis on the attainment of political independence and social, political, and economic developments of the nineteenth and twentieth centuries in Latin America. This course satisfies the Cultural Diversity requirement.

380 West Africa to 1800 (3)

Prerequisite: Junior standing or consent of instructor. This course discusses both the history and historiography of Africa's most populous and ethnically diverse region. Beginning with the prehistoric era prior to the desiccation of the Sahara, the course explores climatology and population movement, changes in food production and technology, state formation, the spread of Islam, cultural and political diversity in the forest region, domestic slavery, the Atlantic slave trade and abolition. This course fulfills the Cultural Diversity requirement.

381 West Africa Since 1800 (3)

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 postindependence development. This course fulfills the Cultural Diversity requirement.

History

382 History of Southern Africa (3)

Prerequisite: Junior standing or consent of instructor. Historical roots of apartheid and black nationalism in South Africa and Rhodesia/Zimbabwe. Foundation of white African societies, Khoisan resistance, the Mfecane and African state formation, the mineral revolution, colonialism versus autonomy, and the current confrontation of rival ideologies. This course fulfills the Cultural Diversity requirement.

385 Africa Diaspora to 1800 (3)

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, multi-racialism, 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. This course fulfills the Cultural Diversity requirement.

386 African Diaspora Since 1800 (3)

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. This course fulfills the Cultural Diversity requirement.

390 Special Readings (1-10)

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

393 Senior Seminar (5)

Prerequisite: Consent of department. Studies in historical methodology and historiography. Directed readings, research, and writing leading to the production of an original piece of historical scholarship. Required for all history majors. May not be taken for graduate credit.

400 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.

405 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.

407 Readings in African-American History (3-5)

Prerequisite: Graduate standing and consent of instructor. Directed readings and writings on selected topics and areas in African-American history.

410 Readings in European History to 1715 (3 or 5)

Prerequisite: Graduate standing and consent of instructor. Directed readings and writing on selected topics and areas in European history to 1715.

415 Readings in European History Since 1715 (3 or 5)

Prerequisite: Graduate standing and consent of instructor. Directed readings and writing on selected topics and areas in European history since 1715.

420 Readings in East Asian History (3 or 5)

Prerequisite: Graduate standing and consent of instructor. Directed readings and writing on selected topics and areas in East Asian history.

425 Readings in Latin American History (3 or 5)

Prerequisite: Graduate standing and consent of instructor. Directed readings and writing on selected topics and areas in Latin American history.

430 Readings in African History (3 or 5)

Prerequisite: Graduate standing and consent of instructor. Directed readings and writing on selected topics and areas in African history.

435 Foundations of Museology I (3)

Prerequisite: Consent of Director of Museum Studies Program. (Same as Art 435 and Anthropology 435.) 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.

436 Foundations of Museology II (3)

Prerequisite: History 435 and consent of Director of Museum Studies Program. (Same as Art 436 and Anthropology 436.) 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.

437 Effective Action in Museums (3)

Prerequisite: Consent of Director of Museum Studies Program. (Same as Art 437 and Anthropology 437.) 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.

438 Museum Studies Master's Project (4)

Prerequisite: Consent of Director of Museum Studies Program. (Same as Art 438 and Anthropology 438.) Research and writing/exhibit development on a selected topic.

History

440 United States History for the Secondary Classroom (3-6)

Prerequisite: Graduate standing or consent of instructor. The intent of this course is to adapt the themes and subject matter of American history to the secondary classroom and to train teachers in the methodology of Socratic symposium, techniques particularly designed to maximize the use of sources, foster critical inquiry, and encourage knowledge of subject matter. Particular emphasis will be placed on defining the broad and connecting themes of American history, on expanding bibliography and on methods for choosing primary sources for use in an interactive classroom. History 440 may not be used to meet History degree requirement.

441 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. History 441 may not be used to meet History degree requirement.

448 Thesis Seminar (2-6)

Prerequisite: Graduate standing and consent of instructor. Thesis research and writing on a selected topic in history.

449 Directed Readings (1-3)

Prerequisite: Consent of a member of the doctoral faculty. Directed research at the graduate level.

450 Doctoral Proseminar in American History to 1865 (3)

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

451 Doctoral Research Seminar in American History to 1865 (3)

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

455 Doctoral Proseminar in American History Since 1865 (3)

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

456 Doctoral Research Seminar in American History Since 1865 (3)

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

460 Doctoral Proseminar in European History to 1715 (3)

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

461 Doctoral Research Seminar in European History to 1715 (3)

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

465 Doctoral Proseminar in European History Since 1715 (3)

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

466 Doctoral Research Seminar in European History Since 1715 (3)

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

470 Doctoral Proseminar in East Asian History (3)

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

471 Doctoral Research Seminar in East Asian History (3)

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

475 Doctoral Proseminar in Latin American History (3)

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

476 Doctoral Research Seminar in Latin American History (3)

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

480 Doctoral Proseminar in African History (3)

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

481 Doctoral Research Seminar in African History (3)

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

491 Dissertation Research (1-18)

Prerequisite: Completion of the doctoral qualifying examination. Dissertation research and writing on a selected topic in history.

492 Doctoral Presentation Seminar (1-3)

Prerequisite: Previous enrollment in History 491 and consent of department. Discussion and presentation of research in progress for the doctoral dissertation. Normally taken in the final year.

499 Directed Readings for Doctoral Students (1-6)

Prerequisite: Consent of a member of the doctoral faculty. Directed research at the doctoral level.

Mathematics and Computer Science

Faculty

Raymond Balbes, Professor*; Chairperson
Ph.D., University of California, Los Angeles

Edward Z. Andalafte, Professor*
Ph.D., University of Missouri-Columbia

William Connert, Professor*
Ph.D., University of Chicago

Richard Friedlander, Professor*; Associate
Chairperson;
Ph.D., University of California, Los Angeles

Deborah Tepper Haimo, Professor Emeritus*
Ph.D., Harvard University

Wayne L. McDaniel, Professor*
Ph.D., St. Louis University

A Prabhakar Rao, Professor*
Ph.D., University of California, Berkeley

Alan L. Schwartz, Professor*
Ph.D., University of Wisconsin-Madison

Stephen Selesnick, Professor*
Ph.D., University of London

Jerrold Siegel, Professor*
Ph.D., Cornell University

Grant V. Welland, Professor*
Ph.D., Purdue University

Chal Benson, Associate Professor*
Ph.D., Yale University

Sanjiv K. Bhatia, Associate Professor*
Ph.D., University of Nebraska-Lincoln

Haiyan Cai, Associate Professor*
Ph.D., University of Maryland

Ronald Dotzel, Associate Professor*
Ph.D., Rutgers University

Cezary Janikow, Associate Professor*
Ph.D., University of North Carolina at Chapel Hill

Gail Ratcliff, Associate Professor*
Ph.D., Yale University

Frederick Wilke, Associate Professor Emeritus*
Ph.D., University of Missouri-Columbia

Shiying Zhao, Associate Professor
Ph.D., University of South Carolina

Kyungho Oh, Assistant Professor*
Ph.D., Purdue University

W.L. Golik, Research Fellow
Ph.D., New Mexico State University

John Antognoli, Senior Lecturer; Coordinator of
Evening Program
M.A., University of Missouri-St. Louis

Dorothy Gotway, Lecturer
M.A., University of Kansas-Lawrence

Marlene Gustafson, Senior Lecturer
M.A., Western Reserve University

Mary Kay McKenzie, Lecturer
M.S., St. Louis University

Mark Nugent, Senior Lecturer
M.S., St. Louis University

Shahla Peterman, Senior Lecturer
M.S., University of Wisconsin-Madison

Gillian Raw, Senior Lecturer
M.A., Washington University

Paul Schneider, Senior Lecturer
M.A., St. Louis University

*members of Graduate Faculty

General Information

Degrees and Areas of Concentration

The Department of Mathematics and Computer Science offers work leading to the B.A. in mathematics, the B.S. in applied mathematics, the B.S. in computer science, and in cooperation with the School of Education, the B.S. in secondary education with a major in mathematics. The applied mathematics program has three emphasis areas: statistics, classical applied mathematics, and computational mathematics.

The department also offers minors in computer science, mathematics, and statistics.

The program leading to the B.A. in mathematics is flexible, providing a broad introduction to the important branches of mathematics but giving students the depth necessary to pursue graduate study successfully. The B.S. in applied mathematics and the B.S. in computer science provide a solid foundation for the student interested in applications of mathematics, including computer-related mathematics. The B.S. in secondary education introduces students to those branches of mathematics most relevant to teaching secondary-school mathematics.

The Department of Mathematics and Computer Science also offers a Master's of Arts (M.A.) degree emphasizing a concentration in either pure or applied mathematics and a Ph.D. in Applied Mathematics. Degrees at the master's level can be used to enhance a student's understanding of pure mathematics and are well-suited for preparation for teaching at the high school level, junior college level, or four-year liberal arts college level. Those who concentrate on applied courses at the M.A. level build a foundation for the application of mathematics in industry and business and the continuation of their education at the Ph.D. level in Applied Mathematics.

Mathematical Sciences Alumni Scholarship

The Mathematical Sciences Alumni Scholarship is a monetary award for an outstanding junior or senior majoring in mathematical sciences, as evidenced by a grade point average of 3.5 or higher in at least 24 graded hours of course work at the University of Missouri-St. Louis and superior achievement in courses in mathematical sciences. Application forms may be obtained from the Department of Mathematics and Computer Science. The deadline for application is March 15.

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.

After fulfilling the general education and specific major degree requirements, students are to take the

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remaining hours required to complete the B.A. or B.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: criminology and criminal justice, anthropology/archaeology, art (appreciation, history, studio), astronomy, biology, chemistry, communication, economics, English, foreign languages/literature, geology, history, mathematics/computer science, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, business, education, engineering, and interdisciplinary.

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 250 or above must be taken in residence. Students must have a 2.0 grade point average in the mathematical sciences courses completed.

Students enrolling in introductory mathematics courses should check the prerequisites to determine if a satisfactory score on the Mathematics Placement Test is necessary. The dates on which this test is administered are given in the Schedule of Classes. Placement into introductory courses assumes a mastery of two years of high school algebra.

A minimum grade of C- shall be 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.

Bachelor of Arts in Mathematics and Bachelor of Science in Education majoring in Secondary Education with Emphasis in Mathematics

Candidates for either the B.A. degree or the B.S. in education are required to complete the following course work:

1) All of the following mathematics courses:

80, Analytic Geometry and Calculus I
175, Analytic Geometry and Calculus II
180, Analytic Geometry and Calculus III
202, Introduction to Differential Equations
245, Elementary Linear Algebra
250, Introduction to Modern Mathematics

2) Probability and Statistics 132, Applied Statistics I

3) Five courses from at least three of the following blocks.

Analysis and Topology
310, Advanced Calculus I
311, Advanced Calculus II

316, Functions of a Complex Variable
380, Introduction to Topology

Algebra

335, Theory of Numbers
340, Introduction to Abstract Algebra I
341, Introduction to Abstract Algebra II
345, Linear Algebra

Applications

303, Applied Mathematics I
306, Applied Differential Equations
320, Mathematical Statistics I
321, Mathematical Statistics II
323, Numerical Analysis I
324, Numerical Analysis II
327, The Calculus of Variations
355, Discrete Mathematics

Geometry and Logic

(B.S. in secondary education majors must complete 366 or 367.)

358, Mathematical Logic
362, Projective Geometry
364, Introduction to Differential Geometry
366, Foundations of Geometry
367, Introduction to Non-Euclidean Geometry

One of the following computer science courses is required:

Computer Science 122, Computers and Programming
or Computer Science 125, Introduction to Computer Science

Bachelor of Science in Applied Mathematics

The following course work is required:

1) Mathematics

80, Analytic Geometry and Calculus I
175, Analytic Geometry and Calculus II
180, Analytic Geometry and Calculus III
202, Introduction to Differential Equations
245, Elementary Linear Algebra
250, Introduction to Modern Mathematics
345, Linear Algebra
310, Advanced Calculus I, or
340, Introduction to Abstract Algebra I

2) Probability and Statistics 132, Applied Statistics I

3) All the courses in option a, b, or c:

a) Classical Applied Mathematics Option

The following courses in mathematics are required:
303, Applied Mathematics I
316, Functions of a Complex Variable
320, Mathematical Statistics I
323, Numerical Analysis I

One of the following computer science courses is required:

CS 122, Computers and Programming, or
CS 125, Introduction to Computer Science.

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Also required are two additional courses in mathematical sciences, numbered above 250, as well as Physics 111, Physics: Mechanics and Heat, and Physics 112, Physics: Electricity, Magnetism, and Optics.

b) Probability and Statistics Option

The following courses in probability and statistics are required:

- 232, Applied Statistics II
- 320, Mathematical Statistics I
- 321, Mathematical Statistics II
- 330, Multivariate Analysis
- 333, Nonparametric Methods in Statistics

Also required are the following computer science courses:

- 125, Introduction to Computer Science
- 225, Data Structures and Problem Solving

Two related courses should be chosen with the approval of the adviser.

c) Computational Mathematics Option

The following courses in mathematics and computer science are required:

- 125, Introduction to Computer Science
- 225, Data Structures and Problem Solving
- 313, Analysis of Algorithms
- 323, Numerical Analysis I
- 324, Numerical Analysis II
- 355, Discrete Mathematics

Also required are three additional courses numbered above 250, one of which must be in computer science, and two in mathematics.

Bachelor of Science in Computer Science

The following course work is required:

1) Mathematics

- 80, Analytic Geometry and Calculus I
- 175, Analytic Geometry and Calculus II
- 180, Analytic Geometry and Calculus III
- 202, Introduction to Differential Equations
- 245, Elementary Linear Algebra
- 250, Introduction to Modern Mathematics

Also required is one of the following:

- 320, Mathematical Statistics I
- 323, Numerical Analysis I
- 355, Discrete Mathematics

2) Computer Science

- 125, Introduction to Computer Science
- 225, Data Structures and Problem Solving
- 240, Computer Hardware and Small Computer Systems I
- 241, Computer Hardware and Small Computer Systems II
- 275, Advanced Programming Techniques in C
- 313, Analysis of Algorithms
- 328, Programming Languages and Compiling Techniques
- 376, Operating Systems

3) Probability and Statistics

132, Applied Statistics I

4) Three further courses in mathematical sciences, numbered above 250, at least one of which must be in computer science. Computer Science 272, Programming Languages Laboratory, may be counted as one of these three courses only if three or more hours of credit are obtained in the course.

Related Area Requirements

In order to broaden student understanding of the sources and uses of mathematics, the department requires all candidates for the B.A. in mathematics, B.S. in education, B.S. in applied mathematics, and B.S. in computer science to complete all courses in any two of the groups below with a grade of C- or better.

Restrictions Students are reminded that related area requirements may not be taken on a satisfactory/unsatisfactory basis. Students in either the computer science degree program or the statistics or computational mathematics emphasis areas for the applied mathematics degree program may not choose group 5; students in the classical applied math emphasis area may not choose group 8. Candidates for the B.S. in applied mathematics and the B.S. in computer science who choose group 9 must satisfy group 9 requirements with Physics 221, Mechanics, and Physics 223, Electricity and Magnetism. Students in the computational mathematics emphasis area for the applied mathematics degree are strongly encouraged to choose group 8 as one of their related areas.

Related Area Courses

1) Biology:

- 220, General Ecology
- 222, General Ecology Laboratory

2) Biology:

- 224, Genetics
- 342, Population Biology

3) Chemistry:

- 11, Introductory Chemistry I
- 12, Introductory Chemistry II

4) Chemistry:

- 231, Physical Chemistry I
- and another 200-level, or above, chemistry course.

5) Computer Science

- 225, Data Structures and Problem Solving, and one of either
- 240, Computer Hardware and Small Computer Systems I, or
- 313, Analysis of Algorithms.

6) Economics:

- 365, Introduction to Econometrics, and one of either:
- 366, Applied Econometrics, or
- 367 Econometric and Time Series Forecasting

7) Philosophy:

- 160, Formal Logic
- 260, Advanced Formal Logic
- 280, Philosophy of Science

8) Physics:

- 111, Physics: Mechanics and Heat
- 112, Physics: Electricity, Magnetism, and Optics

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9) Physics:

221, Mechanics
and another 200-level, or above, physics course

10) Business Administration:

375, Operations Research and one of the following:
308, Production and Operations Management
329, Business Forecasting
385, Operations Research II
483, Production and Operations Management (with consent of the School of Business Administration)
487, Advanced Operations Research Applications (with consent of the School of Business Administration)

11) Engineering:

144, Statics
145, Dynamics

Many students are qualified, as a result of having studied calculus in high school, to begin their major with Math 175, Analytic Geometry and Calculus II, or Math 180, Analytic Geometry and Calculus III. These students are urged to consult with the department before planning their programs. Credit for Mathematics 80, Analytic Geometry and Calculus I, will be granted to those students who complete Mathematics 175 with a grade of C- or better.

Similarly, students who are ready to begin their computer science studies with Computer Science 225, Data Structures and Problem Solving, will be granted credit for Computer Science 125, Introduction to Computer Science, once they complete Computer Science 225 with a grade of C- or better.

Students preparing for graduate study should take eight or nine mathematics courses at the junior-senior level. The department recommends the following mathematics courses:

310, Advanced Calculus I
316, Functions of a Complex Variable
340, Introduction to Abstract Algebra I
345, Linear Algebra
380, Introduction to Topology

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:
125, Introduction to Computer Science
225, Data Structures and Problem Solving
240, Computer Hardware and Small Computer Systems I

Two additional courses in Computer Science numbered above 240. At least one of these must be either Computer Science 241, Computer Hardware and Small Computer Systems II, or Computer Science 313, Analysis of Algorithms. Computer Science 272, Programming Languages Laboratory, may be counted as one of these courses only if three or more hours of credit are obtained in this course. A minimum of two computer science courses numbered above 240 must be taken in residence in the Department of

Mathematics and Computer Science at UM-St. Louis.

Minor in Mathematics

The requirements for the minor are:
80, Analytic Geometry and Calculus I
175, Analytic Geometry and Calculus II
180, Analytic Geometry and Calculus III

and one additional three-hour mathematics course numbered above 180. A minimum of two mathematics courses numbered 180 or above must be taken in residence in the Department of Mathematics and Computer Science at UM-St. Louis.

Minor in Statistics

The requirements for the minor are:
132, Applied Statistics I
232, Applied Statistics II
320, Mathematical Statistics I
321, Mathematical Statistics II

A minimum of two statistics courses numbered above 200 must be taken in residence in the Department of Mathematics and Computer Science at UM-St. Louis.

Graduate Studies

The Department of Mathematics and Computer Science offers an M.A. degree in Mathematics and a Ph.D. degree in Applied Mathematics. Candidates for the M.A. degree may choose to concentrate in either **pure** or **applied** mathematics. Individuals may apply for direct admission to either the M.A. or Ph.D. program. In addition, 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.

Admission

Applicants should 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. In addition to meeting the general admission requirements of the Graduate School, described elsewhere in this *Bulletin*, an applicant's record should demonstrate superior achievement in undergraduate mathematics. Additionally, 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 to the M.A. program must submit their academic transcripts. Foreign applicants whose native language is not English and who have spent less than two of the last three years in an English speaking country are required to submit TOEFL scores. Applicants to the Ph.D. program must, in addition, submit three letters of reference and scores from the Graduate Record Exam (GRE) general aptitude test and the subject test in mathematics. Applicants who did not major in mathematics may substitute the subject test in another field.

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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 coursework without receiving graduate credit.

Degree Requirements

Master of Arts in Mathematics

Candidates for the M.A. degree must complete 33 hours of coursework. All courses numbered below 400 must be completed with grades of at least "B-". The courses taken must include those listed below in either group (A) or group (B), together with additional courses discussed in (C). Students who have already completed courses equivalent to those in (A) or (B) may substitute other courses numbered above 300. All substitutions of courses for those listed in (A) or (B) require the prior approval of the Graduate Director.

(A) Pure mathematics core:

310, Advanced Calculus
316, Functions of a Complex Variable
340, Introduction to Abstract Algebra I
345, Linear Algebra
380, Introduction to Topology

(B) Applied mathematics core:

310, Advanced Calculus
316, Functions of a Complex Variable
320, Mathematical Statistics
323, Numerical Analysis I
345, Linear Algebra

© M.A. candidates must also complete eighteen hours of coursework numbered 400 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 © 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 six hours of Math 490, 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.

M.A. degree students may have several of the courses in (B) as part of their undergraduate record. Those who anticipate enrolling in the Ph.D. program are advised to use the opportunity to replace courses in (B) they have had at the undergraduate level with courses such as

311, Advanced Calculus II
380, Introduction to Topology and if possible
331, Analysis of Variance and Design of Experiments
340, Introduction to Abstract Algebra I
364, Introduction to Differential Geometry

Doctor of Philosophy in Applied Mathematics

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 300 or above. At least 33 hours must be in courses numbered 400 or above. All courses numbered below 400 must be completed with a grade of at least "B-". In addition to course work, all Ph.D. students are expected to attend and participate in applied mathematics seminars.

Distribution Requirement

Among the courses presented for the degree there must be two courses from each of three of the following groups:

I. Analysis and Applied Mathematics

402, Classical Applied Mathematics
403, Topics in Applied Mathematics
410, Theory of Functions of a Real Variable
416, Functions of a Complex Variable
418, Topics in Analysis
430, Partial Differential Equations

II. Numerical Analysis

404, Topics in Computation
423, Topics in Numerical Analysis
427, Numerical Linear Algebra

III. Optimization and Operations Research

435, Operations Research - Deterministic Models
436, Operations Research - Stochastic Models
437, Quality Management
460, Calculus of Variations

IV. Probability and Statistics

420, Probability Theory
428, Topics in Probability Theory
432, Applied Statistics

2. Advancement to Ph.D. Candidacy

Advancement to Ph.D. Candidacy is a four-step process consisting of:

- (A) Completing distribution requirement,
- (B) Passing the comprehensive examinations,
- © Selecting a Ph.D. Committee and preparing a dissertation proposal, and
- (D) Defending the dissertation proposal.

Comprehensive Examinations

Comprehensive examinations are offered in the following eight areas:

Applied Mathematics
Real Analysis
Complex Analysis
Numerical Analysis
Optimization
Operations Research
Probability
Statistics

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The examinations are given on a rotating basis through the academic year; more detailed information on the individual examinations can be found in the Department of Mathematics and Computer Science Graduate Student Handbook. Each student must pass five comprehensive examinations. Students must apply to take each examination at least 45 days before the first day of the month in which the examination is offered. A student may attempt a particular comprehensive examination no more than two times; the second attempt must be within 13 months of the first attempt.

Selection of a Ph.D. Committee and preparation of a dissertation proposal.

The student is required to identify a dissertation advisor and an area of specialization for the dissertation. The area of specialization can be in a discipline complementary to mathematics. Usually, students select an advisor from contacts made through course work or in the seminar series. The advisor and student will then form a Ph. D. Committee which may include faculty from other departments at UM-St. Louis. The Committee advises the student on course work and research.

Each student must prepare a dissertation proposal. This is a substantial document describing the problem to be worked on and the methods to be used. It should also demonstrate the student's proficiency in written communication. The proposal is to be submitted to the Ph.D. Committee for approval.

Dissertation Proposal Defense. If the Ph.D. Committee finds the student's dissertation proposal acceptable, a defense is scheduled. This is a public event in which the student demonstrates mastery of the necessary skills to begin research.

3. Dissertation and Dissertation Defense

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 499, Ph.D. Dissertation Research; a maximum of nine hours in Math 499 can be used toward the required hours of work in courses numbered 400 or above.

Financial Assistance

Financial support is available to full-time graduate students in the form of teaching and research assistantships. These are awarded on a competitive basis. For further information, contact the chair of the Department of Mathematics and Computer Science.

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, in computer science, and in 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.

Mathematics and Computer Science

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. Placement into introductory courses assumes a mastery of two years of high school algebra.

A minimum grade of C- shall be required to meet the prerequisite requirement for any course except with permission of the department.

The following courses fulfill the Natural Sciences and Mathematics [SM] breadth of study requirements: MATHEMATICS: 20, 30, 35, 50*, 70, 80, 100, 102, 105, 151*, 175, 180, 202, 203, 245, 250, 303, 304, 306, 310, 311, 316, 323, 324, 327, 335, 340, 341, 345, 350, 355, 358, 362, 364, 366, 367, 380, 389. COMPUTER SCIENCE: 22, 122, 125, 225, 240, 241, 272, 273, 275, 313, 328, 332, 334, 368, 370, 371, 373, 376, 379. PROBABILITY AND STATISTICS: 31, 132, 232, 320, 321, 326, 330, 331, 333, 339.

*Mathematics 50 and 151 fulfill this requirement only for students seeking the B.S. in Education degree in Early Childhood Education, Elementary Education, and Special Education

Mathematics

20 Contemporary Mathematics

Prerequisites: A grade of A or B in high school algebra II, or a grade of C or better in a two or four year college intermediate algebra course, or a satisfactory score on the mathematics placement examination. This course presents methods of problem solving, centering around problems and questions which arise naturally in everyday life. Topics surveyed 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. The course may be taken to meet the mathematical proficiency requirement, but may not be used as a prerequisite for other mathematics courses. It is designed for students who do not plan to take Calculus. Credit will not be granted for Math 20 if credit has been granted for Math 31, 80, 100 or 102. Concurrent enrollment in Math 20 and any of these courses is not permitted. (This course counts toward the [SM] requirement for breadth of study.)

30 College Algebra (3)

Prerequisites: A grade of A or B in high school Algebra II, or a grade of C or better in a two or four year college Intermediate Algebra course, or a satisfactory score on the mathematics placement examination. Topics in algebra and probability, polynomial functions, the binomial theorem, logarithms, exponentials, and solutions to systems of equations.

35 Trigonometry (2)

Prerequisite: Math 30 or concurrent registration. A

study of the trigonometric and inverse trigonometric functions with emphasis on trigonometric identities and equations.

50 Structure of Mathematical Systems I (3)

Prerequisites: 45 hours of college credit and a satisfactory score on the mathematics placement examination. A study of sets, relations, functions, whole numbers, the integers and their properties, and the rational and real number systems. Credit will be granted only toward the B.S. in Education degree in Early Childhood Education, Elementary Education, and Special Education.

70 Applied Mathematics of Interest (2)

Prerequisites: Math 30. An introduction to the role of interest in applied mathematics. Topics include simple and compound interest, mathematics of annuities, amortization bonds, sinking funds, and mortgages.

80 Analytic Geometry and Calculus I (5)

Prerequisites: Math 30 and 35 or four units of high school mathematics covering the equivalent material and a satisfactory score on the algebra-trigonometry placement examination. Introduction to analytic geometry, differential calculus, and integral calculus. Math 80, 175, and 180 form the calculus sequence.

100 Basic Calculus (3)

Prerequisite: Math 30 or a satisfactory score on the mathematics placement 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 80 and 100.

102 Finite Mathematics I (4)

Prerequisite: Same as for Math 100. Introductory logic and set theory, partitions and counting problems, elementary probability theory, stochastic processes, Markov chains, vectors and matrices, linear programming, and game theory.

105 Basic Probability and Statistics (3)

Prerequisites: Math 30 or a satisfactory score on the mathematics placement 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 31, Stat 132 and Math 105.

132 Applied Statistics I

See Statistics 132 in Probability and Statistics section that follows.

151 Structure of Mathematical Systems II (3)

Prerequisite: Math 50. An introduction to probability and statistics. An intuitive study of elementary geometry. Introduction to the deductive theory of geometry and to coordinate geometry. Credit will be granted only toward the B.S. in Education degree in Early Childhood Education, Elementary Education, and Special Education.

175 Analytic Geometry and Calculus II (5)

Prerequisite: Math 80. Selected topics from plane analytic geometry and calculus.

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180 Analytic Geometry and Calculus III (5)

Prerequisite: Math 175. Solid analytic geometry and selected topics in calculus.

202 Introduction to Differential Equations (3)

Prerequisite: Math 180. Topics will be chosen from linear differential equations, equations with constant coefficients, Laplace transforms, power series solutions, systems of ordinary differential equations.

203 Finite Mathematics II (3)

Prerequisite: Math 102. A continuation of Math 102. Linear programming and game theory, application of combinatorial mathematics. A student cannot receive credit for both Math 203 and BA 375.

224 Object Oriented Programming with C++ (3)

Prerequisite: Introductory programming courses with C. This course introduces object-oriented concepts in programming, including classes, encapsulation, polymorphism, and inheritance. The C++ programming language will be explored, including topics such as exception handling, templates, and dynamic allocation.

245 Elementary Linear Algebra (3)

Prerequisites: Math 100 or 175. 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.

250 Introduction to Modern Mathematics (3)

Prerequisite: Math 180. A careful introduction to important ideas in modern mathematics. Topics will include set algebra, equivalence relations, partitions, functions, mathematical induction, cardinality, fundamental theorem of arithmetic, Cauchy sequences, and development of elementary algebraic and completeness properties of the real numbers.

303 Applied Mathematics I (3)

Prerequisites: Math 202 and 245. Topics chosen from Fourier series, special functions, partial differential equations, and boundary value problems.

304 Applied Mathematics II (3)

Prerequisite: Math 303. A continuation of Math 303. Topics will include systems of differential equations and applications.

306 Applied Differential Equations (3)

Prerequisite: Math 202. Series solutions to ordinary differential equations, numerical methods, Laplace transforms, differential systems, stability, applications to physics, engineering, and biology.

310 Advanced Calculus I (3)

Prerequisite: Math 250 or consent of the department. Limits, continuity, and differentiability of functions of one and several variables, sequences and series, and the Riemann-Stieltjes integral.

311 Advanced Calculus II (3)

Prerequisite: Math 310. Continuation of Math 310.

316 Functions of a Complex Variable (3)

Prerequisite: Math 202 or 250. Complex numbers and their geometrical representation, point sets, analytic functions of a complex variable, complex integration, Taylor and Laurent series, residue theorem, conformal mapping.

320 Mathematical Statistics I (3)

See Stat 320 in Probability and Statistics section that follows.

321 Mathematical Statistics II (3)

See Statistics 321 in Probability and Statistics section that follows.

323 Numerical Analysis I (3)

Prerequisites: Math 202, 245, and ability to program in an upper-level language such as FORTRAN. 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.

324 Numerical Analysis II (3)

Prerequisite: Math 323 or consent of instructor. Topics chosen from: the numerical solution of systems of linear equations; the eigenvalue/eigenvector problem; numerical solution of Partial Differential Equations (PDE); numerical solution of stiff Ordinary Differential Equations (ODE); boundary value problems; sparse matrix methods; approximation theory; optimization theory; digital filters; integral equations.

327 The Calculus of Variations (3)

Prerequisites: Math 202 and 310. Methods for optimizing functionals and their application. The Euler-Lagrange condition. Hamilton's principle, two dimensional variational problems, and isoperimetric problems. Approximate methods for the solution of variational problems.

335 Theory of Numbers (3)

Prerequisite: Math 250 or consent of department. Properties of integers, multiplicative functions, congruences, primitive roots, and quadratic residues.

340 Introduction to Abstract Algebra I (3)

Prerequisite: Math 250 or consent of the department. Introduction to groups, rings, and fields, with emphasis on groups and rings.

341 Introduction to Abstract Algebra II (3)

Continuation of Math 340 with emphasis on fields.

345 Linear Algebra (3)

Prerequisites: Math 245 and 250. Topics selected from vector spaces, bases, linear transformations, matrices, canonical forms, eigenvalues, hermitian and unitary matrices, inner product spaces, and quadratic forms.

350 Special Readings (1-10)

Prerequisites: Math 250 and consent of instructor.

355 Discrete Mathematics (3)

Prerequisite: Math 250. General counting methods including the use of binomial coefficients, and generating functions, difference equations, graph theory, and properties of trees. Possible additional topics selected from proof of computer program properties, finite-state machines, grammars, and first-order logic.

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358 Mathematical Logic (3)

Prerequisite: Math 250 or Philosophy 260 or consent of the department. A study of the logic of mathematics by the axiomatic method, with a development of the propositional calculus and restricted predicate calculus emphasizing its application to the foundations of mathematics.

362 Projective Geometry (3)

Prerequisites: Math 245 and 250. Analytic approach to the study of projective spaces. Theorems of Desargues, Pascal, and Brianchon. Projective properties of conics.

364 Introduction to Differential Geometry (3)

Prerequisite: Math 250. Geometry of curves and surfaces in Euclidean three-space. Calculus on a surface. Intrinsic geometry of surfaces.

366 Foundations of Geometry (3)

Prerequisite: Math 250 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.

367 Introduction to Non-Euclidean Geometry (3)

Prerequisite: Math 250 or consent of the department. A summary of the history of the non-Euclidean geometries and a study of hyperbolic plane geometry.

380 Introduction to Topology (3)

Prerequisite: Math 250 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.

389 Topics in Mathematics (3)

Prerequisite: Consent of instructor. A seminar on special topics in mathematics to be determined by the interests of the instructor. May be repeated for credit provided different topics are studied.

401 Theory of Ordinary Differential Equations (3)

Prerequisite: Math 310. A theoretical treatment of ordinary differential equations including the existence and uniqueness of solutions of differential equations and systems of differential equations. The course treats such topics as systems of linear differential equations, eigenvalue problems, autonomous systems, and boundary value problems.

402 Classical Applied Mathematics (3)

Prerequisites: Math 310, 316, and 345 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.

403 Topics in Applied Mathematics (3)

Prerequisite: Consent of instructor. The 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.

404 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.

410 Theory of Functions of a Real Variable (3)

Prerequisites: Math 310 and 380. The real number system, properties of functions of one or more real variables, mapping theorems. Introduction to measure and integration theory.

411 Differentiable Manifolds (3)

Prerequisites: Math 310, 345, and 380. An introduction to smooth manifolds and maps. Topics will include the Implicit Function Theorem, Sard's Theorem, transversality, intersection and degree theory, differential forms and integration on manifolds.

416 Functions of a Complex Variable (3)

Prerequisites: Math 310, 316, and 380. Complex numbers, topology of the complex plane, analytic functions, conformal mappings, Taylor series, Laurent series, complex integration, residues, analytic continuation, representation of analytic functions, elliptic functions, normal families, Riemann theorem, majorization.

418 Topics in Analysis (3)

Prerequisite: Consent of instructor. Topics selected from the areas of Fourier analysis, harmonic analysis, Hilbert spaces, Banach algebras, special functions, generalized functions, partial differential equations. May be taken more than once for credit with consent of department.

420 Probability Theory (3)

Prerequisite: Math 410 (may be taken concurrently). Combinatorial analysis, random walks, stochastic independence, random variables, laws of large numbers, generating functions, and branching processes.

423 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.

427 Numerical Linear Algebra (3)

Prerequisite: Math 323 and Math 345 or consent of the instructor. The course includes solution of general and special linear systems. Techniques include methods (such as splitting or Krylov subspaces). Additional topics are the eigenvalue problem and the method of least squares.

428 Topics in Probability Theory (3)

Prerequisite: Consent of instructor. The course will cover advanced topics in probability theory and may be taken more than once for credit with the consent of the department.

430 Partial Differential Equations (3)

Prerequisites: Math 310, 316, 345, and 380. Classification of partial differential equations; Cauchy, Dirichlet, and Neumann problems; the fundamental solution; existence theorems of potential theory; eigenvalue problems; and Tricomi's problem.

Mathematics and Computer Science

432 Applied Statistics (3)

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.

437 Quality Management (3)

Prerequisite: MSIS 481 or Stat 320 or consent of instructor. (Same as MSIS 430.) An applied course on total quality management. Quality improvement approaches are presented and the managerial implications and responsibilities in implementing these approaches are discussed. Topical coverage includes the construction and interpretation of control charts, graphical methods, quality function deployment, robust experiments for product design and improvement, mistake-proofing (poke-yoke), the Deming approach, Baldrige award criteria, quality cost audits, worker empowerment and reward systems. Cases involving both business processes and physical processes are used to illustrate successful quality improvement efforts.

439 Topics in Number Theory (3)

Prerequisite: Consent of instructor. Topics selected from elementary, algebraic, analytic, and other branches of number theory. Examples of topics include the distribution of primes, the Riemann Zeta function, averages of arithmetic functions, the theory of partitions, ideal theory, and representations of integers by quadratic forms.

442 Algebra (3)

Prerequisites: Math 340 and 345. Basic fundamentals of the theory of groups, rings and fields.

444 Lie Groups (3)

Prerequisites: Math 340 and 411. The course provides an introduction to Lie Groups, Lie Algebras, and their representations.

448 Topics in Algebra (3)

Prerequisite: Consent of instructor. Topics selected from the theory of groups, rings, fields, algebras, and other algebraic systems. May be taken more than once for credit with consent of department.

450 Directed Readings (1-6)

Prerequisite: Consent of instructor. Independent readings at an advanced level.

452 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.

460 Calculus of Variations (3)

Prerequisites: Math 202, 310 and 345. Classical functionals, minimization of functionals, Euler-Lagrange equations, appropriate function spaces, weak solutions, existence of solutions, approximation theory, practical applications and finite element approach to solutions will be covered.

470 Functional Analysis (3)

Prerequisites: Math 345 and 410. Algebraic and topological tools applied to problems in analysis. The topics chosen will usually include topological vector spaces, metric spaces, Banach spaces, Hilbert spaces, and Banach algebras.

488 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.

490 Master's Thesis (1-6)

Prerequisite: Consent of instructor. Thesis work under the supervision of a faculty member. The course is designed for those students intending to present a thesis as part of their M.A. program. Students who do not write a thesis cannot apply Math 490 to a degree.

Computer Science

22 Introduction to Computing (3)

Prerequisite: Math 30 or equivalent. Fundamental concepts of computer systems and introduction to the applications of computers. The programming language BASIC. Credit will not be granted for both BA 103 and CS 22.

122 Computers and Programming (3)

Prerequisite: Math 80 or 100, or a grade of at least B in Math 30. An overview of a computer system is presented. Structured design techniques are considered and applied to the development of computer programs. Aspects of the FORTRAN language will be studied including basic data types, subroutines and functions, arrays, and files. Credit not granted for both BA 104 and CS 122.

125 Introduction to Computer Science (3)

Prerequisite: Math 80 or 100, or a grade of at least B in Math 30. 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.

170 User Interface Design and Event-Driven Programming with Visual Basic (3)

Prerequisite: Computer Science 125 or knowledge of some programming language and consent of the instructor. This course explores programming in Visual Basic for event-driven applications. Design and implementation of graphical user interfaces (GUI) are explored as primary examples. Additional topics may include DDE, OLE, and interactions with databases.

224 Object Oriented Programming with C++ (3)

Prerequisite: Introductory programming course with C. This course introduces object-oriented concepts in programming, including classes, encapsulation, polymorphism, and inheritance. This C++ programming language will be explored, including topics such as exception handling, templates, and dynamic allocation.

Mathematics and Computer Science

225 Data Structures and Problem Solving (3)

Prerequisite: CS 125. A continuation of CS 125. 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.

240 Computer Hardware and Small Computer Systems I (3)

Prerequisite: CS 225. CS 240 and CS 241 present an introduction to the design and operation of small computer systems. This course will emphasize logic circuit design, both combinatorial and sequential. Also, basic assembly language programming will be considered.

241 Computer Hardware and Small Computer Systems II (3)

Prerequisite: CS 240. A continuation of CS 240. This course will emphasize specific architectures and application programming.

272 Programming Languages Laboratory (1-3)

Prerequisites: CS 225 or consent of instructor. Computer programming in a specified language. The credit will vary but will usually be 3 hours. The language taught may be a procedural language, such as Ada, a functional language, such as ML, or a mathematical programming language, such as Mathematica. This course may be repeated for up to six hours credit if a different language is studied each time.

273 The C Programming Language (3)

Prerequisite: CS 225 or the equivalent without C. The C language is introduced together with the associated tools which make up the UNIX C programming environment. The course is project-oriented and a portion of the practical work will involve UNIX systems programming. This course is intended for students who have completed the equivalent of CS 125 and CS 225 but without the C language. It may not be taken for credit if the student has taken CS 225 with C.

275 Advanced Programming Techniques in C (3)

Prerequisite: CS 225 with C or CS 273. In-depth exploration of C, including pipes, various system calls, random/direct/interactive file operations, file buffering and low-level access, controlling exceptions, controlling interfaces generic interfacing, and robust IO. Introduction to Object Oriented programming with C++ (or a comparable language). Program development tools for UNIX and DOS/Windows. Creation and use of user/system-specific libraries.

313 Analysis of Algorithms (3)

Prerequisites: Statistics 132, 245, 250 and CS 225. This course addresses the design and mathematical analysis of fundamental algorithms in computer science and provides an introduction to the theory of NP completeness. Algorithms studied may involve search, sorting, data compression, string manipulation, graph traversal and decomposition, and algebraic and numeric manipulation.

328 Programming Languages and Compiling Techniques (3)

Prerequisites: CS 240, Math 245, and Math 250. Concepts of programming languages will be considered, together with a practical introduction to compilers as defining constraints on the semantic content of such languages. Compiler generator tools, such as lex and yacc, will be presented.

332 Artificial Intelligence (3)

Prerequisites: CS 275, Statistics 132, Math 245 and Math 250. An overview of AI applications will be presented. An AI programming language, such as Prolog or Lisp, will be introduced. Fundamental AI problem solving techniques will be applied to heuristic search and game playing. An introduction to knowledge representation and expert systems will be given. Topics such as theorem proving, neural networks, and natural language processing may also be studied.

334 Topics in Artificial Intelligence (3)

Prerequisite: CS 332 or consent of the instructor. Selected areas of AI will be considered in some depth. Topics may include robotics, computer vision, natural language processing, machine learning, neural networks, and knowledge based systems. The concept of object oriented programming may also be discussed.

368 Computer Graphics (3)

Prerequisites: CS 275 and Math 245. The basic architecture of various types of graphics systems is presented. The course will then present 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 will involve significant project work.

370 Software Design and Development (3)

Prerequisites: CS 225, Math 245, and 250. Software design techniques including stepwise refinement, segmentation, top-down design, and iterative enhancement. Organization and management of software development teams. Documentation of integrated software projects. Organization, management, and development of a large scale software project by students working in teams.

371 Database Design and Implementation (3)

Prerequisites: CS 225 (with C), or CS 273, Statistics 132, Math 245 and Math 250. The course presents the foundations, concepts, and principles of data base design. Various models of data representation will be considered, including the hierarchical and relational models. The course will also consider some of the implementation issues for data base systems.

373 Computer Networks and Communications (3)

Prerequisite: CS 275 and Statistics 132. 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.

Mathematics and Computer Science

376 Operating Systems (3)

Prerequisites: CS 275, CS 240, Statistics 132 and Math 245. The structure of a generic operating system will be studied. The various components, including the interface with the underlying hardware, will be considered in detail. UNIX is considered as a case study throughout the course and familiarity with UNIX and C is required. Some practical work, using the UNIX operating system, will be required.

379 Topics in Computer Science (3)

Prerequisite: Consent of instructor. A seminar on social topics in computer science to be determined by recent developments in the field and the interests of the instructor. May be repeated for credit provided different topics are studied.

Probability and Statistics

31 Elementary Statistical Methods (3)

Prerequisite: Math 30. An introduction to the basic tools and elementary methods of statistics, such as testing of hypotheses, analysis of variance, method of least squares, and time series. Does not satisfy the School of Business Administration requirement ordinarily met by BA 131. A student may not receive credit for both Statistics 31 and BA 131.

132 Applied Statistics I (3)

Prerequisite: Math 80 or 101. An introduction to the basic tools and elementary methods of statistics, such as least squares estimation, analysis of variance, regression, and testing of hypotheses. The use of the statistical package, SAS, for operation on statistical data. A student cannot receive credit for more than one of BA 131, Statistics 31, and Statistics 132.

232 Applied Statistics II (3)

Prerequisite: Statistics 31, or 132, or equivalent. Topics to be chosen from: fitting distributions to data, goodness of fit, parametric and non-parametric correlations and partial correlation, and nonparametric statistics. Sampling, design of experiments, categorical data, and regression. Emphasis on practical applications.

320 Mathematical Statistics I (3)

(Same as Math 320.) Prerequisites: Statistics 132 and Math 180. Introduction to theory of probability and statistics using concepts and methods of calculus.

321 Mathematical Statistics II (3)

(Same as Math 321.) Prerequisite: Statistics 320. Continuation of Statistics 320. Continuous sample spaces, stochastic processes, statistical inference, and statistical models.

326 Introduction to Stochastic Processes (3)

Prerequisite: Statistics 320. Markov chains, martingales, stationary distributions of a Markov chain, recurrent states, branching, birth and death, queuing chains, jump processes, second order processes, continuity and differentiation of second order processes, white noise, and stochastic differential equations.

330 Multivariate Analysis (3)

Prerequisites: Math 245 and Statistics 320, or consent of instructor. Multivariate normal distribution and related distributions such as the Wishart distribution. Statistical inference for the multivariate normal distribution. Multiple regression, canonical correlations, multivariate analysis of variance, classification problems, and discriminant analysis.

331 Analysis of Variance and Design of Experiments (3)

Prerequisites: A year of calculus, some matrix theory, and an intermediate course in statistics. Theory of general linear hypotheses, important special cases of analysis of variance, theory of least square estimation, interval estimation. One-way, two-way, and higher-way layouts, completely randomized design, randomized complete blocks. Latin square design, factorial, incomplete block and fractional replications, lattice design, optimum design.

333 Nonparametric Methods in Statistics (3)

Prerequisite: Statistics 320 or consent of instructor. Emphasis on statistical tests which are distribution-free; one-sample and two-sample location and detection of shifts, point estimators, and confidence intervals; relative dispersion, K-sample tests, detection of independence, and regression.

339 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 for credit provided different topics are studied.

Music**Faculty**

John Hylton, Professor*; Chairperson
D.Ed., Penn State University

Kenneth E. Miller, Professor Emeritus
Ph.D., Northwestern University

Evelyn Mitchell, Professor Emerita

Arnold Perris, Professor Emeritus
Ph.D., Northwestern University

James Richards, Professor*
Ph.D., University of Rochester, Eastman School of Music

Diane Touliatos, Professor*
Ph.D., Ohio State University

Douglas Turpin, E. Desmond Lee Professor of Music Education*
D.Ed., Washington University
(Director, Whitaker Music Education Collaborative)

Fred Willman, Professor*
Ph.D., University of North Dakota

Mark Madsen, Associate Professor*
D.M.A., University of Arizona

Robert J. Ray, Associate Professor*
B.M., Northwestern University

Sally Herman, Assistant Professor*
M.A., Webster University

Leonard Ott, Assistant Professor*
Ph.D., Michigan State University

William Richardson, Assistant Professor*
M.M., Ohio State University

W. Claude Baker, Composer in Residence
Ph.D., University of Rochester, Eastman School of Music

David Bruenger, Adjunct Assistant Professor
D.M.A., University of North Texas
(Director, Premiere Performance Concert Series)

Stephanie Campbell, Adjunct Assistant Professor (Musicology)
Ph.D.

Dan Presgrave, Adjunct Assistant Professor (Conducting)
M.M.E.

Jane Allen, Lecturer (Piano)

Darwyn Apple, Lecturer (Violin)**
M.M.

Sandra Bouman, Lecturer (Voice)
M.F.A.

Katherine Brown, Lecturer (Voice)
M.M.

Eileen Burke, Lecturer (Oboe)
M.M.

Robert Ceccarini, Lecturer (Trumpet)
Ph.D.

Jeffrey Collins, Lecturer (Saxophone)
M.M.

Malinda Cox, Lecturer (Bassoon)
M.M.

Roger Davenport, Lecturer (Trombone)**
B.M.

Jan Gippo, Lecturer (Flute)**
M.M.

Leonid Gotman, Lecturer (Viola)**

Kathryn Haggans, Adjunct Assistant Professor (Voice)
Ph.D.

Suzanne Harlamert, Lecturer (Cello)
M.M.

Eric Harris, Lecturer (String Bass)**
M.M.

Doris Hylton, Lecturer (Conducting lab)
M.A.

Amanda Kirkpatrick, Specialist (Piano)
M.M.

Carol Koch, Lecturer (Music Ed./Piano)
B.M.E.

Kenneth Kulosa, Lecturer (Cello)**
M.M.

Robert Lauver, Lecturer (French Horn)**
B.M.

Kimberly McAllister, Specialist (Piano)
M.M.

Alvin McCall, Lecturer (Cello)**
D.M.A.

Inga Magid, Lecturer (Non-Western)
M.A.

James Meyer, Lecturer (Clarinet)**
M.A.

Bryan Mueller, Lecturer (Trumpet)
M.M.

Maria Pinckney, Lecturer (Harp)

Alan Rosenkoetter, Lecturer (Guitar)
B.S.

Janice Smith, Lecturer (Flute)**
B.M.E.

Patricia Stewart, Lecturer (Theory)
B.S.

Sue Stubbs, Lecturer (Double Bass)
M.M.

Takaoki Sugitani, Lecturer (Violin)**

Sharon Tash, Specialist (Piano)
B.A.

Robert Tobler, Lecturer (Trombone)
M.A.

Alla Voskoboynikova, Specialist (Piano)
M.M.

Tina Ward, Lecturer (Clarinet)**
M.A.

Catherine Warner, Lecturer (Flute)
M.M.E.

Carolyn White-Buckley, Lecturer (String Bass)**
B.M.

*members of Graduate Faculty

**member, Saint Louis Symphony Orchestra

Music faculty members have received recognition for distinguished achievements in conducting, composition, and performance. The faculty is also recognized for research in musicology and music education. Part-time applied music lecturers are all professional musicians.

General Information**Degrees and Areas of Concentration**

The Department of Music offers programs of study leading to the B.M. degree in music education (and state teaching certification in grades K-12); the B.M. degree with an emphasis in performance; the B.M. degree with elective studies in business; and the B.A. degree in music.

Instruction in piano, organ, voice, and all band and orchestral instruments is given by full-time faculty and part-time professional musicians, many of whom are members of the Saint Louis Symphony Orchestra. Faculty recitals are regularly scheduled.

Music

Music Minors Three minors in music are available: a minor in music; a minor in music education (choral/vocal, Grades K-9); and a minor in Jazz studies.

Facilities All of the department's facilities, classrooms, rehearsal rooms, studios, practice rooms, and listening labs are located in the Music Building.

Ensembles Thirteen performing ensembles are open to all by audition with credit optional:

- 40, University Chorus
- 41, The University Singers
- 50, University Orchestra
- 52, University Band
- 53, University Wind Ensemble
- 54, Chamber Ensemble: a, brass; b, jazz combo; c, percussion; d, strings; e, voice; f, woodwinds
- 55, Jazz Ensemble
- 56, Opera Workshop

Each year about 40 recitals and concerts are presented.

Undergraduate Studies

General Education Requirements

General education requirements apply to all majors, except students in the B.M. with elective studies in business and B.M. in music education degree programs who are not required to take a foreign language. Courses required for degree programs may not be taken on a satisfactory/unsatisfactory basis. All music courses presented to meet degree requirements must be completed with a grade of "C" or better

Students may complete any number of hours of applied music (private lesson) toward a degree. Non-music majors may complete no more than eight hours in music-performing organizations (Music 40, University Chorus; 41, University Singers; 50, University Orchestra; 52, University Band, et. seq.) toward graduation, including credit transferred. Courses in applied music (private lessons and performing organizations) do not fulfill the humanities general education requirement. Department courses which meet the non-Euro-American study requirement are Music 9, Non-Western Music I, and Music 10, Non-Western Music II.

Degree Requirements

Admission to all music degree programs is by audition and interview to demonstrate musical aptitude and potential, moderate technical proficiency, and seriousness in selecting music as a four-year course of study. In addition to the Applied Music audition, placement examinations in Music Theory and Music History must be taken to confirm students' prior experience in these areas. Auditions are scheduled from January to May for the Fall Semester; a limited number are held in December for the Winter Semester. All students in Applied Music must pass an examination to confirm their level of performance skills before faculty approval for enrollment in Music 244 is granted. This examination usually will be taken in lieu of the Applied Music jury for Music 145.

Evidence of sound musicianship, a close acquaintance with an appropriate portion of musical literature, and the ability to bring it to actual performance are required for graduation in all music degree programs. Students in the Bachelor of Music-Performance Emphasis fulfill this requirement with junior and senior recitals. Those in all other degree programs must satisfy the requirement by participating in three regularly scheduled student recitals during the last two semesters of applied music study, or by performing for a special jury of faculty members. The faculty may invite students who are not in the Bachelor of Music-Performance Emphasis program to give public senior recitals with the recommendation of the applied music instructor.

Music majors are required to participate in an approved ensemble (Symphonic Band, University Singers, University Chorus, or Orchestra) and to study one applied area progressively each semester, and to attend pedagogy and Literature seminars each semester of the degree program. (Music education majors are exempt from these requirements during the student teaching semester.) The following specific ensemble enrollments, depending upon the applied music area, are required:

Wind and percussion students—Symphonic Band; String students—University Orchestra; Voice students—University Singers; Keyboard and guitar students—any approved ensemble, but those in the Bachelor of Music in Music Education program must enroll in an ensemble compatible with the teaching certification they are pursuing. Instrumental students may be required to participate in additional ensembles to enhance their musical development.

Majors are required to appear in performance at the department's discretion and to attend a prescribed number of departmental recitals. Non-keyboard players are required to pass an exam in piano proficiency: Music 118, Intermediate Piano Proficiency, or equivalent for instrumentalists, or Music 120, Intermediate Piano Proficiency, or equivalent for vocalists.

In addition to fulfilling the general education and specific major degree requirements, students are to take the remaining hours required to complete the Bachelor of Arts in Music and Bachelor of Music degrees 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, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, business, education, engineering, and interdisciplinary. The music department may require students to pass a placement 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.

Music

Core Curriculum

The following core courses are required for all music majors:

Music Theory

- 30A, Theory of Music I
- 30B, Aural Training I
- 31A, Theory of Music II
- 31B, Aural Training II
- 130A, Theory of Music III
- 130B, Aural Training III
- 131A, Theory of Music IV
- 131B, Aural Training IV
- 141, Orchestration

Piano Proficiency

- 14, Piano Proficiency
- 15, Piano Proficiency
- 116, Piano Proficiency
- 118, Piano Proficiency

Music History and Literature

- 101, History of Western Music I
 - 102, History of Western Music II
- and at least one 300-level course.

Applied Music

- 44Z-347Z, Seminar in Pedagogy and Literature

In addition to the core curriculum, students must fulfill the requirements for the specific degree program or emphasis area as listed below:

Bachelor of Arts in Music

In addition to the required Core Curriculum, candidates must complete the following:

- 151, Conducting I
- 192, Senior Research
- 09, Non-Western Music I, or 10, Non-Western Music II

Applied Area 8 credit hours of private lessons

Ensemble Four hours maximum credit

Bachelor of Music in Music Education

In addition to the required Core Curriculum, candidates must complete the following:

Applied Area 7 credit hours of private lessons

Practicum

- 151, Conducting I
- 152, Conducting II
- 161, Elementary School Materials-Conducting Laboratory
- 162, Junior-Senior High School Materials Laboratory

Instrumental Certification

- 25, 26, 27, and 28, Instrumental Techniques
- 123, Intermediate Vocal Techniques, or
- 44T, Applied Music-Voice
- 124, Intermediate Vocal Techniques, or
- 45T, Applied Music-Voice
- 268, Curriculum and Methods of Teaching Instrumental Music I
- 270, Curriculum and Methods of Teaching Instrumental Music II

Vocal Certification

- 125, Singer's Diction: Italian and German
- 126, Singer's Diction: French, Latin and English
- 25, 26, 27, or 28, Instrumental Techniques (2 credit hours required)
- 119, Intermediate Piano Proficiency
- 120, Intermediate Piano Proficiency
- 142, Choral Arranging
- 143, Instrumentation and Score Technique
- 269, Curriculum and Methods of Teaching Middle School/Junior High School General Music
- 271, Curriculum and Methods of Teaching Secondary Choral Music

For students whose applied area is not Voice, the following courses are also required:

- 123, Intermediate Vocal Techniques
- 124, Intermediate Vocal Techniques

Ensemble Four hours maximum credit

Curriculum and Methods of Teaching

The following courses are required:

- 257, Curriculum and Methods of Teaching Elementary School Music
- 267, Philosophic and Practical Foundations of the Secondary Music Education Curriculum

Proficiency Exam Students working toward certification in choral/vocal or instrumental music K-12 or K-9 are required to pass a proficiency examination before admission to student teaching in music, usually before or during the sixth semester of their program.

Professional Education and Student Teaching

The following education courses are required:

- ED FND 111, The School in Contemporary Society
- ED PSY 312, The Psychology of Teaching and Learning
- SEC ED 213, Techniques of Secondary School Teaching
- SEC ED 293, Student Teaching in Music Education, K-6
- SEC ED 294, Student Teaching in Music Education, 7-12
- SP ED 313, The Psychology and Education of Exceptional Individuals
- SEC ED 386, Teaching Reading in Secondary School Content Area

Bachelor of Music with an Emphasis in Performance

In addition to the required Core Curriculum, candidates must complete the following:

- 311, Analysis of Twentieth-Century Techniques
- 312, Tonal Counterpoint
- 151, Conducting I
- 152, Conducting II
- 192, Senior Research
- 119, Intermediate Piano Proficiency (voice majors only)
- 120, Intermediate Piano Proficiency (voice majors only)
- 09, Non-Western Music I, or 10, Non-Western Music II
- 156 Piano Pedagogy (Keyboard students only)

Music

Music History and Literature

An additional 300-level course is required.

Applied Area

12 credit hours of private lessons (junior and senior recitals required).

Ensemble Participation required as follows:

Large Group Four hours maximum credit
Chamber Ensemble/Accompanying Six hours

Foreign Language Candidates pursuing this emphasis area with an applied area in voice must complete two semesters of one foreign language selected from French, German, or Italian 1 and Italian 2.

Bachelor of Music with Elective Studies in Business

In addition to the required Core Curriculum, candidates must complete the following:

Applied Area Eight hours of private lessons

Music History and Literature: An additional 300-level course is required.

09, Non-Western Music I, or
10, Non-Western Music II

Practicum

151, Conducting I

Ensemble Four hours maximum credit

Internship

292, Internship (replaces Music 192 in Core Curriculum)

English One of the following English courses is required:

210, Advanced Expository Writing
212, Business Writing
213, Technical Writing

Business Administration The following courses in business administration are required:

140, Fundamentals of Financial Accounting
145, Managerial Accounting
206, Basic Marketing
210, Management as a Behavioral Science I

Two courses selected from the following list must also be taken:

103, Computers and Information Systems
156, Legal Environment of Business
204, Financial Management
256, Business Law: Contracts, Sales, Secured Transactions, Bankruptcy
270, Management of Promotion
301, Consumer Behavior
309, Human Resource Management
311, Advanced Management and Organizational Behavior
312, Industrial and Labor Relations
347, Income Taxes

Note: The following courses fulfill general education requirements and are prerequisites to the required business administration courses:

Psych 3, General Psychology, or
Sociology 10, Introduction to Sociology
Economics 51, Principles of Microeconomics

Curricula for Minors

Minor in Music

Candidates must complete the following courses (26 hours):

Music Theory

30A, Theory of Music I
31A, Theory of Music II
30B, Aural Training I
31B, Aural Training II

Music History and Literature

101, History of Western Music I
102, History of Western Music II

Applied Area Four credit hours of private lessons

Ensemble Two credit hours (four hours maximum credit)

Six additional credit hours to be chosen from courses such as the following:

130A, Theory of Music III
130B, Aural Training III
131A, Theory of Music IV
131B, Aural Training IV
141, Orchestration
116, Intermediate Piano Proficiency (Prerequisite: Music 15)
118, Intermediate Piano Proficiency
Any 300-level Music History and Literature course
Applied Music courses in sequence
Any Ensemble course

Music education methods courses and instrumental techniques courses may not be taken to complete this minor.

Non-keyboard players are required to pass an exam of piano proficiency (Music 15 or equivalent).

A GPA of 2.5 for all music hours is required to complete this minor.

Minor in Music Education (Choral/Vocal, Grades K-9)

The minor in music education is designed to provide a second classification area for students enrolled in other education programs that lead to initial teaching certification.

Candidates must complete the following courses (41 hours):

Music Theory

30A, Theory of Music I
31A, Theory of Music II
30B, Aural Training I
31B, Aural Training II

Music

Music History and Literature

- 101, History of Western Music I
- 102, History of Western Music II

Music Education

- *257, Curriculum and Methods of Teaching Elementary School Music
- *267, Philosophic and Practical Foundations of the Secondary Music Education Curriculum
- *269, Curriculum and Methods of Teaching Middle School/Junior High School General Music

*Elementary education majors will omit Music 177 from their regular elementary program to take these courses. Also required, as applicable, is SEC ED 393, Student Teaching.

Practicum

- 14/15, Piano Proficiency
- 116/118, Intermediate Piano Proficiency
- 151, Conducting I
- 161, Elementary School Materials: Conducting Laboratory
- 162, Junior-Senior High School Materials Laboratory

Ensemble

- 40/41, Chorus or University Singers

Applied Music, Voice (at least two hours must be private rather than class voice)

The student must receive at least a C in each music course and maintain a 2.5 GPA in all music courses (Chorus/Singers is not included in the GPA).

Minor in Jazz Studies Candidates must complete 31 credit hours from the following:

Music Theory

- 30A, Theory of Music I
- 31A, Theory of Music II
- 32, Theory of Jazz
- 30B, Aural Training I
- 31B, Aural Training II

Music History and Literature

- 7, Introduction to Jazz
- 102, History of Western Music II

Applied Area Four credit hours of private lessons

Jazz Improvisation

- 20, Jazz Improvisation Laboratory (two credit hours/Music 20 repeated)

Piano Proficiency

- 14/15, Piano Proficiency
- 116, Intermediate Piano Proficiency
- 117, Jazz Keyboard Harmony

Ensemble Two credit hours minimum, to be selected from:

- 54b, Jazz Combo
- 54e, Voice
- 55, Jazz Ensemble

Graduate Study

Master of Music Education

The Master of Music Education degree is designed to enable music specialists in grades K-12 to pursue continued professional growth in an emphasis area of their choice: Choral, General Music, Instrumental, or Music Technology.

Admission Requirements

Admission to the program requires a Bachelor of Music in Music Education (or equivalent) degree, admission to the Graduate School and three letters of recommendation.

A written examination in music education (including applications of music history and music theory/ear-training) will be taken during the first semester or term of enrollment in the program for advising purposes and to identify the possible need for review in the areas of music theory and history.

The program requires completion of 32 hours of graduate credit, 22 of which must be earned in residence.

Required Courses and Options:

Each candidate will choose one of the following emphasis areas:

- Choral Music Education
- Instrumental Music Education
- General Music Education
- Music Education and Technology

The minimum 32 hour program includes the following requirements.

Major Area (9 credit hours)

- 481 Foundations of Music Education (3)
- 491 Music Education Research (3)
- 499 Master's Project in Music Education (3)

Advanced Methods (3 credits from the following)

- 451 Advanced Instrumental Methods (3)
- 461 Advanced Choral Methods (3)
- 471 General Music: A Model for Multi-Faceted Musical Learning (3)

Choose nine credits from the following:

- 401 Studies in Style and Performance (3)
- 402 Choral Literature (3)
- 403 Band Literature (3)
- 404 Orchestra Literature (3)
- 411 Scoring and Arranging (3)
- 421 Advanced Conducting (3)
- 462 Guitar in the Classroom (3)
- 475 Micro-Computer Applications in Music (3)
- 476 Micro-Computer Assisted Instruction: Curriculum Development in Music (3)
- 477 Advanced Micro-Computer Applications in Music (3)
- 492 Psychology of Music (3)

Music**Cognate in Education**

Choose one 3-credit curriculum course such as:
Sec Ed 415 The Secondary School Curriculum (3)
Ele Ed 422 Curriculum Construction in Elem Schools (3)

Choose one other 3-credit education course such as:
Ed Rem 420 Classroom Testing and Measurement (3)
Ed Fnd 421 Philosophy of Education (3)
Sec Ed 425 Secondary School Supervision (3)
Ele Ed 425 Elementary School Supervision (3)
Ed Rem 330 Educational Statistics (3)
Ed Rem 431 Educational Research Methods (3)

Electives

Choose five credits from elective courses such as:

- 301 Marching Band Techniques (3)
- 401 Studies in Style and Performance (3)
- 402 Choral Literature (3)
- 403 Band Literature (3)
- 404 Orchestra Literature (3)
- 406 Graduate Workshop in Music Education (1-3)
- 407 Techniques and Literature for the Jazz Ensemble (3)
- 411 Scoring and Arranging (3)
- 412 Advanced Composition Techniques (3)
- 413 Teaching Music Theory in the High School (3)
- 421 Advanced Conducting (3)
- 431 Advanced Chamber Ensemble (0)
- 444 Applied Music I (1)
- 445 Applied Music II (1)
- 446 Applied Music III(1)
- 447 Applied Music IV(1)
- 451 Advanced Instrumental Methods (3)
- 452 Instrumental Music Administration (3)
- 461 Advanced Choral Methods (3)
- 462 Guitar in the Classroom (3)
- 465 Music Theater in the School (3)
- 471 General Music: A Model for Multi-Faceted Musical Learning (3)
- 472 Electronic Music Techniques for Teachers (3)
- 473 Individualizing Music Instruction (3)
- 474 Techniques of Group Keyboard Instruction (3)
- 475 Micro-Computer Applications in Music (3)
- 476 Micro-Computer Assisted Instruction: Curriculum Development in Music
- 477 Advanced Micro-Computer Applications in Music (3)
- 482 School Music Administration and Supervision (3)
- 483 Contemporary Music Education (3)
- 484 Problems of Urban Music Education(3)
- 492 Psychology of Music (3)
- 495 Special Problems in Music Education (3)
- Ed Tec 340 Selection and Utilization Education Media (3)
- Ech Ed 410 Foundations of Pre-School Education (3)
- Spc Ed 412 Psychology of Exceptional Children (3)
- Sec Ed 414 Teaching the Gifted/Talented in the Secondary School (3)
- Sec Ed 418 The Junior High/Middle School (3)
- Sec Ed 427 Supervision of Clinical Experiences in Teacher Education (3)
- Sec Ed 429 The Department Head (3)
- Ed Rem 431 Educational Research Methods (3)

Career Outlook**(Undergraduate)**

A music degree builds the foundation for a career in professional performance, for teaching in a school or private studio or for serving as a church music director. A music degree may also prepare one for positions in the music industry (recording, publishing, radio programming, manufacturing, or music retail). A trained artistic mind can also be valuable in the fields of advertising, public relations, and consumer services.

A number of UM-St. Louis music graduates have been readily accepted into outstanding graduate programs, including our own. Many are pursuing successful careers in music education, business and industry, or as professional performers.

(Graduate)

Many graduate students in music education will already hold full-time music teaching positions. A graduate degree in music education allows for continued professional growth. Music specialists may refine their teaching expertise, add to their understanding and knowledge about music and educational processes, become more specialized in a specific emphasis area of music education (choral, instrumental, general music or music technology) or any combination of these professional growth areas.

Graduate level work in music education is often required to renew a teacher's certificate or to satisfy professional growth requirements specified by an employing school or school district or to advance to new positions within the field of music education.

Music

Course Descriptions

Prerequisites may be waived by consent of the department.

The following courses fulfill the Humanities [H] breadth of study requirements: 1, 2, 6, 7, 9, 10, 19, 30A, 31A, 32, 101, 102, 103, 105, 108, 130A, 131A, 177, 192, 202, 300, 321, 322, 323, 324, 325, 326, 327, 375, 400.

Applied Music

43A-T Secondary Applied Music (1)

Prerequisites: By audition and consent of department. Individual instruction in performance and literature of the designated instrument. May be repeated for credit. Not applicable to the applied music requirement for music major or music minor degrees.

44, 45, 144, 145, 244, 245, 344, 345, 346, 347 Applied Music (1-2)

Registration by audition and consent of department. Each Applied Music course is a prerequisite for the subsequent course in the sequence. Courses are offered in the following areas: a, bassoon; b, clarinet; c, classical guitar; d, euphonium; e, flute; f, French horn; g, harp; h, oboe; i, organ; j, percussion; k, piano; l, saxophone; m, trombone; n, trumpet; o, tuba; p, violin; q, viola; r, violoncello; s, string bass; t, voice. Applied Music registration requires concurrent large ensemble registration, and includes weekly Pedagogy and Literature seminars.

44Z, 45Z, 144Z, 145Z, 244Z, 245Z, 344Z, 345Z, 346Z, 347Z Seminar in Pedagogy and Literature (0)

Prerequisites: Concurrent registration with each Applied Music course is required. Seminars are offered in the pedagogy and literature for all areas of Applied Music. May be taken on a satisfactory/unsatisfactory grading basis (S/U).

444 Applied Music I (1)

Prerequisite: 300-level applied music or consent of the department. Private instruction in orchestral instruments, organ, guitar, piano, and voice.

445 Applied Music II (1)

Prerequisite: Music 444. Private instruction in orchestral instruments, organ, guitar, piano, and voice.

446 Applied Music III (1)

Prerequisite: Music 445. Private instruction in orchestral instruments, organ, guitar, piano, and voice.

447 Applied Music IV (1)

Prerequisite: Music 446. Private instruction in orchestral instruments, organ, guitar, piano, and voice.

Ensemble Performance

40 University Chorus (1)

Prerequisite: Consent of instructor. Preparation and performance of choral literature.

41 The University Singers (1)

Prerequisite: Consent of instructor. The study and performance of music for vocal chamber ensemble.

50 University Orchestra (1)

Prerequisite: Consent of instructor. Study, preparation, and performance of orchestral repertory.

52 University Band (1)

Prerequisite: Consent of instructor. Study, preparation, and performance of music for the wind ensemble and band.

53 University Wind Ensemble (1)

Prerequisite: Consent of instructor. The study, preparation, and performance of music for wind ensemble and chamber band.

54 Chamber Ensemble (1)

Prerequisite: Consent of instructor. Study, preparation, and performance of music for small ensembles: a, brass; b, jazz combo; c, percussion; d, strings; e, voice; f, woodwinds; g, accompanying.

55 Jazz Ensemble (1)

Prerequisite: Consent of instructor. Study, preparation, and performance of jazz music for big band.

56 Opera Workshop (1)

Prerequisite: Consent of instructor. Instruction in movement, basic stage techniques, technical theater, repertory and performance techniques and preparation. May be repeated for credit.

60 Collegium Musicum (1)

Prerequisite: Consent of instructor. Performance of music for chamber ensemble with particular emphasis on the Renaissance and Baroque periods.

356 Advanced Opera Workshop (1)

Prerequisite: Consent of instructor. Instruction in movement, stage technique, technical theater, repertory, and performance based on advanced vocal skills. May be repeated for credit.

431 Advanced Chamber Ensemble (0)

Prerequisite: Graduate standing in music. Study and performance of traditional and nontraditional chamber literature.

449 Graduate Ensemble (1)

Prerequisite: Graduate standing in music or consent of department. Study, preparation, and performance of ensemble literature from the choral, orchestral, or band/wind ensemble repertory. May be repeated for a total of four hours of credit.

Music Education

177 An Introduction to Music for the Elementary School Teacher (3)

An introduction to the elements of music and the expressive nature of music. Includes application of fundamentals to appropriate literature and activities for use with children in a classroom setting. This course will not apply toward requirements for a music major.

257 Curriculum and Methods of Teaching Elementary School Music (3)

(Same as Ele Ed 277.) Prerequisites: Music 131 and Ed Fnd 111. For the music education major. A study of the elementary school music curriculum emphasizing the objectives, methods of teaching and staffing music classes, and analysis of instructional materials and resources. This course must be completed in residence.

Music

267 Philosophic and Practical Foundations of the Secondary Music Education Curriculum (1)

(Same as Sec Ed 275.) Prerequisites: Music 131, Music 257/Ele Ed 277, and Ed Fnd 111. Concurrent registration in Music 268/Sed Ed 276 and Music 270/Sed Ed 278 or Music 271/Sec Ed 279. For the music education major. A study of the secondary school music program: curricular objectives, philosophy, and general administrative procedures common to all secondary music classes. This course must be completed in residence.

268 Curriculum and Methods of Teaching Instrumental Music I (2)

(Same as Sec Ed 276.) Prerequisites: Music 131, 145, 151, 161, Ed Fnd 111, two of the following: Music 25, 26, 27, 28. Concurrent registration in Music 257/ Ele Ed 277. A study of the teaching techniques, materials, curriculum, and organization of the beginning instrumental music education program. Topics include student recruitment the elementary band/orchestra, small group instruction, jazz ensemble, and marching band. This course must be completed in residence.

269 Curriculum and Methods of Teaching Middle School/Junior High School General Music (2)

(Same as Sec Ed 277.) Prerequisites: Music 131, Music 257/Ele Ed 277, and Ed Fnd 111. Concurrent registration in Music 267/Sec Ed 275 and Music 271/Sec Ed 279. For the music education major. A study of the middle school/ junior high school general music program emphasizing a conceptually based curriculum: objectives, methodologies, materials, innovations, classroom organization, and management. This course must be completed in residence.

270 Curriculum and Methods of Teaching Instrumental Music II (2)

(Same as Sec Ed 278.) Prerequisites: Music 131, Music 152a, Music 162, Music 257/ELE Ed 277, Music 268/Sec Ed 276, Ed FND 111, three of the following: Music 25, Music 26, Music 27, Music 28. Concurrent registration in Music 267/Sec Ed 275. A continuation of Music 268/Sec Ed 276. Topics include large group rehearsal techniques, program development, administrative procedures, and evaluation. This course must be completed in residence.

271 Curriculum and Methods of Teaching Secondary Choral Music (2)

(Same as Sec Ed 279.) Prerequisites: Music 131, Music 257/ELE Ed 277, and Ed FND 111. Concurrent registration in Music 267/Sec Ed 275 and Music 269/Sec Ed 277. For the music education major. A study of the secondary school choral music program: curriculum, methods, teaching techniques, organization, and administrative procedures for choral performance classes. This course must be completed in residence.

300 Advanced Techniques in Music Education (1-2)

Prerequisite: A 200-level music education course or permission of the department. Intensive study for advanced music education students and music teachers, emphasizing specialized techniques and innovative concepts. Topics to be announced. May be repeated for credit.

301 Marching Band Techniques (3)

Prerequisite: Junior Standing. Techniques for organizing and training school marching bands. Content will include planning and charting shows, rehearsal problems, corps and traditional styles, and auxiliary units.

306 Advanced Workshop in Music Education (1-5)

Prerequisite: Junior Standing and consent of the instructor. An intensive variable-topic workshop in Music Education presenting knowledge and skills to supplement specific areas in existing courses.

400 Directed Research in Music: Variable Topic (1-5)

Prerequisite: Consent of instructor. Directed independent research in music through readings, conferences, writings, and projects. This course may be repeated, but no more than 5 hours may be applied toward a degree.

406 Graduate Workshop in Music Education (1-5)

Prerequisite: Graduate standing and consent of instructor. Intensive workshop in Music Education. Variable topics. To gain skills and knowledge in specific areas not readily available in existing courses.

407 Techniques and Literature for the Jazz Ensemble (3)

Prerequisite: Graduate standing in music. An examination of jazz music education. Includes methods, materials, improvisational techniques, and administration.

413 Teaching Music Theory in the High School (3)

Prerequisite: Graduate standing in music. A study of the course content and pedagogical techniques for high school music theory courses.

451 Advanced Instrumental Methods (3)

Prerequisite: Graduate standing in music. Development of objectives for instrumental programs and methods of achieving those objectives. Comprehensive musicianship through instrumental performance, analysis of instrumental literature, instrumental philosophies and methodologies, rehearsal organization, and recent research in instrumental music education will be discussed.

452 Instrumental Music Administration (3)

Prerequisite: Graduate standing in music. Study of the organizational problems of the instrumental program; library management; budgeting; awards and incentive systems; selection, care, and handling of uniforms and equipment; instrumental balance; seating plans; and operation of festivals and contests.

461 Advanced Choral Methods (3)

Prerequisite: Graduate standing in music. Development of objectives for choral programs and methods of achieving those objectives. Comprehensive musicianship through choral performance, analysis of choral literature, the changing voice, choral philosophies and methodologies, rehearsal organization, and recent research in choral music education will be discussed.

462 Guitar in the Classroom (3)

Prerequisite: Graduate standing in music. A study of guitar instruction in grades 5-12 with a focus on curricular sequence that includes chords, strums and picking patterns essential for song accompaniment skill development. Current materials, suitable for upper elementary and secondary students will be explored.

Music

465 Music Theater in the School (3)

Prerequisite: Graduate standing in music. Techniques appropriate for school musical productions. Aspects of production and planning, including makeup, staging, lighting, and costuming.

471 General Music: A Model for Multifaceted Musical Learning (3)

Prerequisite: Graduate standing in music. An exploration of the general music class as a learning laboratory model designed to actively engage the learner in a series of comprehensive music learning experiences. Emphasizes techniques and materials that will motivate the "nonperformance-oriented" student.

472 Electronic Music Techniques for Teachers (3)

Prerequisite: Graduate standing in music. Basic electronic music instruments, their operation and use as teaching tools. Materials and techniques suitable for use with students in both elementary and secondary school settings will be presented.

473 Individualizing Music Instruction (3)

Prerequisite: Graduate standing in music. The development of learning strategies, materials, and evaluation techniques suitable for better accommodating the varying interests, abilities, and learning styles of individual students in music classes.

475 Microcomputer Applications in Music Education (3)

(Same as ED 475.) Prerequisites: Graduate Standing in Music. An examination of the potential of microcomputers in the music education field. Experiences with available hardware and software suitable for applications that include inventory, budget, music library cataloging, digital music synthesis, and computer-assisted instruction at all levels.

476 Microcomputer-Assisted Instruction Curriculum Development in Music (3)

(Same as ED 476.) Prerequisites: Graduate Standing in Music. Design and development of Computer-Assisted Instruction (CAI) lessons in music. Commercial courseware and various CAI models will serve as the basis for creating original programs that can be used effectively to implement objectives of the music curriculum for a specific school or school district. The design, refinement, and production of a major CAI program for use in an elementary, secondary or postsecondary setting is required.

477 Advanced Microcomputer Applications in Music (3)

(Same as ED 477.) Prerequisite: Graduate Standing in Music. The study of complex microcomputer applications including music synthesis, MIDI, music-oriented graphics, voice and pitch recognition, administrative applications and computer-assisted instruction.

481 Foundations of Music Education (3)

Prerequisite: Graduate standing in music. A study of the historical, philosophical, and psychological foundations of music education. Includes principles necessary for development, implementation, and evaluation of the total school music program.

482 School Music Administration and Supervision (3)

Prerequisite: Graduate standing in music. Theory and practice of administration and supervision of school music programs.

483 Contemporary Music Education (3)

Prerequisite: Graduate standing in music. A study of recent trends and issues in music education.

484 Problems of Urban Music Education (3)

Prerequisite: Graduate standing in music. An analysis of current practices, problems, trends, and research involved in developing strategies for the improvement of music programs in inner-city schools.

491 Music Education Research (3)

Prerequisite: Graduate standing in music. Applications of various approaches in defining and analyzing research problems in music education. Historical, experimental, descriptive, and philosophical research will be included.

492 Psychology of Music (3)

Prerequisite: Graduate standing in music. A study of the effects of music on behavior. Tuning and temperament, psychoacoustics, measurement of musical behavior, aesthetic response to music, and functional music.

495 Special Problems in Music Education (1-3)

Prerequisite: Graduate standing in music. Selected problems to meet the needs of the individual student.

499 Master's Project in Music Education (3)

Prerequisite: Graduate standing in music. A project utilizing historical, experimental, philosophical, descriptive, or analytical research techniques. The project will include a written report.

Music History and Literature

1 Introduction to Music (3)

An historically-oriented study of art music, its styles, and forms from the Baroque period to the present day. This course will not apply toward requirements for a music major.

2 Introduction to Symphonic Music (3)

Orchestral music from the Baroque period to the present time; concerto grosso and suite; program music; the symphony. This course will not apply toward requirements for a music major. This course is also offered for independent study through the UM-St. Louis Video Program.

6 Introduction to African-American Music (3)

A survey of the African-American musical heritage from its African origins through its role and development in twentieth-century American society. All genres will be discussed, including African-American composers who wrote in the European tradition. This course will not apply toward requirements for a music major or minor.

7 Introduction to Jazz (3)

A survey course which examines the musical, historical, and social aspects of the subject. This course will not count toward requirements for a music major.

Music

9 Non-Western Music I (3)

The music of Oceania; folk and classical music and dance of East Asia, Tibet and Southeast Asia; the influence of Buddhism, Islam, and Western acculturation on the functions of music in these societies. This course fulfills the Cultural Diversity requirement.

10 Non-Western Music II (3)

Music of the African continent, West Asia, and South Asia; a survey of the tribal, folk, and classical music and performing arts of these cultures. This course fulfills the Cultural Diversity requirement.

101 History of Western Music I (3)

Prerequisite: Music 30 or consent of department. A general survey of the history of Western music. Includes the evolution and development of styles, forms, and their social setting.

102 History of Western Music II (3)

Prerequisite: Music 30 or consent of department. A continuation of Music 101.

103 Music in Religion (3)

Prerequisite: Sophomore standing or departmental consent. A survey of the role of music in the religious traditions of the East and West from earliest times to the present. The types of music in the various religious traditions and the effects of this music in society are examined.

105 Music as Propaganda (3)

A study of music as a tool of individuals or government and other authorities to teach, to persuade, to beguile a society in various periods and places of world history. Topics include Beethoven and the rise of democracy, nationalism in nineteenth-century Europe, music in Eastern and Western religions, official art in Marxist-socialist states, and protest songs of the Sixties.

108 Women in Music (3)

This course surveys the role of women in the development of music from antiquity to the present day. The course will explore the lives and contributions of women composers, performers, and conductors.

202 Music History Review (3)

Prerequisite: Consent of department. A review of the history of Western music. Includes a survey of styles in major periods of Western music. The credit may not be used to satisfy requirements for a music degree.

300 Directed Studies: Variable Topic (1-5)

Prerequisite: Consent of department. Directed independent study of selected topics in music. May be repeated, if topic is substantially different but no more than 5 hours may be applied toward a degree.

321 Music of the Middle Ages (3)

Prerequisite: Music 101 or consent of department. A study of music and musical thought from the beginning of Christianity to 1450. Gregorian chant, polyphonic music, the *Ars Antiqua*, and the *Ars Nova*.

322 Music of the Renaissance (3)

Prerequisite: Music 101 or consent of department. A study of the theoretical and practical impact of humanism on music, musicians, and musical thought from 1450 to 1600. Sacred and secular music; the rise of an instrumental idiom.

323 Music of the Baroque (3)

Prerequisite: Music 101 or consent of department. A detailed study of music from 1600 to 1750. The rise of the new style, national styles in the seventeenth century, and the culmination of the Baroque period.

324 Music of the Classic Period (3)

Prerequisite: Music 102 or consent of department. A study of the growth of classical style; galant and expressive styles; Mozart, Haydn, and Beethoven.

325 Music of the Romantic Period (3)

Prerequisite: Music 102 or consent of department. Composers, forms, and styles in nineteenth-century music. The literary and social background of musical romanticism.

326 Music of the Twentieth Century (3)

Prerequisite: Music 102 or consent of department. A detailed study of trends in modern music and of influential composers; impressionism, serial composition, electronic music, and other recent techniques.

327 A History of Byzantine Music and Hymnography (3)

Prerequisite: Music 102 or consent of department. A study of the liturgical and secular music of the Byzantine Empire and post-Byzantine period during the Ottoman occupation; a historical investigation of the Oriental and Ancient Greek origins of the music along with an evolution of the types of music and poetical forms. A study of the types of notation and transcription analyses from the Medieval neumes into Western staff notation is included.

375 Musical Aesthetics (3)

Prerequisite: Music 101, or 102, or consent of instructor. (Same as Philosophy 375) Study of such issues as the nature of a musical work, musical expression and representation, interpretation, the conductor's role, the musical canon, audience reception.

400 Directed Research in Music: Variable Topic (1-5)

Prerequisite: Consent of instructor. Directed independent research in music through readings, conferences, writings, and projects. This course may be repeated, but no more than 5 hours may be applied toward a degree.

401 Studies in Style and Performance Practices (3)

Prerequisite: Graduate standing in music. Selected styles, forms, and composers from the various periods in the history of Western art music. Three or more periods or subperiods will be explored to reveal the continuity and contrast in music from the Middle Ages to the twentieth century.

Music**Music Theory and Composition****3 Basic Musicianship (2)**

Prerequisite: Music theory placement examination. An introduction to concepts and notational conventions essential to musical performance. Topics include pitch and time organization, and their appearance on the musical staff. No credit toward any degree.

19 Fundamentals of Music (3)

This course provides basic music vocabulary: scales, intervals, and chords, and systematic instruction in the melodic, rhythmic, and harmonic aspects of music. This course will not apply toward requirements for a music major.

30A Theory of Music I (3)

Prerequisite: Consent of the department. The basic materials of music and their use in analyzing and writing music. Concurrent registration in Music 30B is required for music majors and minors.

30B Aural Training I (1)

Prerequisite: Consent of the department. Systematic instruction in ear training and sight singing. Includes diatonic melodic and rhythmic dictation, chord quality recognition, sight singing of diatonic melodies, and the reading of units and divisions of units in simple and compound meters.

31A Theory of Music II (3)

Prerequisites: Music 30A and Music 30B or consent of department. The study of seventh chords, secondary dominants, and modulation; composition in small forms. Concurrent registration in Music 31B is required for music majors and minors.

31B Aural Training II (1)

Prerequisites: Music 30A and Music 30B or consent of department. The systematic instruction in ear training and sight singing begun in Music 30B is continued. Includes further diatonic melodic and rhythmic dictation, primary chord progressions, sight singing of diatonic melodies, and the reading of unit subdivisions in simple and compound meters.

32 Theory of Jazz (3)

Prerequisite: Music 31 or consent of department. This is a survey analysis of the tonal organization of mainstream jazz music as documented by standard performance practice. Scale formation chordal structure and harmonic function will be examined.

71 Sight Singing I (1)

Rhythmic and tonal sight singing, based on Kodaly methodology. Recommended for music education majors. Will not substitute for music theory sequence.

72 Sight Singing II (1)

Prerequisite: Music 71. A continuation of Music 71.

130A Theory of Music III (3)

Prerequisites: Music 31A and Music 31B or consent of department. Study of chromaticism in eighteenth and nineteenth centuries; composition in simple part forms. Concurrent registration in Music 130B is required for music majors and minors.

130B Aural Training III (1)

Prerequisites: Music 31A and Music 31B or consent of department. Systematic instruction in ear training and sight singing of Music 31B is continued. Chromatic melodic dictation, rhythmic dictation continues, secondary and altered chords in progressions are introduced. Sight singing of chromatic, modulating, and modal melodies, and the reading of syncopated rhythmic patterns are included.

131A Theory of Music IV (3)

Prerequisites: Music 130A and 130B or consent of department. Study of late nineteenth- and early twentieth-century tonal harmony; analysis of large forms; composition in large forms. Concurrent enrollment in 131B is required for all music majors and minors.

131B Aural Training IV (1)

Prerequisites: Music 130A and 130B or consent of department. Systematic instruction in sight singing and advanced aural perceptions. Includes drill in recognition of formal events and key relationships, sight singing of twentieth-century melodies, and rhythmic drills in borrowed divisions and changing meters.

141 Orchestration (3)

Prerequisite: Music 131 or consent of department. Study of the instruments of the brass, woodwind, percussion, and string families; scoring, transcription, and arranging for various instrumental ensembles.

142 Choral Arranging (2)

Prerequisite: Music 131 or consent of department. Study of vocal ranges, characteristics and capabilities at various ages and scoring for choral ensembles comprised of singers in these varying stages of development.

143 Instrumentation and Scoring Technique (2)

Prerequisite: Music 131 or consent of department. Study of the modern orchestral instruments; scoring for various instrumental ensembles with emphasis on idiomatic technique and transcription from keyboard models. This course will not fulfill the music degree requirement for students with instrumental or keyboard emphases.

201 Music Theory Review (3)

Prerequisite: Music 131 or consent of department. A review of techniques employed in the analysis and composition of tonal music. The credit may not be used to satisfy requirements for a music degree.

203 Ear Training and Sight Singing Review (1)

Rhythmic and tonal sight singing based on Kodaly methodology; melodic and harmonic ear training. Does not substitute for music theory sequence. The credit may not be used to satisfy the requirements for a music degree.

300 Directed Studies: Variable Topic (1-5)

Prerequisite: Consent of department. Directed independent study of selected topics in music. May be repeated, if topic is substantially different but no more than 5 hours may be applied toward a degree.

Music

311 Analysis of 20th Century Technique (2)

Prerequisite: Music 131 or consent of department. Study of compositional devices in tonal and atonal music of the twentieth century.

312 Tonal Counterpoint (2)

Prerequisite: Music 131 or consent of department. Study of tonal counterpoint with emphasis on the eighteenth-century style. Composition in two and three parts.

330 Seminar in Composition (2)

Prerequisite: Music 311 or consent of instructor. The study of composition in theory and practice.

400 Directed Research in Music: Variable Topic (1-5)

Prerequisite: Consent of instructor. Directed independent research in music through readings, conferences, writings, and projects. This course may be repeated, but no more than 5 hours may be applied toward a degree.

411 Scoring and Arranging (3)

Prerequisite: Graduate standing in music. Experience in scoring and arranging music for a variety of ensembles.

412 Advanced Composition Techniques (3)

Prerequisite: Graduate standing in music. Analysis and evaluation of student works with an emphasis on the further development of style and compositional technique.

Pedagogy

25 Brass Techniques (2)

Prerequisite: Consent of the department. The objective of this course is to familiarize students with materials and techniques for teaching all brass instruments including trumpet, horn, trombone, euphonium, and tuba in the school setting.

26 Woodwind Techniques (2)

Prerequisite: Consent of the department. The objective of this course is to familiarize students with materials and techniques for teaching all woodwind instruments including flute, clarinet, oboe, bassoon, and saxophone in the school setting.

27 String Techniques (2)

Prerequisite: Consent of the department. The objective of this course is to familiarize students with materials and techniques for teaching all string instruments including violin, viola, cello, and bass in the school setting.

28 Percussion Instrument Techniques (2)

Prerequisite: Consent of the department. The objective of the course is to familiarize students with materials and techniques for teaching all percussion instruments including snare drum, tom-tom, bass drum, cymbals, drumset, timpani, mallet instruments and miscellaneous percussion instruments in the school setting.

123 Intermediate Vocal Techniques (1)

Prerequisite: Permission of department. Instruction for non-voice majors in the choral option of the music education curriculum.

124 Intermediate Vocal Techniques (1)

Prerequisite: Consent of department. Instruction for non-voice majors in the choral option of the music education curriculum.

156 Piano Pedagogy (2)

Prerequisite: Equivalent of Music 45k or permission of instructor. A study of methods, repertoire, and technical problems pertaining to private studio teaching for all levels of performance ability.

221 Pedagogy of Jazz Improvisation (1)

Prerequisites: Music 131 and permission of instructor. Study of the techniques, systems, and instructional materials used in teaching jazz improvisation.

300 Directed Studies: Variable Topic (1-5)

Prerequisite: Consent of department. Directed independent study of selected topics in music. May be repeated, if topic is substantially different but no more than 5 hours may be applied toward a degree.

400 Directed Research in Music: Variable Topic (1-5)

Prerequisite: Consent of instructor. Directed independent research in music through readings, conferences, writings, and projects. This course may be repeated, but no more than 5 hours may be applied toward a degree.

474 Techniques of Group Keyboard Instruction (3)

Prerequisite: Graduate standing in music. A study of techniques, materials, and equipment appropriate for group keyboard instruction.

Practicum

12 Introduction to Modern Dance (2)

Study of the basic techniques of modern dance.

14, 15 Piano Proficiency (2)

Prerequisite: Permission of department. Group instruction for music majors who do not meet beginning keyboard requirements.

20 Jazz Improvisation Laboratory (1)

Prerequisite: Consent of instructor. The study and application of the theoretical, technical, and performance aspects of jazz improvisation. May be repeated for credit.

116, 118, 119, 120 Intermediate Piano Proficiency (1)

Prerequisite: Music 15 or permission of department. Continuation of piano proficiency study.

117 Jazz Keyboard Harmony (1)

Prerequisite: Applied Music 116 or consent of department. Group keyboard instruction in the application of chordal structures and harmonic functions commonly used in mainstream jazz performance.

125 Singer's Diction: Italian and German (1)

Prerequisite: Music 44 or Music 124. A study of Italian and German pronunciation using the International Phonetic Alphabet.

126 Singer's Diction: French, Latin and English (1)

Prerequisite: Music 44 or Music 124. A study of French, Latin and English pronunciation using the International Phonetic Alphabet.

Music**151 Conducting I (2)**

Prerequisite: Music 130. Concurrent registration in Music 161 required for Bachelor of Music in Music Education program. Techniques and problems in conducting.

152a Conducting II—Instrumental (2)

Prerequisite: Music 151. Concurrent registration in Music 162 required for Bachelor of Music in Music Education program. Advanced study of instrumental conducting and rehearsal techniques, score reading, and interpretation.

152b Conducting II—Choral (2)

Prerequisite: Music 151. Concurrent registration in Music 162 required for Bachelor of Music in Music Education program. Advanced study of choral conducting and rehearsal techniques, score reading, and interpretation.

153 Accompanying I (1)

Prerequisite: Consent of department. Accompanying and ensemble practices, including rehearsal techniques, for keyboard majors. Public performance of works studied is required.

154 Accompanying II (1)

Prerequisite: Consent of department. A continuation of Music 153.

155 Accompanying III (1)

Prerequisite: Consent of department. A continuation of Music 154.

161 Elementary School Materials: Conducting Laboratory (1)

Prerequisite: Music 130. Active conducting experience while analyzing and evaluating selected instructional and concert materials for elementary grades.

162 Junior-Senior High School Materials Laboratory (1)

Prerequisite: Music 131. Analysis and evaluation of selected instructional and concert materials for junior and senior high school performance groups.

192 Senior Research (2)

Prerequisite: Consent of department. Required of all senior music majors. Directed readings and research in an area mutually acceptable to the student and instructor.

292 Internship (1-3)

Prerequisites: Senior standing in bachelor of music business emphasis program and permission of the instructor. Supervised experience in the area of the student's career objective, such as music or instrument merchandising, arts management, mass communication, publishing, manufacturing or other, as available. May be repeated once for credit in different area.

300 Directed Studies: Variable Topic (1-5)

Prerequisite: Consent of department. Directed independent study of selected topics in music. May be repeated, if topic is substantially different but no more than 5 hours may be applied toward a degree.

400 Directed Research in Music: Variable Topic (1-5)

Prerequisite: Consent of instructor. Directed independent research in music through readings, conferences, writings, and projects. This course may be repeated, if topic is substantially different, but no more than 5 hours may be applied toward a degree.

402 Choral Literature (3)

Prerequisite: Graduate standing in music. Study of choral literature appropriate for ensembles from elementary to senior high school. Criteria for evaluating choral literature will be developed, and pedagogical implications of choral music as a means of developing comprehensive musicianship will be discussed.

403 Band Literature (3)

Prerequisite: Graduate standing in music. Study of band literature appropriate for soloists and ensembles from elementary to senior high school. Criteria for evaluating the literature will be developed, and related technical problems will be studied.

404 Orchestra Literature (3)

Prerequisite: Graduate standing in music. Study of orchestral literature appropriate for soloists and ensembles from elementary to senior high school. Criteria for evaluating the literature will be developed, and technical problems will be studied.

421 Advanced Conducting (3)

Prerequisite: Graduate standing in music. Conducting techniques, score reading, and interpretation of choral, orchestral, and band literature.

448 Graduate Applied Conducting (1-2)

Prerequisite: Music 421 and consent of the department. Private conducting study of the choral, orchestral, or band repertoire. Does not fulfill the applied music requirement for the Master of Music Education degree.

Philosophy

Faculty

Paul A. Roth, Professor*, Chairperson
Ph.D., University of Chicago

James F. Doyle, Professor Emeritus*
Ph.D., Yale University

Peter Fuss, Professor*
Ph.D., Harvard University

Robert M. Gordon, Professor*
Ph.D., Columbia University

Tommy L. Lott, Professor
Ph.D., University of California-Los Angeles

Ronald Munson, Professor*
Ph.D., Columbia University

Jack Nelson, Professor
Ph.D., University of Chicago

Lynn Hankinson Nelson, Professor
Ph.D., Temple University

John E. Clifford, Associate Professor*
Ph.D., University of California-Los Angeles

David A. Conway, Associate Professor*
Ph.D., Princeton University

Lawrence H. Davis, Associate Professor*
Ph.D., University of Michigan

Piers Rawling, Associate Professor*
Ph.D., University of California-Berkeley

Stephanie A. Ross, Associate Professor*
Ph.D., Harvard University

Sigurdur Kristinsson, Assistant Professor*
Ph.D., Cornell University

Thaddeus Metz, Assistant Professor*
Ph.D., Cornell University

Henry L. Shapiro, Assistant Professor Emeritus*
Ph.D., Columbia University

Donald W. Mertz, Adjunct Assistant Professor
Ph.D., Saint Louis University

Robert Oakes, Adjunct Professor
Ph.D., University of Pennsylvania

David J. Griesedieck, Senior Lecturer
M.A., Princeton University

*members of Graduate Faculty

Philosophy continues to keep alive the tradition begun by Socrates, Plato, and Aristotle of critically examining one's most cherished assumptions. Moreover, it deals with questions that are common to several areas of inquiry, such as art, ethics, the social sciences, the natural sciences, and the various professions. The study of philosophy also encourages logical precision, a heightened awareness of assumptions used in any discussion, and an attitude of both open-mindedness and responsible criticism toward new and unusual ideas. These skills are particularly useful for students planning careers in law, business, computer science, writing, or other fields requiring such disciplines of mind. For these reasons many students have found it useful to combine a major in another field with a major in philosophy. To accommodate such students, the department has a special program for double majors.

The philosophy faculty has an unusually wide range of research interests. Faculty members have written books and articles addressing not only the classical and traditional concerns of philosophy, but 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 philosophy department offers three options leading to the B.A. degree in philosophy: one for students intending to enter graduate school in philosophy; another for students seeking a general liberal arts education as their ultimate academic objective or as preparation for professional degrees such as law; and the third for students taking a double major in philosophy and another discipline. Each option offers a balance between 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. Any course in philosophy will satisfy the humanities requirement. Philosophy 120, Asian Philosophy, also satisfies the College Cultural Diversity requirement. Majors may not count philosophy courses taken on a satisfactory/unsatisfactory basis toward the degree requirements.

Philosophy

Degree Requirements

Bachelor of Arts in Philosophy

Students must complete one of the following programs. At least 30, but not more than 45, hours are required for a major.

Option One Designed to prepare students for graduate work in philosophy, the program requires:

1) **Philosophy 160**, Formal Logic

2) **History of Philosophy** Choose alternative a or b:

a. **Two courses** from any combination of:
Philosophy 101–107 sequence and **one course** from
Philosophy 201–210 sequence
b. **Philosophy 10**, Western Philosophy I, and
Philosophy 11, Western Philosophy II, and
one course from **Philosophy 101–107** sequence
Philosophy 201–210 sequence.

3) Normative Philosophy

One course from the following:
Philosophy 230, Social and Political Philosophy
Philosophy 235, Classical Ethical Theories
Philosophy 238, Recent Ethical Theory
Philosophy 269, The Marxist Heritage

4) **One of the following courses:**

Philosophy 240, Theories of Knowledge
Philosophy 245, Metaphysics

5) **Philosophy and Other Disciplines**

One course from the **Philosophy 270-290** sequence.

6) **Philosophy 391**, Senior Seminar

When appropriate, Philosophy 250, 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 Less restrictive, this option is intended for general liberal arts students or students whose special interests, such as prelaw preparation, do not fall clearly into any one traditional academic department. Requirements include:

1) **Philosophy 160**, Formal Logic

2) **History of Philosophy** Choose alternative a or b:

a. **Two courses** from any combination of:
Philosophy 101–107 sequence
Philosophy 201–210 sequence
b. **Philosophy 10**, Western Philosophy I, and
Philosophy 11, Western Philosophy II, and **one course** from the following:
Philosophy 101–107 sequence
Philosophy 201–210 sequence

3) **Philosophy 391**, Senior Seminar

4) A total of **twelve hours** or more at the 200 level or above.

Option Three Open only to students seeking a double major, the option requires:

1) **Philosophy 60**, Logic and Language, or
Philosophy 160, Formal Logic

2) **History of Philosophy**

Choose alternative a or b:

a. **Two courses** from the following:

Philosophy 101–107 sequence
Philosophy 201–210 sequence
b. **Philosophy 10**, Western Philosophy I, and
Philosophy 11, Western Philosophy II, and **one course** from the following:
Philosophy 101–107 sequence
Philosophy 201–210 sequence

3) **Philosophy 391**, Senior Seminar

4) A total of **nine hours** or more at the 200 level or above.

Departmental Honors Majors with a 3.2 grade point average or higher in philosophy and overall may, with the department's consent, earn departmental honors by:

1) completing at least six hours, but not more than nine, of Philosophy 350, Special Readings;

2) submitting an acceptable thesis before the end of the senior year; and

3) passing an oral examination.

In such cases, the 30 hours required for the major will include the credit earned in Philosophy 350, Special Readings, for the senior thesis.

Related Area Requirements Majors are urged to acquire a familiarity with some other field above the introductory level.

After fulfilling the general education and specific major degree requirements, students are to take the remaining hours required to complete the B.A. degree in philosophy 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, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, business, education, engineering, and interdisciplinary. Transfer students planning to major in philosophy should consult the chairperson of the department as soon as possible in order to have their transcripts evaluated with regard to the above requirement.

Philosophy

Requirements for the Minor Fifteen hours of course work in philosophy are required. Philosophy 60 or Philosophy 160, and four other courses numbered above 100, including two numbered above 200.

Minors are encouraged, though not required, to take Philosophy 391, Senior Seminar.

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.

Philosophy

Course Descriptions

Prerequisites may be waived by consent of the department.

The following courses fulfill the Humanities [H] breadth of study requirements: 10, 11, 30, 50, 60, 85, 90, 101, 102, 103, 104, 105, 107, 120, 150, 151, 153, 154, 156, 160, 165, 174, 185, 201, 202, 205, 206, 207, 208, 210, 215, 230, 235, 238, 240, 245, 250, 260, 265, 269*, 270, 272, 274, 276, 278, 280, 282, 287, 290, 307, 310, 315, 330, 350, 353, 365, 369, 370, 374, 375, 378, 379, 380, 382, 385, 387, 391.

*Course may fulfill the [H] or Social Sciences [SS] breadth of study requirement.

10 Western Philosophy I: Antiquity to the Renaissance (3)

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.

11 Western Philosophy II: Descartes to the Present (3)

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.

30 Approaches to Ethics (3)

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.

50 Major Questions in Philosophy (3)

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.

60 Logic and Language (3)

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.

85 Philosophy of Religion (3)

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.

90 Freshman Seminar (3)

Prerequisites: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to twelve students.

101 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.

102 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.

103 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.

104 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.

105 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.

107 American Philosophy (3)

Prerequisite: Six hours of philosophy or consent of instructor. A study of selected American philosophers.

120 Asian Philosophy (3)

Critical study of selected philosophical classics of India and China. This course fulfills the Cultural Diversity requirement.

150 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.

151 Sexual Ethics (3)

A critical review of what philosophers, both classical and contemporary, have said about sexual experience and its place in our lives. Included will be such topics as sexual desire, sexual perversion, love and commitment, marriage and adultery. Larger questions might include the role of sexual experience in the good life, issues of sexual privacy, and the morality of laws which regulate sexual activity.

Philosophy

153 Philosophy and Feminism (3)

A critical survey of what various philosophers have said about issues of concern to the women's movement. Included will be accounts, both traditional and modern, of such topics as differences between the sexes, sexism in language, oppression, preferential treatment and affirmative action, abortion and rape, and the differences between sexism and racism.

154 Business Ethics (3)

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.

156 Medical Ethics (3)

(Same as Gerontology 156.) An examination of ethical issues in medical practice and research and in public policies affecting health care. Topics include: abortion, euthanasia, medical experimentation, informed consent, and the right to health care.

160 Formal Logic (3)

An introductory study of logical truth and deductive inference, with emphasis on the development and mastery of a formal system.

165 Inductive Logic (3)

An examination of the techniques for evaluating inferences which do not fit deductive frameworks. Examples will be drawn from at least the physical sciences, medicine, ethics, law, and everyday life.

174 Philosophy and Literature (3)

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

185 Topics in Philosophy of Religion (3)

Prerequisite: Philosophy 85 or Philosophy 50 or permission of instructor. A careful examination of a selected topic in philosophy of religion or of philosophical issues arising in a selected religion. The topic or religion to be considered will be announced prior to registration. This course may be repeated for credit on approval by the department.

201 Plato (3)

Prerequisite: Six hours of philosophy or consent of instructor. A study of selected Platonic dialogues.

202 Aristotle (3)

Prerequisite: Six hours of philosophy or consent of instructor. A selective study of Aristotle's major works.

205 The Rationalists (3)

Prerequisite: Six hours of philosophy or consent of instructor. An examination of the philosophies of such major figures as Descartes, Spinoza, and Leibniz.

206 The British Empiricists (3)

Prerequisite: Six hours of philosophy or consent of instructor. An examination of the philosophies of such major figures as Locke, Berkeley, and Hume.

207 Kant (3)

Prerequisite: Six hours of philosophy or consent of instructor. A systematic study of the Critique of Pure Reason.

208 Hegel (3)

Prerequisite: Six hours of philosophy or consent of instructor. A critical study of the writings and influence of Hegel.

210 Significant Figures in Philosophy (3)

Prerequisite: Six hours of philosophy or consent of instructor. A critical study of the work of an important philosopher. The philosopher to be considered will be announced prior to registration. This course may be repeated for credit on approval by the department.

215 Existentialism and Phenomenology (3)

A study of some major representatives of these schools from Kierkegaard to the present.

230 Social and Political Philosophy (3)

An analysis of some fundamental concepts and assumptions involved in the theory and practice of social and political organization.

235 Classical Ethical Theories (3)

Significant contributions to moral philosophy from Plato and Aristotle to Bentham and Mill.

238 Recent Ethical Theory (3)

Prerequisite: Six hours of philosophy 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.

240 Theories of Knowledge (3)

Prerequisite: Six hours of philosophy 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.

245 Metaphysics (3)

Prerequisite: Six hours of philosophy or consent of instructor. An examination of selected metaphysical topics such as substance, universals, causality, necessity, space and time, free will, being, and identity.

250 Special Topics in Philosophy (3)

Prerequisite: Six hours of philosophy or consent of instructor. A critical study of classical and/or contemporary contributions to a selected topic in philosophy. The topic to be considered will be announced prior to registration. This course may be repeated for credit on approval by the department.

Philosophy

251 Feminism and Science (3)

Prerequisite: 6 hours of philosophy, 6 hours of science or consent of instructor. This course will explore major themes and issues in feminist science scholarship, a body of research that focuses on the relationship between science and gender. Feminist research in the philosophy and history of science, and in the biological sciences, are emphasized. Issues include: the nature of objectivity, evidence, and truth; the factors that contribute to the acceptance or rejection of research hypotheses and theories; the nature and consequences of science's cognitive authority; and the relationship between science and values.

260 Advanced Formal Logic (3)

Prerequisite: Philosophy 160 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.

265 Logical Explorations (3)

Prerequisite: Philosophy 160. A variable content course in which techniques of modern logic are used to explore one or more of the following topics: modal logic, the logic of decision and action, value theory and decision analysis, induction and inductive logic, the logic of knowledge and belief, system construction, and contemporary logical theory. The topic will be announced prior to registration. This course may be repeated for credit on approval by the department.

269 The Marxist Heritage (3)

(Same as Political Science 269 and Interdisciplinary 269.) Study of Marx and leading Marxists. Designed to evaluate their influence on recent political, economic, and social thought and institutions.

270 Philosophy of Language (3)

A study of the nature and structure of language and its relationship to selected philosophical problems. Included will be such topics as ordinary language philosophy, significant developments in twentieth-century linguistics, prospects for semantic theory, and a discussion of traditional problems of meaning, reference, and synonymy.

272 Philosophical Issues in Education (3)

A critical study and discussion of selected topics in education, including the distinctive features of education as an activity and achievement, concepts of teaching and learning, relations between education and values, and the functions of a university.

274 Philosophy of Art (3)

(Same as Art 274.) A study of issues concerning the definition of art, meaning and truth in the arts, aesthetic experience, and criticism.

276 Philosophy of History (3)

Discussion and analysis of some philosophical problems raised by historical inquiry, such as subjectivity, relativism, the role of value judgments, and the nature of historical explanation.

278 Philosophy of Mind (3)

Prerequisite: Three hours of philosophy or consent of instructor. The nature of mind and its relation to brain, body, and the person or "self" as a whole. Examination of theories of the mental such as behaviorism and functionalism, and mental phenomena such as consciousness, desire, and the emotions.

280 Philosophy of Science (3)

An examination of logical and methodological problems related to the sciences, including the structure of scientific explanations, laws and theories; methods of concept formation; and confirmation and the problem of induction.

282 Philosophy of Social Science (3)

A detailed analysis of issues raised by the social sciences, including the logical characterization of explanations, predictions, laws, and theories; types of reductionism; objectivity and values; and the empirical basis of the social sciences.

287 Philosophy of Law (3)

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.

290 Philosophical Issues in Other Disciplines (3)

Prerequisite: 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, 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.

307 Topics in American Philosophy (3)

Prerequisite: 9 hours of philosophy, graduate standing, or consent of instructor. Topics vary, but might include, for example, the fusion of moral and metaphysical perspectives in the thought of Jonathon Edwards; the distinctive contributions of the *Federalist Papers* to the classical republican tradition; C.S. Peirce's original critiques of rationalism and determinism; the core concepts of the twentieth century analytic tradition; feminism and deconstructionism in America.

310 Contemporary Philosophers (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 course may be repeated for credit on approval by the department.

315 Ethics in Criminology and Criminal Justice (3)

(Same as Criminology and Criminal Justice 315.) Prerequisite: CCJ 110, 120, 130, 210, 220, Philosophy 153, 154, 156, 230, 235, 238, or consent of instructor. Examination of major ethical issues encountered in criminology and criminal justice research and practice.

Philosophy

330 Topics in Ethical Theory (3)

Prerequisite: Philosophy 235, 238, nine hours of philosophy, 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.

350 Special Readings (1-3)

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

353 Feminist Ethical Theory (3)

Prerequisite: Philosophy 153, six hours of philosophy, or consent of instructor. Examines two classic 18th century statements of sympathy-based moral theory in the works of Adam Smith and David Hume. The course, then looks at a number of contemporary works that attempt to delineate a decisively feminist ethical theory, e.g., the work of Carol Gilligan, Nel Nodding and Virginia Held. The course explores as well differences among female, feminist, and lesbian ethical standpoints.

357 Media Ethics (3)

Prerequisite: nine hours of philosophy or nine hours of communication or consent of instructor. (Same as Communication 357). 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.

365 Theory of Decisions and Games (3)

Prerequisite: Six hours of Philosophy and junior standing, PolSci 401 (or the equivalent) or consent of instructor. (Same as PolSci 306). A study of rational decision making, including games against nature, zero-sum games and social choices. Topics will include the following: expected utility maximization, the Prisoner's Dilemma, Nash equilibria, and Arrow's theorem on the impossibility of a social welfare function. Parts of the course are technical in nature; a prior course in mathematics (e.g., finite mathematics, calculus, statistics or an economics course with a mathematical component), symbolic logic, or some other course with comparable mathematical content is strongly recommended.

369 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.

370 Topics in Philosophy of Language (3)

Prerequisite: Philosophy 270, graduate standing, or consent of instructor. Intensive examination of selected problems encountered in developing philosophical accounts of truth, reference, propositional attitudes, and related concepts.

374 Seminar in Aesthetics (3)

Prerequisite: Philosophy 274, graduate standing, or consent of instructor. Selected topics, such as vision and representation, musical aesthetics, and recent theorists (e.g., Goodman, Dickie, Danto, Margolis). This course may be repeated for credit on approval by the department.

375 Musical Aesthetics (3)

(Same as Music Hist. & Lit. 375.) Prerequisite: Six hours of philosophy or consent of the instructor. Study of such issues as the nature of a musical work, musical expression and representation, interpretation, the conductor's role, the musical canon, audience reception.

378 Seminar in Philosophy and Psychology (3)

Prerequisite: Philosophy 278, graduate standing, or consent of instructor. An examination of selected topics at the interface of philosophical and psychological research. This course may be repeated for credit on approval by the department.

379 Philosophy of Cognitive Science (3)

Prerequisite: Philosophy 278, nine hours of philosophy, or consent of instructor. An exploration of the philosophical foundations and implications of cognitive science, a cooperative effort of philosophers, cognitive psychologists, brain scientists, computer scientists, and others to understand the relationship between the mind and the brain.

380 Seminar in Philosophy of Science (3)

Prerequisite: Philosophy 280, graduate standing, or consent of instructor. Intensive study of selected problems in philosophy of science. This course may be repeated for credit on approval by the department.

382 Seminar in Philosophy of Social Science (3)

Prerequisite: Philosophy 282, graduate standing, or consent of instructor. An intensive examination of selected topics such as the nature of explanation in social science and the postmodernism debate (e.g., Habermas, Foucault, Clifford). This course may be repeated for credit on approval by the department.

385 Seminar in Philosophical Theology (3)

Prerequisite: Philosophy 185, nine hours of philosophy, or consent of instructor. An intensive study of problems arising out of traditional and contemporary philosophical theology.

387 Seminar in Philosophy of Law (3)

Prerequisite: Philosophy 287, 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.

Philosophy

391 Senior Seminar (3)

Prerequisites: Senior standing; at least 12 hours of philosophy at the 100 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.

431 The Nature of Punishment (3)

(Same as CCJ 431.) 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.

433 Philosophy of Law (3)

(Same as CCJ 433.) 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.

455 Ethical and Legal Issues in Criminal Justice (3)

(Same as Criminology and Criminal Justice 455.) Prerequisite: Graduate standing or consent of instructor. Examination of the moral and legal aspects of the policies and practices of criminal justice agencies and agents. Issues may include treatment of offenders, the role of technology, and research and professional ethics.

485 Seminar in the Humanities (3)

A study of selected topics using works of more than one discipline in the humanities.

Physics

Faculty

Richard D. Schwartz, Professor*; Chairperson
Ph.D., University of Washington

Ian Brown, Research Professor of Physics and Chemistry
Ph.D., University of St. Andrews Scotland

Bernard J. Feldman, Professor*
Ph.D., Harvard University

Donald P. Ames, Adjunct Professor
Ph.D., University of Wisconsin

Ta-Pei Cheng, Professor*
Ph.D., Rockefeller University

Ricardo Flores, Associate Professor*
Ph.D., University of California-Santa Cruz

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

Peter H. Handel, Professor*
Ph.D., University of Bucharest

Bob L. Henson, Professor*
Ph.D., Washington University

Lakshminarayanan Vasudevan, Adjunct Associate Professor
Ph.D., University of California-Berkeley

Daniel Leopold, Adjunct Associate Professor
Ph.D., Washington University

Mary Leopold, Adjunct Assistant Professor
Ph.D., Washington University

Jingye Liu, Adjunct Assistant Professor
Ph.D., Arizona State University

Jacob J. Leventhal, Curators' Professor*
Ph.D., University of Florida

Frank E. Moss, Professor*
Ph.D., University of Virginia

Haresh Sirirvardene, Adjunct Assistant Professor
Ph.D., University of Missouri-Rolla

Wilfred H. Sorrell, Associate Professor*
Ph.D., University of Wisconsin

Bruce A. Wilking, Professor*
Ph.D., University of Arizona

*members of Graduate Faculty

General Information

Degrees and Areas of Concentration The physics department offers course work leading to the B.A. in physics, the B.S. in physics, and in cooperation with the School 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 junior and senior students opportunities to participate in teaching and research to help prepare them for the independent effort required in industry or graduate school. The department's faculty members have a diversity of interests and are active in various experimental and theoretical research areas.

Graduate work leading to the master of science in physics is also offered. The M.S. in physics program combines a sound basis in the fundamental areas of classical and modern physics from both a theoretical and an applied perspective. The program is designed to enable students with undergraduate backgrounds in

physics or other technical areas to further their professional development and maintain and improve their technical development. The program is offered almost entirely in the evening to serve students who are employed locally. The department offers the Ph.D. degree in cooperation with the University of Missouri-Rolla physics department. Students must satisfy the UM-Rolla admission standards, and the UM-Rolla Qualifying Exam in Physics is required of UM-St. Louis Ph.D. students. However, all course work and dissertation research may be completed while the student is in residence at UM-St. Louis.

Undergraduate Studies

General Education Requirements: Majors must complete the University and College general education requirements. Any of the following courses may be used to satisfy the physical science requirement:

Astronomy: 1, 11, 12, 22, 50, 51, 121, 301, 322.

Atmospheric Science: 1.

Geology: 1, 2, 53, 201, 290.

Physics: 1, 11, 12, 50, 111, 112, 113, 200, 221, 223, 281, 289, 301, 304, 311, 312, 323, 325, 331, 335, 341, 343, 344, 350, 351, 353, 354, 356, 365, 370, 381, 390, 395.

Degree Requirements

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.

Core Curriculum The following physics courses are required:

111, Mechanics and Heat

112, Electricity, Magnetism, and Optics

200, Survey of Theoretical Physics

221, Mechanics

223, Electricity and Magnetism

231, Introduction to Modern Physics I

Also required are:

Math 80, Analytic Geometry and Calculus I

Math 175, Analytic Geometry and Calculus II

Math 180, Analytic Geometry and Calculus III

Math 202, Introduction to Differential Equations

Chem 11, Introductory Chemistry I or equivalent

Computer Science 125, Introduction to Computer Science

Note Students are urged to begin the calculus sequence (Math 80, 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 Computers Science 125.

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 200 or 300 level must be completed. At least 31 hours of physics courses, but no more than 45 hours, are required.

Physics

Bachelor of Science in Physics The B.S. degree provides students with four options: general physics, astrophysics, engineering physics, or medical physics.

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 48 hours, but no more than 51, are required. **In addition to the core curriculum, the following physics courses are required:**

304, Modern Electronics
311, Advanced Physics Laboratory I
323, Modern Optics
325, Topics in Modern Applied Physics
331, Introduction to Quantum Mechanics
341, Thermal and Statistical Physics
and three electives at the 200 or 300 level.

Also required are:

Math

245, Elementary Linear Algebra
303, Applied Mathematics II

Chem

12, Introductory Chemistry II, or equivalent
and one elective in math or computer science.

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 courses are required:

Physics

323, Modern Optics
331, Introduction to Quantum Mechanics

Astronomy

50, Introduction to Astronomy I
51, Introduction to Astronomy II
301, Astrophysics
322, Observational Astronomy

and two physics electives at the 200 or 300 level. With permission of the astronomy adviser, there may be substitution of Astronomy 1, 11, or 12 for 50 or 51.

Also required are:

Math 303, Applied Mathematics I
and one additional elective in mathematics or computer science.

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 46 hours, but no more than 51, are required. In addition to the core curriculum, the following courses are required:

Engineering

30, Engineering Graphics

124, Circuits I

144, Statics

145, Dynamics

Physics

304, Modern Electronics

323, Modern Optics

325, Topics in Modern Applied Physics

341, Thermal and Statistical Physics

Also required are **two additional courses** in computer science or numerical analysis.

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 physics core curriculum, the following physics and biology courses are required:

Physics

304, Modern Electronics

Biology

11, Introductory Biology I

12, Introductory Biology II

and two additional physics electives at the 200 or 300 level.

Also required are:

Chem

12, Introductory Chemistry II

261, Structural Organic Chemistry

262, Organic Reactions

263, Techniques of Organic Chemistry

Note: With approval of the Chairperson of Physics and Astronomy, students with strong mathematical preparations, who have already completed the Physics 11 and Physics 12 sequence in basic physics may substitute these courses for two required core courses Physics 111 and Physics 112, respectively. However, this is not the recommended route because Physics 111 and 112 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.

B.S. degree in Secondary Education with an emphasis in science-physics and certification in Unified Science with an endorsement in physics.

In addition to the general requirements for the B.S. degree in secondary education, students must complete the following:

Physics

Science Core Courses:

Philosophy 280, Philosophy of Science

Biology

11, Introductory Biology I

12, Introductory Biology II

Chemistry

11, Introductory Chemistry I

12, Introductory Chemistry II

Geology 1, General Geology

Atmospheric Science 1, Elementary Meteorology

Biology 120, Environmental Biology or another environmental science

Physics

111, Physics: Mechanics and Heat

112, Physics: Electricity, Magnetism, and Optics

Physics Endorsement

Physics

200, Survey of Theoretical Physics

221, Mechanics

223, Electricity and Magnetism

231, Introduction to Modern Physics

304, Modern Electronics

311, Advanced Physics Laboratory I

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:

111, Mechanics and Heat

112, Electricity, Magnetism, and Optics

200, Survey of Theoretical Physics

and two additional emphasis courses chosen from the following physics courses:

221, Mechanics

223, Electricity and Magnetism

231, Introduction to Modern Physics

304, Modern Electronics

A GPA of at least 2.0 is required in courses presented for a minor. It is required that a student complete a minimum of six hours of graded work in 100 level or above courses on the UM-St. Louis campus.

Graduate Studies

Admission Requirements

In addition to meeting the Graduate School general admission requirements, applicants must submit scores from the Graduate Record Exam (GRE) physics test.

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 400 level; of the latter 15, a maximum of three credit hours may be counted for thesis research. The writing of a thesis is optional. 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 72 hours with satisfactory performance. Residency requirement of three years/six semesters (for those with master's degree, two years/four semesters) at UM-St. Louis and/or cooperating UM-Rolla campus. Ph.D. qualifying exam, dissertation, dissertation exam administered in cooperation with UM-Rolla. Language requirement—pass examination or equivalent of one year collegiate level course work with grade of B or better; overall requirement of B grades or better. Thesis: Thesis may be written in absentia.

Special Equipment, Facilities, or Programs

The supporting facilities of the University of Missouri-St. Louis include a modern library with holdings in excess of 390,000 bound volumes, a microtext department containing 72,000 titles, and approximately 87,000 titles in the government documents section. Campus computing facilities include a UNIX system and work stations. The department maintains a workstation for image processing. The physics department operates a machine shop and an electronics shop. In addition, the department maintains a library containing some of the most frequently used physics journals.

Typical Program:

First Semester

Physics: 400-level and 300-level course

Total: 6 hours

Second Semester

Physics: 400-level and 300-level course

Total: 6 hours

Third Semester

Physics: 400-level and 300-level course

Physics 490, Thesis Research or Seminar

Total: 9 hours

Fourth Semester

Physics: 400-level and 300-level course

Physics 490 Thesis Research or Seminar

Total: 9 hours

Physics

Career Outlook

Many of our students have been successful in subsequent graduate studies in astronomy and meteorology, as well as in physics. Our alumni have pursued graduate studies and earned doctorate degrees at institutions such as Cornell University, University of Wisconsin, Washington University, University of Chicago, and others. The many students who elected a career in industry are now working in a variety of settings for such firms as International Business Machines, Emerson Electric, Southwestern Bell, Hewlett-Packard, Boeing, and the National Center for Atmospheric Research. Several former students are currently teaching physics in high schools around the St. Louis area.

Physics

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.

The following courses fulfill the Natural Sciences and Mathematics [SM] breadth of study requirements:

ASTRONOMY: 1, 11, 12, 22, 50, 51, 121, 301, 322.

ATMOSPHERIC SCIENCE: 1.

GEOLOGY: 1, 2, 53, 290. PHYSICS: 1, 11, 12, 50, 111, 112, 113, 200, 221, 223, 231, 232, 281, 289, 301, 304, 311, 323, 325, 331, 335, 341, 343, 344, 350, 351, 353, 354, 356, 357, 365, 370, 381, 390, 395.

Astronomy

1 Cosmic Evolution/Introductory Astronomy (4)

Planets: A brief survey of their motions and properties. Stars: Observations, including stellar spectra and colors; stellar evolution, and star clusters. Galaxies: Structure and content of the Milky Way Galaxy, its relationship to other galaxies. Cosmology: The origin and evolution of the universe. Three lectures and two multimedia laboratories.

11 Planets and Life in the Universe (3)

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 lecture hours per week.

12 The Violent Universe and the New Astronomy (3)

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 lecture hours and one observing session per week.

22 Practical Astronomy (2)

Prerequisite: Astronomy 1 or 11. Designed to acquaint students with observational astronomy: constellations, planets, stars, nebulae, and galaxies. Students will become familiar with operation of a telescope and its use in visual observation and photography. The basics of astronomical nomenclature and coordinates will also be emphasized. This course is primarily for nonscientists.

50 Introduction to Astronomy I (3)

Prerequisites: Math 30 and 35. A survey of the history of astronomy from the ancient times to the present. The motions of the planets and stars, real and apparent, tools of the astronomer. A study of our solar system, concentrating on results of the space program.

51 Introduction to Astronomy II (3)

Prerequisites: Math 30 and 35. A survey of astronomy and cosmology focusing on discoveries and phenomena outside of the solar system: stars, galaxies, quasars, etc.

121 The Search for Extraterrestrial Life (3)

Prerequisite: Astronomy 1 or 11. Are we alone? The possibility of life in the universe in addition to our own will be explored. Our discussion of the chances for extraterrestrial life will be built around the current theories of chemical, biological, and cultural evolution which have led to our own technological civilization on Earth. Strategies for communication with extraterrestrial intelligence will be discussed.

301 Astrophysics (3)

Prerequisite: Physics 231 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.

322 Observational Astronomy (4)

Prerequisites: Astronomy 50, Astronomy 51, and Math 180 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

1 Elementary Meteorology (4)

Prerequisite: High school physics or chemistry. An elementary survey of atmospheric phenomena intended to fulfill the science requirement. Topics included are temperature, pressure, and moisture distributions in the atmosphere and dynamical effects such as radiation, stability, storms, and general circulation. Applications to weather forecasting. Three hours of lecture and two hours of laboratory per week.

Geology

1 General Geology (4)

Earth materials and processes, including geological aspects of the resource/energy problem. Laboratory involves identification of common rocks and minerals.

2 Historical Geology (4)

Prerequisite: Geology 1. 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.

53 Oceanography (3)

The atmospheric and ocean circulations; the chemistry and geology of the deep sea; and their effects on the distribution of marine organisms.

Physics

201 Stratigraphy and Sedimentation (3)

Prerequisites: Geology 1 and 2. Principles of stratigraphy, with an introduction to sedimentary processes. The major sedimentary sequences of North America will be examined, with origins interpreted from a plate tectonics perspective.

290 Research (1-3)

Prerequisite: Consent of instructor. Independent geology research projects arranged between student and instructor. Hours arranged.

Physics

1 Foundations of Modern Physical Theory I (4)

Prerequisite: Satisfactory score on math placement test. An introduction to some of the major ideas, principles, and basic laws directing the development of contemporary physics. The course work consists of two general lectures each week in which the material is introduced, one discussion session, and one two-hour multimedia laboratory.

11 Basic Physics (4)

Prerequisite: Math 80 or 100 may be taken concurrently. A survey course specifically designed for students in health and life sciences covering such topics as classical mechanics, heat, sound, electricity, magnetism, light, and radiation. Will not fulfill the Physics 111 requirement for physics, chemistry, and engineering majors. Three hours of lecture and two hours of laboratory.

12 Basic Physics (4)

Prerequisite: Physics 11. Continuation of Physics 11.

50 Introduction to Physics (4)

Prerequisite: Math 30. A laboratory survey course which introduces students to the fields of mechanics, heat and thermodynamics, optics, electricity and magnetism, and modern physics at the pre-calculus level. A problem-solving course, recommended for science and engineering students who have no physics background or who desire additional preparation for Physics 111. Three hours of lecture and two hours of laboratory per week.

111 Physics: Mechanics and Heat (5)

Prerequisite: Math 80 or 100. Physics 1, or Chem 12, 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 hours of lecture, one hour of discussion, and two hours of laboratory per week.

112 Physics: Electricity, Magnetism, and Optics (5)

Prerequisites: Physics 111, and Math 100 or 175. 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 hours of lecture, one hour of discussion, and two hours of laboratory per week.

113 Physics: The Structure of Matter (3)

Prerequisite: Physics 112. A phenomenological introduction to selected concepts and laws of physics as they are applied to the structure of matter. Elements of atomic, nuclear, and molecular physics will be discussed. Three hours of lecture plus one hour of discussion per week.

200 Survey of Theoretical Physics (3)

Prerequisites: Physics 112 and Math 180. Mathematical techniques specifically used in the study of mechanics, electricity, magnetism, and atomic physics are developed in the context of various physical problems. In particular, statics problems in electricity and magnetism are emphasized as applications of vector analysis, solutions of Laplace's equation, coordinate systems, and numerical techniques.

221 Mechanics (3)

Prerequisites: Physics 200 and Math 202. Math 202 may be taken concurrently. Advanced course covering rigid-body dynamics, damped and undamped oscillatory motion, with an introduction of Lagrange's equations and variational principles. Three hours of lecture and one hour of discussion per week.

223 Electricity and Magnetism (3)

Prerequisites: Physics 200 and Math 202 (Math 202 may be taken concurrently). Electromagnetic fields, including electrostatics, dielectric materials, solution to Laplace's equation, currents and magnetic fields, motion to charged particles, and introduction to electromagnetic waves. Three hours of lecture and one hour of discussion per week.

231 Introduction to Modern Physics I (3)

Prerequisite: Physics 111, 112, and Math 202 (may be taken concurrently) and Physics 200 strongly recommended. Photons and the wave nature of particles, wave mechanics, Schrodinger's equations, with applications to atomic physics; and radiation; the physics of solids; elementary particles; relativity; health physics. Three hours of lecture and one discussion section per week.

232 Introduction to Modern Physics II (3)

Prerequisite: Physics 231. Continuation of Physics 231

280 Curriculum and Methods of Teaching Physical Sciences (3)

(Same as SEC ED 240.) Prerequisites: SEC ED 213 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.

281 Directed Readings in Physics (1-5)

Prerequisite: Consent of instructor. A study of the literature of physics. A paper is required on an approved topic. Topics must be substantially different. Hours arranged.

Physics

283 Chemistry/Physics Teaching Intern Seminar (1)
(Same as Chemistry 283.) Prerequisite: Chem 280 or Physics 280. 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 290. One hour discussion per week.

289 Seminar (1)
Presentation of selected papers by students and faculty members at weekly meetings. May be taken twice for credit.

301 Introduction to Mathematical Physics (3)
Prerequisites: Sixteen hours of physics. A course covering mathematical techniques as applied to the equations of theoretical physics, calculus of variations, Green's functions; linear vector spaces, and integral equations. Three hours of lecture and one hour of discussion per week.

304 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. Three hours of lecture/laboratory per week.

311 Advanced Physics Laboratory I (3)
Prerequisites: Advanced standing with at least nine completed hours of Physics at or above the 200 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.

323 Modern Optics (3)
Prerequisite: Physics 223. A study of modern optics including diffraction theory, polarization, light propagation in solids, quantum optics, and coherence. Three hours of lecture and one discussion per week.

325 Topics in Modern Applied Physics (3)
Prerequisites: Physics 304 and Math 202. Topics are taken from modern applications of physics which may include linear analysis, nonlinear analysis, Fourier transform spectroscopy, wavelet analysis, noise and fluctuation phenomena, material science, physical electronics, optical techniques, and scanning tip microscopy. Three hours of lecture and one hour of discussion per week.

331 Introduction to Quantum Mechanics (3)
Prerequisites: Physics 200 and 231. Photons and the wave nature of particles; wave mechanics, Schrodinger equation, and applications to single systems, atomic physics and spectroscopy; molecular physics, nuclear models and reactions, the physics of solids; elementary particles, relativity. Three hours of lecture and one discussion section per week.

335 Atomic and Nuclear Physics (3)
Prerequisite: Physics 331. Application of Schrodinger's equation to hydrogen-like atoms; atomic structure and spectra; nuclear masses, energy levels; alpha, beta, and gamma radiation, nuclear reactions, and models of the nucleus. Three hours of lecture and one hour of discussion per week.

341 Thermal and Statistical Physics (3)
Prerequisites: Math 180 and Physics 231. Introduction to statistical mechanics, laws of thermodynamics, kinetic theory. Three hours of lecture and one hour of discussion per week.

343 Selected Topics in Physics I (3)
Prerequisites: Physics 221, 223, 225, 231, 341, and Math 316 (Math 316 may be taken concurrently). Topics include special phenomena such as scattering of waves, thermal motion in gases, atmospheric disturbances treated by methods of advanced mechanics, electromagnetism, and quantum mechanics. Three hours of lecture and one hour of discussion per week.

344 Selected Topics in Physics II (3)
Prerequisite: Physics 343. Continuation of Physics 343. Three hours of lecture and one hour of discussion per week.

350 Computational Physics (3)
Prerequisites: Computer Science 125, plus Physics 221, 223, and 231. Computer analysis in physics; solutions of eigenvalue problems; coupled differential equations; and writing of FORTRAN programs.

351 Elementary Solid State Physics (3)
Prerequisite: Physics 331. 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 hours of lecture and one hour of discussion per week.

353 Physics of Fluids (3)
Prerequisites: Physics 221, 223, and 341, or consent of instructor. Topics from the theory of gases, liquids, or plasmas. Dynamical properties of one of these forms of matter will be developed with contemporary applications stressed.

354 Atmospheric Physics (3)
Prerequisite: Physics 341. Topics from dynamic and physical meteorology including the ionosphere. Application of thermodynamics, optics, radiation, and mechanics to atmospheric phenomena.

283 Chemistry/Physics Teaching Intern Seminar (1)
 (Same as Chemistry 283.) Prerequisite: Chem 280 or Physics 280. 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 290. One hour discussion per week.

289 Seminar (1)
 Presentation of selected papers by students and faculty members at weekly meetings. May be taken twice for credit.

301 Introduction to Mathematical Physics (3)
 Prerequisite: Sixteen hours of physics. A course covering mathematical techniques as applied to the equations of theoretical physics, calculus of variations, Green's functions, linear vector spaces, and integral equations. Three hours of lecture and one hour of discussion per week.

304 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. Three hours of lecture/laboratory per week.

311 Advanced Physics Laboratory I (3)
 Prerequisite: Advanced standing with at least nine completed hours of Physics at or above the 200 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.

323 Modern Optics (3)
 Prerequisite: Physics 223. A study of modern optics including diffraction theory, polarization, light propagation in solids, quantum optics, and coherence. Three hours of lecture and one discussion per week.

325 Topics in Modern Applied Physics (3)
 Prerequisite: Physics 304 and Math 202. Topics are taken from modern applications of physics which may include linear analysis, nonlinear analysis, Fourier transform spectroscopy, wavelet analysis, noise and fluctuation phenomena, material science, physical electronics, optical techniques, and scanning tip microscopy. Three hours of lecture and one hour of discussion per week.

331 Introduction to Quantum Mechanics (3)
 Prerequisite: Physics 200 and 231. Photons and the wave nature of particles; wave mechanics; Schrodinger equation, and applications to single systems, atomic physics and spectroscopy; molecular physics, nuclear models and reactions, the physics of solids; elementary particles, relativity. Three hours of lecture and one discussion section per week.

335 Atomic and Nuclear Physics (3)
 Prerequisite: Physics 331. Application of Schrodinger's equation to hydrogen-like atoms; atomic structure and spectra; nuclear masses, energy levels; alpha, beta, and gamma radiation, nuclear reactions, and models of the nucleus. Three hours of lecture and one hour of discussion per week.

341 Thermal and Statistical Physics (3)
 Prerequisite: Math 180 and Physics 231. Introduction to statistical mechanics, laws of thermodynamics, kinetic theory. Three hours of lecture and one hour of discussion per week.

343 Selected Topics in Physics I (3)
 Prerequisite: Physics 221, 222, 225, 231, 341, and Math 316 (Math 316 may be taken concurrently). Topics include special phenomena such as scattering of waves, thermal motion in gases, atmospheric disturbances treated by methods of advanced mechanics. Three hours of lecture and one hour of discussion per week.

344 Selected Topics in Physics II (3)
 Prerequisite: Physics 343. Continuation of Physics 343. Three hours of lecture and one hour of discussion per week.

350 Computational Physics (3)
 Prerequisite: Computer Science 125, plus Physics 221, 223, and 231. Computer analysis in physics; solutions of eigenvalue problems; coupled differential equations; and writing of FORTRAN programs.

351 Elementary Solid State Physics (3)
 Prerequisite: Physics 331. 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 hours of lecture and one hour of discussion per week.

353 Physics of Fluids (3)
 Prerequisite: Physics 221, 223, and 341, or consent of instructor. Topics from the theory of gases, liquids, or plasmas. Dynamical properties of one of these forms of matter will be developed with contemporary applications stressed.

354 Atmospheric Physics (3)
 Prerequisite: Physics 341. Topics from dynamic and physical meteorology including the ionosphere. Application of thermodynamics, optics, radiation, and mechanics to atmospheric phenomena.

Physics**356 Quantum Optics (3)**

Prerequisites: Physics 200 and 231, and Math 202. Review of atomic theory and spectroscopy. Selected applications to modern optical phenomena such as optical pumping, lasers, masers, Mossbauer effect, and holography.

357 Subatomic Physics (3)

Prerequisites: Physics 223, 231 and 331, 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 hours of lecture and one hour of discussion per week.

365 Introduction to Plasma Physics (3)

Prerequisites: Physics 223 and 341. A study of the nonlinear collective interactions of ions, electrons, and neutral molecules with each other and with electric and magnetic fields. Topics include plasma confinement and stability, electrical discharges and ionization, kinetic theory of plasma transport, plasma waves and radiation, and controlled fusion. Solutions of the Boltzmann, Fokker-Planck, and Vlasov equations are discussed and methods of advanced electromagnetism and statistical physics are utilized. Three hours of lecture and one hour of discussion per week.

370 Relativity and Cosmology (3)

Prerequisites: Physics 221, 223, and 231. 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 hours of lecture and one hour of discussion per week.

381 Directed Readings in Physics (1-10)

Prerequisite: Consent of instructor. A study of special topics in physics for senior undergraduates or graduate students.

390 Research (1-10)

Prerequisite: Consent of department. Independent research projects arranged between student and instructor. Hours arranged.

395 Principles of Mathematical Physics (4)

Boundary value problems; Green's function techniques; and introduction to group theory with emphasis on representations of Lie Algebras.

400 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.

401 Special Topics (1-4)

Prerequisite: Consent of instructor. This course is designed to give the department an opportunity to test a new course.

404 Experimental Research Techniques (3)

Prerequisite: Graduate standing. Experiments in various fields of physics designed to stress techniques and experimental approach.

405 Theoretical Physics I (3)

Prerequisites: Physics 221 and 223 or equivalent. Newton's laws applied to simple systems, central force problem, variational principles. Lagrangian and Hamiltonian formulations, electrostatics. Maxwell field operations, wave propagation.

406 Theoretical Physics II (3)

Prerequisites: Physics 231, 341, or equivalent, and Physics 405. Schroedinger equation and wave mechanical treatment of simple systems: perturbation theory; identical particles and spin. Laws of thermodynamics, canonical systems; thermodynamic potentials and Maxwell equations, open systems, and chemical potential. Clausius-Clapeyron equation.

407 Modern Physics (3)

Prerequisite: Physics 331. A study of some of the more important concepts of modern physics.

409 Theoretical Mechanics I (3)

Prerequisite: Physics 221. Classical mechanics, methods of Newton, Lagrange, and Hamilton, applied to motion of particles and rigid bodies, elasticity, and hydrodynamics.

410 Seminar (variable hours)

Prerequisite: Approval of department chair. Discussion of current topics.

411 Electrodynamics I (3)

Prerequisite: Physics 223. 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.

413 Statistical Mechanics (3)

Prerequisites: Physics 331 and 341. A study of statistical ensembles; Maxwell-Boltzmann, Fermi-Dirac and Einstein-Bose distribution laws, application to some simple physical systems.

415 Theoretical Mechanics II (3)

Prerequisite: Physics 409. Transformation theory of mechanics, Lagrange and Poisson brackets, Hamilton-Jacobi theory, introduction to the classical theory of fields.

417 Advanced Statistical Mechanics (3)

Prerequisite: Physics 413. A continuation of Physics 413. Further applications as to such topics as the imperfect gas, condensation and the critical region, magnetism, liquid state, and transport phenomena.

423 Electrodynamics II (3)

Prerequisite: Physics 411. A continuation of Physics 411. 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.