353 Internship in Women's and Gender Studies (3)
Prerequisite: 90 hours., 2.5 GPA, 12 WGS hrs. Internship would place the student in a profit or nonprofit setting for approximately ten hours a week in an internship structured and supervised by the Institute; consent of Director required; may include biweekly seminar. Student must present appropriate course background for either option, plus the above pre/co-requisites.

390 Independent Studies in Photographic Studies (1-10)
Prerequisites: Twelve hours completed in photographic studies. Integrated individual projects conducted under photographic studies committee and departmental faculty supervision.

401 Inquiries in Women's and Gender Studies (3)
Introduces graduate students to the field of women's studies, with particular focus on its vocabulary and evolution, its location within and relationship to the academy, and its predominant theoretical and methodological frameworks. Specific content will vary year to year. Strongly encouraged for graduate students in Women's and Gender Studies.

450 Seminar in Women's and Gender Studies (3)
Critical examination of advanced topics in the humanities, social sciences, or natural sciences from women's and gender studies perspectives. May be taken more than once provided that the subject matter is different each time the seminar is taken.

452 Special Readings in Women's Studies/Gender Studies (3)
Prerequisite: Admission to Graduate Certificate program and consent of instructor. Directed independent work on a selected Women's and Gender Studies topic through readings, research, reports, and/or conferences.

To find the descriptions of the courses listed within a specific certificate program, refer to the individual departments.

Certificate programs are offered in biochemistry, biotechnology, photographic studies, studies in religions, women's studies, writing, and East Asian, Latin American, European, and international studies. These programs, which usually combine course offerings from different departments, make it possible for students to earn the equivalent of a minor in a given area in addition to their major.

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 either within a biology major or a chemistry major. The requirements for earning a biochemistry certificate within the biology major are:

Biology
11, Introductory Biology I
12, Introductory Biology II
224, Genetics
232, Cell Structure and Function
371, Biochemistry **or**
Chem 371, Biochemistry
375, Techniques in Biochemistry (lab)
376, Topics in Biochemistry **or**
Chem 372, Advanced Biochemistry
378, Protein Biochemistry Lab **or**
Chem 373, Biological Techniques
389, Senior Seminar

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 three of the following **biology** courses:
216, Microbiology
218, Microbiology Laboratory
235, Development
310, Cell Physiology
317, Immunobiology
326, Gene Expression in Eukaryotes
327, Introduction to Biotechnology
335, Molecular Cell Biology
338,Gene Expression in Prokaryotes

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
327, Introduction to Biotechnology
375, Techniques in Biochemistry

One of the following two **biology** courses:
326, Gene Expression in Eukaryotes
338, Gene Expression in Prokaryotes

One of the following five **biology** courses:
317, Immunobiology
328, Techniques in Molecular Biology
334, Virology
335, Molecular Cell Biology
376, Topics in Biochemistry, **or**
Chemistry
372, Advanced Biochemistry

Photographic Studies Certificate

UM-St. Louis students, graduates, and postbaccalaureate 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
160, Photography II
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

Students must also take at least one 3-hour course selected from the following departmental offerings: (New courses will be reviewed periodically for inclusion.)
Art
5, Introduction to Art
161, Introduction to Digital Photography
261, Color Photography I
262, Non-Silver Photography
263, Photography Since 1945
264, Video Art I
274/Philosophy 274, Philosophy of Art
277, Printmaking: Photolithography
360, Photography III
361, Color Photography II
364, Video Art II
390, Special Studies
391, Advanced Problems in Photography I
392, Advanced Problems in Photography II

Biology 360, Techniques in Electron Microscopy

Comm
50, Introduction to Mass Media
70, Introduction to Cinema
210, Television Production
English
214/Comm 214, News Writing
215, Feature Writing
History
168, Photohistory
Interdisciplinary
40, The Black World
365, Seminar in Photographic Studies
390, Independent Studies in Photographic Studies
Psych
213, Principles of Perception
355, Psychology of Perception
Extension course, Professional Photography Seminar

Studies in Religions Certificate

A certificate in studies in religions requires the completion of 18 hours with a grade of C or better.

Courses must be chosen from two or more departments (interdisciplinary offerings excluded), and the program must include two or more courses which focus on different major religious traditions. (Courses which fulfill this requirement are marked with an asterisk [*] in the list below.)

In addition, students are encouraged to broaden their understanding of religions and religious experience by enrolling in several courses in which these subjects are studied in philosophical or cultural contexts.

Students must obtain the approval of the coordinator of studies in religions before completing 12 hours toward this certificate.

Requirements
Students must take 18 hours chosen from the following list in accordance with the guidelines above:

Anthropology
244, Religion, Magic, and Science
273, Archaeology and Cultures of the Biblical World
Art
125, Medieval Art
***114**, Early Christian Art and Archaeology
English
***13**, Topics in Literature
***123**, Jewish Literature
***124**, Literature of the New Testament
***125**, Literature of the Old Testament
***391**, Special Topics in Jewish Literature
***395**, Special Topics in Literature
History
***252**, The World of Islam
***334**, History of the Church: Early Chrisitianity
***335**, History of the Church: The Middle Ages
Music
103, Music in Religion
Philosophy
85, Philosophy of Religion
102, Medieval Philosophy
120, Asian Philosophy
***185**, Topics in Philosophy of Religion
385, Seminar in Philosophical Theology
Political Science
165, American Political Thought
261, Ancient and Medieval Political Thought
Sociology
264, The Sociology of Religion

Institute for Women's and Gender Studies Certificate

Faculty

Zuleyma Tang Martinez, Professor of Biology
Ph.D., University of California-Berkeley
Joyce Mushaben, Professor of Political Science
Ph.D., Indiana University
Carol K. Peck, Professor of Optometry
Ph.D., University of California-Los Angeles
Stephanie Ross, Professor of Philosophy
Ph.D., Harvard University
Victoria Sork, Professor of Biology
Ph.D., University of Michigan
Jayne Stake, Professor of Psychology
Ph.D., Arizona State University
Sally Barr Ebest, Associate Professor of English
Ph.D., University of Indiana
Kathy Gentile, Associate Professor of English*
Ph.D., University of Oregon
Barbara Kachur, Associate Professor of Communication
Ph.D., Ohio State University
Ph.D., University of Illinois-Urbana
Margaret Sherraden, Associate Professor of Social Work
Ph.D., Washington University
Virginia Navarro, Assistant Professor in Educational Psychology
Ph.D., Washington University
Nanora Sweet, Assistant Professor of English,*
Ph.D., University of Michigan
Laura Westhoff, Assistant Professor of History and Education
Ph.D., Washington Universtiy,
Linda Kick, Lecturer in English
M.A., University of Toronto, M.A., University of Missouri-Columbia
Margaret Phillips, Lecturer in Foreign Languages
Ph.D., Saint Louis University
Beverly Sporleder, Lecturer in Social Work
MSW, Washington University
Jeanne Sevelius, Graduate Administrative Assistant
M.S., University of Missouri-St. Louis
*Joint appointees in Women's and Gender Studies

The Institute for Women's and Gender Studies draws upon the rich body of interdisciplinary feminist scholarship to investigate emerging theories and research on women and gender. Courses examine women's lives, roles, and contributions among different cultures and times, enabling students to broaden their educational experience and develop new insights into their own lives and aspirations. The program offers both day and evening courses.

The faculty and students in the Institute for Women's and Gender Studies program believe in cooperative education. Classes promote the exchange of knowledge among women
and men of different classes, races, sexual orientations, and social conditions.
The Institute for Women's and Gender Studies program offers an undergraduate certificate which is similar to a minor. (For graduate study, see listing for Institute for Women's and Gender Studies Graduate Certificate.) A certificate is meant to supplement a student's traditional academic major, to encourage a reassessment of gender and of women's roles in society, and to facilitate career goals that focus on women's and gender issues. The opportunity to earn a certificate is available to all undergraduates pursuing a degree at UM-St. Louis and to individuals with a bachelor's degree from any university.

Institute for Women's and Gender Studies courses are open to all students, whether or not they are working toward a certificate.

Candidates for the certificate should register with the Institute for Women's and Gender Studies program after they have taken one or two courses. To register, students should complete the certificate form available from any institute faculty or from the institute office. Students interested in the program should contact the director of the program or any member of the women's studies faculty.

Requirements

A student must complete 18 hours in women's studies courses, including:

Interdisciplinary 102, Women, Gender, and Diversity

and either a 300-level course in Women's and Gender Studies or an independent study or internship (3 hours) to be taken in the junior or senior year. Students choosing the independent study option will write a research paper on some aspect of women's and gender studies.

Also required are four additional courses chosen from the following list. These shall be distributed among at least two of the following areas: social science, humanities, and natural science. They should also be distributed among at least three academic departments. No more than 3 hours may be taken on a satisfactory/unsatisfactory basis.

Anthropology
21, The Body in Culture
41, Sex and Gender across Cultures
235, Women in Subsaharan Africa
Art 276, Women and the Visual Arts

Biology/Psych 140, Female Sexuality

Business 295, Problems in Management: Women in the Profit Sector

Comm 337, Male/Female Communication

Criminology and Criminal Justice 325, Gender, Crime, and Justice
Economics 262, Economics of Women, Men, and Work

English
13, Topics in Literature (when appropriate topic)
280, Topics in Women and Literature
380, Studies in Women and Literature

History
007, History of Women in the United States
087, Women in the Ancient World
201, History of Women in Comparative Cultures
220, History of Feminism in Western Society
300, Selected Topics in History (as appropriate)
315, History of Women in the United States
318, African American Women's History
390, Directed Readings

Honors
200 level Inquiries courses (when appropriate)
300 level Seminars (when appropriate)

Interdisciplinary
102, Women, Gender, and Diversity
150, Special Topics in Women's and Gender Studies
350, Topics in Women's and Gender Studies
351, Theories of Feminism
352, Independent Studies in Women's and Gender Studies
353, Internship in Women's and Gender Studies

Music 108, Women in Music

Nursing 365, Women's Issues in Health Care

Philosophy
153, Philosophy and Feminism
251, Gender and Science

Political Science
129, Women and the Law
190, Studies in Political Science (when appropriate)
238, Women in U.S. Politics
257, Gender, Race, and Public Policy
259, Politics, Leadership, and the Global Gender Gap
268, Feminist Political Theory

Psychology
140, Female Sexuality
230, Psychology of Women
232, Psychology of Victims
295, Selected Projects in Field Placement (when appropriate)

Social Work
312, Women's Social Issues
320, Supervised Field Experience in Social Work I (when appropriate)
321, Supervised Field Experience in Social Work II (when appropriate)

Sociology
100, Women in Contemporary Society
102, Women, Gender, and Diversity
103, Sex Roles in Contemporary Society
175, Women, Crime, and Society

Institute for Women's and Gender Studies Certificate--Graduate

The graduate certificate in the Institute for Women's and Gender Studies is designed for students who wish to receive post-baccalaureate training in women's studies. This program provides a multidisciplinary course of study for students wishing to specialize in women's issues. It is appropriate for students in the College of Arts and Sciences or any of the schools of the university.

Admission Requirements
Program applicants must have the following:
A. Baccalaureate degree.
B. 2.75 grade point average.
C. Official transcripts of all previous undergraduate/graduate work.
D. Two letters of recommendation.

Certificate Requirements
A student may earn the graduate certificate in women's studies by completing a total of 18 hours from the following courses listed (or from additional courses approved by the director for women's studies). At least 9 hours of course work must be at the 400 level; no more than 6 hours of course work may be Independent Study.

Core Courses

Communication
Comm 337, Male/Female Communication

Education
Cns Ed 462, Counseling Women Toward Empowerment

Criminology and Criminal Justice
CCJ 325, Gender, Crime, and Justice
CCJ 446, Sex Crime

English
380, Studies in Women and Literature
416, Feminist Critical Theory

History
300, Topics in History (when appropriate)
315, History of Women in the United States
318, African American Women's History

Honors 300 Seminars (when appropriate)

Interdisciplinary
350, Topics in Women's and Gender Studies
351, Theories of Feminism
353, Internship in Women's and Gender Studies
452, Special Readings in Women's and Gender Studies

Nursing
365, Women's Issues in Health Care

Psychology
410, Women and Mental Health
418, Human Sexuality

Social Work
312, Women and Social Issues

Other 400 level topics courses as appropriate (e.g., Eng 495; History 405)

Writing Certificate

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
English 103, Poetry Writing
English 104, Short Story Writing
English 105, Play Writing
English 108, or Comm 108 Advertising Copywriting
English 112, Topics in Writing
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 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 or internship.)

Writing Certificate with Technical Writing Emphasis

The technical writing emphasis provides a more career-specific strategy for students enrolled in the writing certificate program. The technical writing emphasis is composed of **three required** courses:
213, Technical Writing
319, Editing
313, Advanced Business and Technical Writing or
320, Independent Writing Project

In addition, students take **three electives** for a total of 18 hours chosen from the following:
Business Administration
103, Computers and Information Systems
205, Contemporary Business Communication
Communication
65, Introduction to InformationTechnology
Computer Science
125, Introduction to Computer Science (Prerequisite: Math 30, College Algebra)
English
212, Business Writing
214, News Writing
215, Feature Writing
216, Writing in the Sciences
228, Public Relations Writing
313, Advanced Business and Technical Writing (if 320 is taken as requirement)
320, Independent Writing Project (if 313 is taken as requirement)
Courses taken to fulfill requirements for the Writing Certificate may not be taken on a satisfactory/unsatisfactory basis.

Gerontological Studies Certificate

The requirements for an undergraduate certificate in gerontological studies are listed in the interschool studies in this *Bulletin.*

Trauma Studies Certificate

The trauma studies certificate is designed for students who are interested in a focused specialty in trauma studies or victim services in addition to their own major. It is appropriate for students in the College of Arts and Sciences or any of the schools of the university. It is particularly appropriate for students wishing to pursue careers in Psychology, social work, sociology, criminology, law, public health, or nursing.

Requirements
A student may earn a trauma studies certificate by completing 18 hours with a GPA of 2.0 or better from at least three departments from the following courses:

Students must complete at least 12 hours from the following group:

CCJ
120, Criminal Law
300, Communities and Crime
350, Victimology
Nursing
370, Topics in Nursing (Women at Risk: Women and Safety)
Psychology
232, Psychology of Victims
280, The Psychology of Death and Dying
295, Selected Projects in Field Placement: Helping Victims of Crime (for three credits only toward certificate).
390, Directed Studies, if trauma-related topic (for three credits only toward certificate). Please seek approval of the Coordinator of the Trauma Studies Certificate in advance.
398, Child Maltreatment: A Multidisciplinary Approach (Same as Social Work 398)
Social Work
310, Abused and Neglected Children
322, Child Welfare Practicum Seminar
Sociology
278, Sociology of Law

Only one of the following highly recommended courses may be counted toward the trauma studies certificate:
Psychology
161, Helping Relationships
Social Work
210, Introduction to Interventive Strategies for Social Work Practice

Students may count up to 6 hours from the following group toward the trauma studies certificate:
CCJ
230, Crime Prevention
240, Policing
340, Race, Crime, and Justice (same as Sociology 340)
Political Science
140, Public Administration
242, Introduction to Public Policy
394, Leadership and Management in Nonprofit Organizations (same as Social Work 308 and Sociology 308)
Psychology
160, Social Psychology (same as Sociology 160)
230, Psychology of Women
235, Community Psychology
245, Abnormal Psychology

Social Work
275, Stress and Stress Management
308, Leadership and Management in Nonprofit Organizations (same as PolSci 394 and Sociology 308)
312, Women's Social Issues
314, Social Work with Culturally Diverse Populations
Sociology
102, Sex Roles in Contemporary Society
160, Social Psychology (same as Psych 160)
175, Women, Crime, and Society
214, Juvenile Delinquency and Youth Crimes
268, The Sociology of Conflict
308 Leadership and Management in Nonprofit Organizations (same as PolSci 394 and Social Work 308)
340 Race, Crime, and Justice (same as CCJ 340)

Special Topics courses relevant to trauma studies may be included in the certificate when approved in advance by the coordinator of the trauma studies certificate.

Undergraduate Certificate in Conservation Biology

The Certificate in Conservation is a multidisciplinary program of study integrating theoretical and applied topics associated with conservation biology. The certificate is intended for undergraduate students with majors in biology or in any other field who wish to develop a specialization in conservation. The certificate is offered by the Department of Biology in cooperation with the departments of Anthropology, Economics, History, Political Science, Social Work, and Sociology. Building on a core curriculum, students can elect courses from these departments to complete their requirements. Regularly enrolled undergraduates at UM-St. Louis or individuals with baccalaureate degrees who wish to receive a Certificate in Conservation Biology are eligible to participate in the conservation certificate program. To participate, students must apply to the certificate program. Application forms are available from the biology department. Guidelines for admission to the certificate program are also available. Individuals with baccalaureate degrees who are interested in this certificate must apply to the university as unclassified undergraduates. The certificate requires completion of 21 credit hours, outlined below. Students should consult the *Bulletin* with regard to prerequisites for any of the courses listed here.

Core Courses
Biology
220, General Ecology
240, Conservation Biology
241, Conservation Biology Laboratory
347, Practicum in Conservation

Electives: The remaining 11 credits must be selected from courses listed below. Five credits must be taken from within biology and 6 credits outside biology, from at least two departments.

Anthropology
120, Native Peoples of North America
131, Archaeology of Missouri

132, Archaeology of North America

Biology
341, Population Biology
323, Tropical Resource Ecology
324, Tropical Resource Ecology Field Studies
325, Tropical Vertebrate Ecology
348, Evolution of Animal Sociality
351, Flowering Plant Families: Phylogeny and Diversification
359, Evolutionary Ecology of Animals
364, Ornithology
366, Ornithology Laboratory
367, Entomology
368, Entomology laboratory
380, Behavioral ecology
385, Wildlife Ecology and Conservation
386, Wildlife Ecology and Conservation Laboratory
395, Field Biology
396, Introduction to Marine Science

Economics
230, International Economic Analysis
251, Intermediate Economic Theory: Microeconomics
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

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. Students must be enrolled in the graduate program at the University of Missouri-St. Louis either as certificate 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 nondegree 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
1. Biology 428, Advanced Techniques in Molecular Biology
2. Biology 426, Advanced Gene Expression in Eukaryotes OR
   Biology 438, Advanced Gene Expression in Prokaryotes (if both courses are taken, one may be used as elective credit)
3. The remaining 11 credit hours must be taken from the following **electives:**

Biology
317, Immunobiology
319, Immunobiology Laboratory
371, Biochemistry
376, Topics in Biochemistry
378, Protein Biochemistry 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
439, Advanced Plant Molecular Biology and Genetic Engineering
444, Advanced Gene Activity During Development
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 3 credits may be taken at the 200 level upon permission of the Graduate Committee. Electives must include a minimum of 3 credits outside biology with a maximum of 7 outside biology. A maximum of 3 credits may be taken elsewhere than UM-St. Louis. Students may simultaneously earn a graduate degree and count credits earned in their degree program toward the certificate when appropriate.

Required Core Courses:
Biology 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
341, Population Biology
351, Flowering Plant Families: Phylogeny and Diversification
364, Ornithology
367, Entomology
385, Wildlife Ecology and Conservation
396, Introduction to Marine Science
423, Advanced Tropical Resource Ecology
424, Advanced Tropical Resource Ecology Field Studies
425, Advanced Tropical Vertebrate Ecology
441, Advanced Population Biology
442, Population and Community Ecology
446, Theory and Application of Conservation Biology
448, Advanced Evolution of Animal Sociality
458, 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
483, Applications of Geographic Information Systems
487, Advanced Tropical Ecology and Conservation
489, Graduate Seminar, when relevant

Economics
230, International Economic Analysis
251, Intermediate Economic Theory: Microeconomics
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
283, International Political Economy
285, International Organizations and Global Problem Solving
347, Introduction to Environmental Law and Policy
351, Comparative Public Policy and Administration
359, Studies in Comparative Politics, when relevant
385, International law
388, Studies in International Relations
394, Leadership and Management in Nonprofit Organizations
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 issues, when relevant

Sociology
342, World Population and Ecology
346, Demographic Techniques
426, Community and Regional Conflict Resolution

Africana Studies Certificate

Students seeking the Africana studies certificate have two options: an emphasis in African studies and an emphasis in African diaspora studies.

I. African Studies:
1) At least **one course** in two of the following four areas for a total of 9 hours:

Area 1: Anthropology
124, Cultures of Africa

Area 2: Art and Art History
117, African Art

Area 3: History
81, African Civilization to 1800
82, African Civilization Since 1800

Area 4: Political Science
258, African Politics

2) One course in two of the following areas, a total of 6 hours:

Area 1: Anthropology
234, Cultural Continuity and Change in Sub-Saharan Africa
235, Women in Sub-Saharan Africa

Area 2: Art and Art History
***215**, Topics in Tribal Arts
* **Note**: Students should take Art History 215 only when the topic is appropriate to Africa.

Area 3: History
380, West Africa to 1800
381, West Africa Since 1800
382, History of Southern Africa

Area 4: Sociology
245, Sociology of South Africa

3) An independent study course (3 hours) in which a research paper will be written on some aspect of African Studies

II. African Diaspora Studies

1) Interdisciplinary 40: The Black World (3)

2) One course from each of the following areas, a total of 6 hours.

Area 1: Africa
Anthropology
124: Cultures of Africa
History
81: African Civilization to 1800
82: African Civilization Since 1800

Area 2: Diaspora
Anthropology
05: Human Origins
History
06: African-American History
83: The African Diaspora to 1800
84: The African Diaspora Since 1800
212: African-American History: From Civil Rights to Black Power
3. At least **one course** from each of the following areas, a total of 6 hours:

Area 1: Africa
Anthropology
234: Cultural Continuity and Change in Sub-Saharan Africa
235: Contemporary Women in Sub-Saharan Africa
Art History
117: African Art
History
380: West Africa to 1800
381: West Africa Since 1800
382: History of Southern Africa
Political Science
258: African Politics
Sociology
245: Sociology of South Africa

Area 2: Diaspora
Communication
332: Intercultural Communication

English
70: African-American Literature

History
319, Topics in African-American History
385: African Diaspora to 1800
386: African Diaspora Since 1800

Music
6: Introduction to African-American Music

Political Science
232: African Americans and the Political System

***Psychology**
392: Selected Topics in Psychology: African-American Psychology

Sociology
360: Sociology of Minority Groups

Note: Students should take Psychology 392 only when the African American Psychology topic is offered.

Undergraduate Certificate Program in Nonprofit Organization Management and Leadership

The university offers an undergraduate certificate program for students who want to become professional staff, board members, or other leaders of nonprofit and voluntary organizations, as well as those who are currently in the field.

The certificate requires the completion of 18 semester hours. Nine of these hours must be the following core courses:

1. Leadership and Management in Nonprofit Organizations PolSci 394, same as Sociology or Social Work 308) (3 hours)

2. Management Issues in Nonprofit Organizations: Staff Management Issues (Political Science and Social Work 391A)

3. Management Issues in Nonprofit Organizations: Legal Issues in Governing and Managing Nonprofit Organizations (Political Science and Social Work 391-B)

4. Management Issues in Nonprofit Organizations: Financial Issues (Political Science and Social Work 391-C)

4. American Philanthropy and Nonprofit Resource Development (Political Science and Social Work 396)
The remaining 9 hours of electives can be selected from the following courses:

Business Administration
206 Basic Marketing
210 Management and Organizational Behavior
309 Human Resource Management
311 Advanced Management and Organizational Behavior

Communication
228 Public Relations Writing (Same as English 228)
230 Small Group Communication
231 Communication in the Organization
240 Persuasive Communication
358 Communication in Public Relations

English
212 Business Writing
213 Advanced Business and Technical Writing

Political Science
342 Public Personnel Management
344 Public Budgeting

Psychology
222 Group Processes in Organization
320 Personnel Assessment

Social Work
305 Intervention Strategies for Social Work with Organizations and Communities

Sociology
268 The Sociology of Conflict
280 Society, Arts and Popular Culture
312 Sociology of Wealth and Poverty
314 Social Change
336 Organizations and Environment

The certificate will be conferred upon completion of a bachelor's degree from the University of Missouri at St. Louis.

Graduate Certificate Program in Nonprofit Organization Management and Leadership

Through the public policy administration master's program, the university offers a graduate certificate program for
students who are current professional staff, board members, and other leaders of nonprofit and voluntary organizations, as well as those who wish to consider entering the field. The certificate can be taken by itself or in conjunction with the pursuit of the master's in public policy administration, master's in social work or a graduate degree in another field.

A. The graduate certificate in nonprofit management and leadership requires the completion of 18 semester hours. Nine of these are the following core courses:

1. Leadership and Management in Nonprofit Organizations (3 hours) (Political Science 394, same as Public Policy Administration 394, Sociology, or Social Work 308)

2. Management Issues in Nonprofit Organizations: Staff Management Issues (1 hour) (Political Science, Public Policy Administration, and Social Work 391-A)

3. Management Issues in Nonprofit Organizations: Legal Issues in Governing and Managing Nonprofit Organizations (1) (Political Science, Public Policy Administration, and Social Work 391-B)

4. Management Issues in Nonprofit Organizations: Financial Issues (Political Science, Public Policy Administration, and Social Work 391-C)

5. American Philanthropy and Nonprofit Resource Development (3 hours) (Political Science, Public Policy Administration and Social Work 396.)

B. Six hours of electives are to be taken from selected courses in accounting, business administration, economics, management, marketing, political science, Psychology, public policy administration, and sociology. A student may choose among these courses or other courses approved by the program director. (All Graduate electives must be at the 400 course level.)

C. Three hours of internship is also required, or graduate students should demonstrate a professional field experience equivalent to the internship. Any request for an exemption from the internship requirement must be approved by the nonprofit program director after a review of the student's professional or managerial field experience with appropriate documentation. Students who receive an exemption must take another 3 hours of electives from the selection in area B.

The internship will include learning activities in management and governance processes in nonprofit organizations, as well as a seminar in which students will critically reflect on their field experience with a faculty supervisor.

Requirements of admission to the graduate certificate program are the same as those required for admission to the Graduate school: an undergraduate degree, and a G.P.A of 2.75 or better.

Graduate Certificate in Managerial Decision Making and Health Informatics

The certificate prepares health professionals to bridge the traditional divide between clinical services and businesses. The degree is offered through the Health Managerial
Decision Making and Informatics (MDHI) program--a unit of the Graduate School. The course work is comprised of one-credit modules that provide extensive exposure to health informatics and emerging technologies while simultaneously fostering a systems view of the internal and external forces that affect organizations in the healthcare market. The program is structured to meet the needs of working health professionals, and characterized by a high degree of integration among the courses, allowing completion of the certificate within three 5-credit terms during one calendar year.

Admission Requirements
Applicants must complete an application form and also submit:
An undergraduate degree with a minimum grade point average of 3.0 or (B).
A statement of purpose demonstrating a commitment to pursue a degree in health informatics.
A resume, preferably showing two years of professional work experience in a health-related field.
Three letters of recommendation from persons qualified to judge the candidate's potential for success in the program.

Applicants are required to take either the Graduate Record Exam (GRE) General Test, or the Graduate Management Admission Test (GMAT), and fulfill the general requirements for admission to the Graduate School as explained in the Graduate Studies section of this *Bulletin*. These exams measure verbal, quantitative and analytical skills that are developed over a long period of time and are associated with success in graduate studies.

Admission decisions are based on the applicant's portfolio. The MDHI program director may request a personal or phone interview once the applicant's file is complete. Applicants who do not meet all the requirements listed above may be provisionally admitted to the program at the program director's discretion.

To successfully complete the certificate program, the student must have earned a 3.0 cumulative grade point average in certificate classes.

Mathematics Background Requirement
If college algebra or its equivalent was not taken as part of the applicant's undergraduate program, they are required to successfully complete Math 30 or its equivalent prior to their entrance into the MHS-MD program. This course may not be used as a program elective.

Degree Requirements
Students are required to complete 18 credit hours

Distribution Requirements
Overview: 7 credits

MDHI 400, Emerging Trends in Healthcare Markets
MDHI 402, Insurance and Managed Care
MDHI 404, The Internet and Electronic Commerce for Healthcare Professionals
MDHI 406, Informatics in the Health Professions
MDHI 408, Patient Rights and Provider Responsibilities
MDHI 412, Organizational Structures and Administration in the Healthcare Industry.

B. Tools and Techniques used in Decision Making: 3 credits
MDHI 420, Quality and Productivity Improvement Tools
MDHI 422, Decision Analysis
MDHI 424, Modeling and Understanding Statistical Relationships

C. Understanding Decision Making: 4 credits
MDHI 440, Total Quality Management in Healthcare Organizations
MDHI 450, Consumer Behavior in Healthcare Markets
MDHI 452, Health Provider Decision-making
MDHI 454, The Role of the Government in the Healthcare Sector
D. Informatics: 3 credits
MDHI 460, Information Technology Concepts and Elements
MDHI 462, Health Information Resource Management
MDHI 468, Health Data Warehousing and Security

E. Electives: 1 credit
MDHI 480, Practitioner's Forum, 1 credit

Preprofessional Programs

Students at the University of Missouri-St. Louis may develop preprofessional study programs from the university's academic offerings in architecture, engineering, dentistry, journalism, law, medicine, optometry, or pharmacy. With early and careful advising, students may develop a two-year study program in preparation for transfer into a professional program in the junior year, or they may select a major field of study and related area courses which provide strong undergraduate preparation for graduate professional study.

Students should seek preprofessional faculty advisers in their interest area early in their academic careers to ensure development of sound, comprehensive study programs which fulfill the admission requirements of the professional program to which they wish to apply.

The following information on preprofessional study at UM-St. Louis is provided to give students minimal guidelines and assistance in planning a program.

Pre-Architecture
The Department of Art and Art History sponsors the 3+4 Program for the School of Architecture at Washington University. A student who transfers to the School of Architecture, Washington University, at the end of the junior year may graduate with a bachelor of arts degree in art history from 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 the art history major and lacks only the total hours (electives) necessary for a degree. (The courses at Washington University will fulfill all remaining courses.)
2) A student who has not completed required courses for the art history degree must remedy the deficiency with courses taken at the UM-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 professional school.
3) A student who has not completed all the courses required for the art history major may, if the art and art history department at UM-St. Louis approves, substitute up to six hours of appropriate course work from the professional school.

The requirement that 24 of the last 30 hours of course work for a degree be taken at UM-St. Louis shall be waived where necessary for students graduating under this procedure. For more information on admission requirements, please contact the College of Arts and Sciences at 516-5501, 303 Lucas Hall.

Pre-Engineering
The Joint Undergraduate Engineering Program of the University of Missouri-St. Louis and Washington University was established in 1993. It allows UM-St. Louis to offer complete bachelor of science degree programs in mechanical, electrical and civil engineering.

Students who enter the joint program take the pre-engineering half of their course work 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. The two campuses are separated by a driving time of about 15 minutes.

The UM-St. Louis pre-engineering program provides a solid base in mathematics, physics, chemistry, and introductory engineering subjects. Students completing the pre-engineering program will be well prepared for transferring to engineering schools throughout the United States, including UM-Columbia, UM-Rolla, Washington University, and SIU-Edwardsville, in addition to continuing their education and earning their engineering degrees at UM-St. Louis.

Admission Requirements
In addition to the general admission requirements, prospective undergraduate engineering and pre-engineering students may be required to take a mathematics placement test, given at UM-St. Louis, the semester before enrolling.

Although there is no required pattern of high-school units for admission to the undergraduate engineering or pre-engineering programs, students are urged to complete at least four units of mathematics, including units in algebra (excluding general mathematics) and trigonometry. Calculus, if available, is also strongly recommended.

The following indicates pre-engineering course work required for students planning to pursue a bachelor of science degree in engineering at UM-St. Louis through the joint program with Washington University.

Math
80, Analytic Geometry and Calculus I
175, Analytic Geometry and Calculus II
180, Analytic Geometry and Calculus III
202, Introduction to Differential Equations
Chemistry
11, Introductory Chemistry I
12, Introductory Chemistry II
Physics
111, Physics: Mechanics and Heat
112, Physics: Electricity, Magnetism, and Optics

Introductory Engineering

Engineering
144, Statics
145, Dynamics

Humanities, Social Sciences, and English Composition

English
10, Freshman Composition
Humanities Electives (three courses)
Social Sciences Electives (three courses)

Students planning to earn a bachelor of science degree in engineering at UM-St. Louis should choose humanities and social sciences electives to meet both the UM-St. Louis general education requirements and the humanities and social sciences requirements of the Joint Undergraduate Engineering Program. In particular:

* A course in American history or government, or in Missouri history or government, must be included.
* The cultural diversity requirement must be fulfilled.
* At least 8 credit hours must be in one department or area within humanities or social sciences; of these 8 credit hours, at least 1 credit hour must be in a course at the junior level or higher, taken at a four-year institution.

Some courses that fulfill the humanities or social sciences breadth of study requirement do not count as humanities and social sciences electives; an example would be a statistics course taught in economics or Psychology.

For further Information about undergraduate engineering and pre-engineering programs at UM-St. Louis, please contact the UM-St. Louis/Washington University Joint Undergraduate Engineering Program at 228 Benton Hall, 516-6800.

Prejournalism
Students wishing to pursue a journalism degree should review the entrance requirements of the schools they would like to attend for information on suggested prejournalism courses of study.

Students seeking a journalism degree from the University of Missouri must complete their junior and senior years at the School of Journalism, University of Missouri-Columbia. For admission, students must present to the UMC School of Journalism 60 acceptable credit hours. Admission is by sequence. Sequences include advertising, broadcast news, magazine, news-editorial, and photo journalism.

Required Courses
The following studies are required for admission to the School of Journalism:

English Composition: Students must complete at least the second course in an English composition sequence with a grade of B or higher. If a grade of C is received, the student must pass the Missouri College English Test on the MU campus. It is not possible to "test out" of this requirement.
Math: Students must complete College Algebra with a grade of C or higher.
Foreign Language: Four years of high school work in one foreign language or 12-13 hours of college work in one foreign language.
Science: Math 31, Elementary Statistics **plus** 6 hours from biology, chemistry, astronomy, geology, physics, or above college algebra-level math. One course must include a lab. Please note: college algebra is the prerequisite course for statistics.
Science Electives: Five or 6 additional hours in behavioral, biological, physical or mathematical science from the following areas: anthropology, astronomy, biology, chemistry, geology, math (above college algebra level), physics, Psychology, or sociology.
Social Science: Nine hours to include American history from the beginning to present day and American government/introduction to political science **plus** 3 hours in microeconomics. Please note: advertising majors must complete both microeconomics and macroeconomics.
Humanistic Studies: Three hours American or British literature **plus** at least 5 hours from 2 of the following areas: history or appreciation of art or music, philosophy, humanities, religious studies, non-U.S. civilization or classical studies, history or appreciation of theater

In addition, word processing skills are required (40 words per minute).

Nontransferable courses at the School of Journalism are basic military science, basic physical education, business education such as typing or shorthand, journalism or mass communication, advertising, public relations, photography, and no more than 3 hours maximum of applied music, dance, acting, or studio art. Also, not transferable are industrial arts, orientation, and remedial courses.

The school accepts CLEP subject exams only, Advanced Placement Program (AP) or advanced standing. The school will not accept credit by exam to fulfill the English composition admission requirement. **Credit should be referred for review.**

Students are required to take two journalism courses at UMC prior to admission to the school (minimum 2.75 GPA required). The English composition requirement must be satisfied prior to enrollment in any journalism course.

For advisement and information, contact the College of Arts and Sciences, 303 Lucas Hall, telephone 516-5501.

Prelaw
Students planning to attend law school must pursue an undergraduate degree of their choice. There is no such thing as a prelaw major. Law schools encourage students to pursue a course of study that includes a broad liberal arts background. The prelaw advisor will assist students in choosing courses that will enhance their analytical and writing skills.

English language and literature courses are virtually indispensable. An awareness of the institutional processes of government obtained through study in political science is needed. Since law is inseparable from historical experience, an acquaintance with American history is important. Students should acquire a knowledge of macro- and microeconomics. Statistics, accounting, and computer science are valuable in understanding special legal subjects and the practice of law.

The University of Missouri has law schools at Columbia and Kansas City. University of Missouri-St. Louis students will find everything needed in planning an undergraduate program, preparing for the LSAT, and applying to law school in the office of the prelaw adviser. Students should contact the prelaw adviser through the College of Arts and Sciences, 303 Lucas Hall, 516-5501, early in their undergraduate studies.

Premedical Sciences
Students wishing to enter medical, dental, optometry, or veterinary medicine schools should pursue the B.A. or B.S. degrees with majors in the disciplines of their choice, but they should take whatever additional courses may be necessary for admission to the professional school.

Since medical school admission requirements vary, students are urged to consult the catalogs of the schools to which they intend to apply. Updated information may be found in *Medical School Admission Requirements* (United States and Canada) for the current year, available from the:

Association of American Medical Colleges
2450 N. Street, N.W.
Washington, DC 20037-1126

A copy is available for student use at the reference desk of the Thomas Jefferson Library. Students may also visit a Web site at www.aam.org.

Suggested Courses
Many medical schools recommend the following undergraduate courses:

Biology: Biology 11, Introductory Biology I; Biology 12, Introductory Biology II; Biology 224, Genetics; and additional courses in molecular and/or cell biology.

Chemistry: Chemistry 11, Introductory Chemistry I; Chemistry 12, Introductory Chemistry II; Chemistry 261, Structural Organic Chemistry; Chemistry 262, Organic Reactions; Chemistry 263, Techniques of Organic Chemistry; and additional courses in organic chemistry and quantitative analysis.

Mathematics: Students should take courses at least through calculus, as appropriate for the major degree.

Physics: 8 credit hours or as appropriate for the degree chosen.

Since students are not confirmed for admission to professional schools until the science requirements for admission are fulfilled, students should meet the science requirements before the end of the junior year. To complete these requirements in time, premedical students should take Chemistry 11 and 12, Introductory Chemistry I and II, during the freshman year.

Students also should take the required national standardized examination before or during the junior year as is appropriate for the exam; the Medical College Admission Test for premed students; the Veterinary Medical Aptitude Test for prevet students; the Dental Aptitude Test for predental students; and the Optometry Admission Test for pre-optometry students.

Each year the number of applicants to health profession schools exceeds the number of available places. Students, therefore, are encouraged to have alternative plans should they not gain entrance. Pharmacy, nursing, and laboratory technology may be considered as alternative fields.

For further information, testing dates, or premedical advising, contact the pre-health professions adviser through the College of Arts and Sciences, 303 Lucas Hall 516-5501.

Pre-Optometry
The University of Missouri-St. Louis offers a four-year program of study leading to the doctor of optometry degree; this professional degree is administered by the School of Optometry. It is one of only 17 schools of optometry in the United States and the only one in the state of Missouri.

Because the University offers the doctor of optometry degree, it is an ideal institution for pre-optometry education. There are two distinct programs available to UM-St. Louis pre-optometry students:

1. The Department of Biology sponsors a 3+4 Program for the UM-St. Louis School of Optometry. In this program, a student 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 the student satisfactorily completes the first year of the professional program. 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 biology 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 6 hours from the School of Optometry may be substituted for undergraduate degree requirements, with approval of the Department of Biology. For more information about the 3+4 program, contact the Department of Biology, 516-6200.

2. The Pierre Laclede Honors College and the School of Optometry offer the Scholars Program; this program allows a student to complete both the undergraduate and doctor of optometry degrees in seven years. To qualify for this program, a student must be a senior in high school; scored a minimum composite of 29 on the ACT; and be accepted to the UM-St. Louis Pierre Laclede Honors College program. For more information about the Scholars Program, contact the Pierre Laclede Honors College, 516-6870.

Prepharmacy
Admission to a school of pharmacy usually requires one to two years of college work in specified areas. Most colleges of pharmacy recommend the 1+4 plan which includes one year of college work followed by four years of professional courses in the college of pharmacy. In some cases the old 2+3 program is used. Since entrance requirements vary, students should consult the catalog of the college to which they intend to apply.

A typical one-year sequence for prepharmacy students which meets the admission requirements of the School of Pharmacy at the University of Missouri-Kansas City and also those of the St. Louis College of Pharmacy is as follows:

Freshman Year:
First Semester (15 Hours)
Biology 11, Introductory Biology I (At UMKC, Physics 11, Basic Physics, is preferred.)
Chemistry 11, Introductory Chemistry I

Math 30, College Algebra, and Math 35, Trigonometry (At UMKC mathematics through survey calculus, Math 100, is preferred.)

Second Semester (16 hours)
Biology 12, Introductory Biology II
Chemistry 12, Introductory Chemistry II
Literature: Any 3-hour course
English 10, Freshman Composition

For students pursuing a two-year prepharmacy sequence, it is recommended they continue with the following course work:

Sophomore Year
First Semester (16 hours)
Math 100, Basic Calculus
Chemistry 261, Structural Organic Chemistry
Literature: Any 3-hour course
Physics 11, Basic Physics
Elective*: One 3-hour course

* Courses in statistics, psychology, communication, economics, and accounting are most often recommended or required.

Second Semester (15 hours)
Biology: One biology elective
Chemistry 262, Organic Reactions
Chemistry 263, Techniques of Organic Chemistry
Physics 12, Basic Physics
Elective*: One 3-hour course

* Courses in statistics, psychology, communication, economics, and accounting are most often recommended or required.

For additional information and prepharmacy advising, contact the pre-health professions adviser, through the College

College of Business Administration

Faculty

Charles R. Kuehl, Associate Professor*; Dean (Interim)
Director Center for Competitive Analysis
Ph.D., University of Iowa
Douglas E. Durand, Professor*; Vice Chancellor for Academic Affairs (Interim)
Ph.D., Washington University
John J. Anderson, C.P.A., C.M.A., Professor*; Associate Dean
Ph.D., University of Wisconsin-Madison
David R. Ganz, Assistant Professor; Associate Dean and Director of Undergraduate Studies in Business
M.S. in C., Saint Louis University
Albert P. Ameiss, Professor Emeritus
Ph.D., Saint Louis University
Nasser Arshadi, Professor*
Ph.D., University of Nebraska
Howard B. Baltz, Professor Emeritus
Ph.D., Oklahoma State University
Allan Bird, Professor*
Ph.D., University of Oregon
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James F. Campbell, Professor*,
Ph.D., University of California, Berkeley
William P. Dommermuth, Professor Emeritus
Ph.D., Northwestern University
Hung-Gay Fung, Professor*
Ph.D., Georgia State University
Michael M. Harris, Professor*
Ph.D., University of Illinois-Chicago
Marius A. Janson, Professor*
Ph.D., University of Minnesota
Sioma Kagan, Professor Emeritus; Diplom-Ingenieur
Ph.D., Columbia University
Edward C. Lawrence, Professor*; Coordinator in Finance Ph.D., Pennsylvania State University
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Ph.D., University of North Texas
Joseph S. Martinich, Professor*
Ph.D., Northwestern University
Ray Mundy, Professor*
Ph.D., Pennsylvania State University
Robert M. Nauss, Professor*; Interim Coordinator in Logistics and Operations Management
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David Ricks, Professor*
Ph.D., Indiana University
David Ronen, Professor*
Ph.D., Ohio State University
Rajiv Sabherwal, Professor*
Ph.D., University of Pittsburgh
Susan M. Sanchez, Professor*
Ph.D., Cornell University
Vicki L. Sauter, Professor*
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Ph.D., University of Minnesota
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Ph.D., New York University
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D.B.A., Washington University
Michael T. Elliott, Associate Professor*
D.B.A., Mississippi State University
Thomas H. Eyssell, Associate Professor*; Director of Graduate Studies in Business
Ph.D., Texas A & M
Timothy A. Farmer, C.P.A., Associate Professor*
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D=Anne G. Hancock, Associate Professor*
Ph.D., University of New Orleans
Julius H. Johnson, Jr., Associate Professor*
Ph.D., George Washington University
Kailash Joshi, Associate Professor*
Ph.D., Indiana University
Donald R. Kummer, Associate Professor*
Ph.D., University of Oregon
Mary Lacity, Associate Professor*
Ph.D., University of Houston
Haim Mano, Associate Professor*; Coordinator in Marketing Ph.D., University of Chicago
Mary Beth Mohrman, Associate Professor*
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Geraldine E. Hynes, Assistant Professor*
Ph.D., Saint Louis University
Tom Kozloski, Assistant Professor
Ph.D., Drexel University
James M. Krueger, C.P.A., Assistant Professor*; Vice Chancellor for Managerial and Technological Services
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Ph.D., Indiana University
Jennifer Reynolds-Moehrle, C.P.A., Assistant Professor*
Ph.D., Indiana University
Mahesh Shankarmahesh, Assistant Professor
Ph.D., Old Dominion University
Michael J. Stevens, Assistant Professor*
Ph.D., Purdue University

David A. Bird, Instructor
M.S., Washington University
Lindell P. Chew, Instructor
M.B.A., University of Missouri-Columbia
Wayne W. Winter, Instructor; Assistant Coordinator in Legal Environment
L.L.M., Washington University
Kenneth W. Locke, Adjunct Associate Professor
D.B.A., Indiana University
Robert J. Banis, Lecturer
Ph.D., North Carolina State University
Nancy Coster, C.P.A. Lecturer
M.Acctncy, University of Missouri-Columbia
Joy Dakich, Lecturer
M.A., University of Missouri-St. Louis
Michael Grissom, Lecturer
M.A., Webster University
Terry C. Killian, C.P.A., Lecturer
M.B.A., University of Missouri-St. Louis
Peggy A. Lambing, Lecturer
M.B.A., University of Missouri-St. Louis
William R. Link, C.P.A., Lecturer
M.B.A., University of Missouri-Columbia
Elizabeth W. Vining, Lecturer; Interim Director of Continuing Education and Outreach
M.B.A., University of Missouri-St. Louis

*members of Graduate Faculty

The University of Missouri - St. Louis College of Business Administration was established in 1967, and was accredited by AACSB. The International Association for Management Education, six years later the shortest time on record for any school to receive accreditation of its business program. AACSB is the only nationally recognized accrediting agency for business and accounting programs. In 1995, the College of Business Administration received reaccreditation of its business programs, and initial accreditation of its accounting programs, both undergraduate and graduate.

The mission of the College reflects the traditional academic activities of teaching, research, and service. Within the resource and strategic constraints placed on the College by the campus and the system, the College seeks to: provide students with a high quality business education that prepares them to become productive contributors and leaders in both private and public sector organizations; conduct research, the results of which extend and expand existing levels of knowledge and understanding relating to the operation, administration, and social responsibilities of enterprises in both the private and public sectors; serve the university, the citizens of Missouri, and the St. Louis business community through useful outreach programs and through effective interactions with the College's faculty and staff.

At the undergraduate level, the College of Business Administration offers the Bachelor of Science in Business Administration (BSBA) degree with emphases in finance, international business, logistics and operations management, management and organizational behavior, and marketing; or an individual may earn the BSBA degree with no emphasis. Bachelor of Science in Accounting (BSA) and Bachelor of Science in Management Information Systems (BSMIS) degrees are also offered. At the graduate level, the College offers the Master of Business Administration (MBA), Master of Accounting (MAcc) and Master of Science in Management Information Systems (MS in MIS) degrees. Several specialized certificate programs are also available.

The diverse faculty, including primarily doctorally qualified, full-time members, have degrees from a variety of prestigious Ph.D. degree-granting institutions, assuring students exposure to various management theories and educational approaches.

In addition to the undergraduate and graduate degree programs mentioned above, the College supports additional operations including a continuing education unit; an applied research center; and a community service research center. More information about these operations is available from the College.

Undergraduate Studies

Admission to the College of Business Administration

Any day students who designate Business degree programs as their intended degree paths will have "Business" as their assigned Academic Unit (AU), and will be advised by the College of Business Administration Office of Undergraduate Academic Advisement, 487 SSB. Evening Business students are advised by the Evening College until completion of thirty-nine (39) credit hours. While upper division Business courses (those numbered 200 and above) normally require junior standing, Business degree seeking students are encouraged to complete the following courses during their first sixty (60) hours of course work:

BA 103, Computers and Information Systems
BA 140, Fundamentals of Financial Accounting
BA 145, Managerial Accounting
BA 156, Legal Environment of Business
Econ 51, Principles of Microeconomics
Econ 52, Principles of Macroeconomics

Transfer Students
Students transferring to UM-St. Louis are expected to take most of their specific business work during their junior and senior years. Business courses which are offered at the freshman or sophomore level and which are transferred in lieu of those offered at UM-St. Louis at the

200 level or above must be validated. Validation is determined by the appropriate discipline and may include:

1) Passing an approved 200-level or above course in that area with a grade of C- or better or
2) Passing a proficiency examination.

Business students must complete 48-60 hours in business for the BSBA , BSA , and BSMIS degrees. At least half of the 48-60 business hours must be completed in residence at UM-St. Louis on a regular graded basis. Students must also complete no fewer than sixty (60) hours (business and non-business) at an accredited baccalaureate degree granting institution and must meet the College's 30 hour residency requirement.

Degree Requirements

General Education Requirements
All undergraduate business administration majors must complete the general education requirements of both the University and the College of Business Administration. The College's general education requirements are in keeping with those of the University. Many of the courses needed to complete the College's degree requirements, as outlined below, may be taken to fulfill the University's general education requirements.

General Degree Requirements
All undergraduate business administration (BSBA), accounting (BSA), and Management Information Systems (BSMIS) majors must complete the specific non-business courses which are College of Business Administration degree requirements. To satisfy the BSBA, BSA, and BSMIS general degree requirements, the following pre-business administration requirements must be met:

1) Demonstration of basic skills in written communication by a minimum grade of C- in English 10, English Composition. For more information refer to the University General Education Requirements.
2) Students wishing to complete a degree at UM-St. Louis must complete a junior-level English requirement with a grade of C- or better.
3) Three courses in the humanities, to be chosen from selected offerings in art, English, music, philosophy and communication (applied courses do not qualify). See the Office of Undergraduate Academic Advising or the World Wide Web for a detailed listing of courses which fulfill this requirement.
4) Five courses in social science, to include: Econ 51, Principles of Microeconomics, and Econ 52, Principles of Macroeconomics; one course which meets the state requirement (see the University General Education Requirements); and two additional courses.
5) Three courses in mathematics and science which must include: a minimum proficiency in Math 100, Basic Calculus, and Math 105, Basic Probability and Statistics, and at least one lecture course in either a biological or physical science. (Note: Math 30, College Algebra, is a prerequisite to Math 100 and Math 105; also students planning to pursue a more in depth knowledge of calculus should take Math 80 in lieu of Math 100).
6) Global Awareness Requirement (9 hours):

A. Cultural Diversity Requirement: to expose students to a culture radically different from their own and to enhance their sensitivity to and awareness of cross-cultural differences, the College of Business Administration requires that students complete a three-hour course which focuses upon aspects of a culture and not upon the interactions of that culture with Euro-American cultures. This requirement may be met by one of the courses listed in the College of Arts and Sciences General Information.
B. International Studies: Graduates will work and live in an interdependent world; they will be part of a global economy and will work in an increasingly competitive global marketplace. Success in this changing environment requires knowledge and understanding of the international system, the global economy and other global issues. Towards meeting that objective the College of Business Administration requires that:

1) Students complete two three-hour courses in international studies. These courses are upper division courses, and will ordinarily be completed in the junior or senior year. A list* of the courses that satisfy this requirement is available in the College of Business Administration Undergraduate Academic Advising Office.

2) Students who elect to take 13 hours in one foreign language may use the third course in the sequence in partial fulfillment of this requirement.

* This list will be updated periodically by the Undergraduate Studies Committee with the advice of the Director of the Center for International Studies. Check with your advisor for the most up-to-date list of courses that will satisfy these requirements.

College of Business Administration Core Degree Requirements Candidates for the Bachelor of Science in Business Administration, the Bachelor of Science in Accounting, or the Bachelor of Science in Management Information Systems degrees, must complete the following business administration core courses:

Business Administration
103, Computers and Information Systems
140, Fundamentals of Financial Accounting
145, Managerial Accounting
156, Legal Environment of Business
***204**, Financial Management
***206**, Basic Marketing
***210**, Management and Organizational Behavior
***250**, Business Statistics

*252, Introduction to Operations Management
*390, Business Assessment Testing
*391, Strategic Management (seminar)

Students must earn a minimum grade of AC-@ in each course included in the thirty (30) hour business core except BA 391, Strategic Management; and BA 390, Business Assessment Testing. A grade of satisfactory is required in Business Assessment Testing. Also to be admitted to BA 391, Strategic Management, all other core courses must be completed (except BA 390) with a passing grade.

College of Business Administration Degree Requirements
All students who pursue the Bachelor of Science in Business Administration (BSBA) degree, the Bachelor of Science in Accounting (BSA) degree, or Bachelor of Science in Management Information Systems (BSMIS) degree are required to complete a minimum of 36 hours in business courses at the junior/senior level (UM-St. Louis courses numbered 200 and above). Eighteen (18) of these hours are business core courses (those with an asterisk, above) and eighteen (18) hours are business electives.

Transfer courses used to partially fulfill this requirement must be from four-year accredited schools and must be restricted to junior/senior level students at those schools. Business courses taken in the freshman/ sophomore year at any accredited school may be granted transfer credit, but the credit will not be included within the thirty-six hours required at the junior/senior level. If the freshman/sophomore transfer course in business appears to be similar to a junior/senior level business course at UM-St. Louis, one may request to validate the transfer course. Successful validation will result in a waiver from the need to take the validated course at UM-St. Louis but the transfer credit will not be counted at UM-St. Louis as part of the minimum thirty-six (36) hours required at the junior/senior level.

Approved Electives In addition to the above, students must complete a minimum of 24 hours of approved electives. A list of approved electives is available in the Undergraduate Advising Office of the College of Business Administration. Courses that are not on this list (free electives) may not be used as approved electives, except with the approval of the College's Undergraduate Studies Committee. Free electives are placed on a student's transcript but do not count toward the 120 minimum required hours for the BSBA, BSA, and BSMIS degrees. At least 12 hours of approved electives must be taken outside the College of Business Administration; the remaining may be earned within the College. A minimum of 60 hours must be taken in non-business administration course work.

Graduation Requirements The BSBA , BSA, and BSMIS degree programs require a minimum of 48 hours in business administration courses, a minimum of 72 hours in business administration and approved electives combined, and a minimum of 120 hours for all course work.

Student must earn a minimum campus grade point average of 2.0 and a minimum grade point average of 2.0 for all business courses attempted at UM-St. Louis. Grade modification cannot be used for calculating the business grade point average.

College of Business Administration Residency Requirement Business Administration students must take their last 30 hours at the University of Missouri-St. Louis. Exceptions to this residency requirement would have to be approved by the College's Undergraduate Studies Committee.

Limitation on Discipline Concentration
While a certain level of concentration in one of the various business fields is desirable, students should not concentrate their course selections to the extent of limiting their career flexibility. No more than 24 hours beyond required core courses are allowed in any business discipline--accounting, finance, logistics and operations management, management and organizational behavior, management information systems, and marketing. The combined hours in business and economics courses may not exceed 78 within the 120-hour program.

Requirements For Multiple Degrees
Students may earn two or more undergraduate degrees in the College of Business Administration (BSBA, BSA, and/or BSMIS) by completing all of the requirements for each degree. In addition, each degree requires a minimum of 15 credit hours unique to that degree - at least 15 credit hours cannot have been used for another degree within the College of Business Administration. For example, students seeking two undergraduate degrees in Business will have to complete a minimum of 135 semester hours of college course work.

BSBA Emphasis Areas
An emphasis area is not required within the BSBA degree program. Students who choose an emphasis must fulfill the general and specific requirements set forth below. An emphasis area will be noted on the student's permanent record card (transcript)--not the diploma upon completion of the emphasis area and the BSBA degree requirements. NOTE: An emphasis area designation may be added to the permanent record card for up to two years following graduation. Courses taken after graduation which are to be applied toward an emphasis area must be taken in residence at UM-St. Louis.

General Requirements BSBA, BSA and BSMIS
All BSBA/BSA/BSMIS degree requirements must be satisfied including completion of the ten business core courses required of all persons.

A minimum of: eighteen (18) hours of business electives beyond the business core are required for all BSBA degree seeking students; twenty-one (21) hours of business electives beyond the business core are required of all BSA and/or BSMIS degree seeking students. Business courses used in fulfillment of a particular BSBA emphasis area, the BSA and/or the BSMIS major requirements would be counted among these hours.

A student must earn a grade of C- or better in all business and non-business courses applied to the BSBA emphasis area, BSA and/or BSMIS major requirements. Additionally, a campus minimum GPA of 2.00 is required in both the business and emphasis area coursework. (Non-business courses required for an emphasis area and/or degree are not averaged into either the business or the emphasis area GPA.)

The satisfactory/unsatisfactory option
Business students in good standing may take up to 18 hours on a satisfactory/unsatisfactory basis. Exempt from this option are specific degree requirements, including such courses as Econ 51, Econ 52, mathematics courses, English 10, and junior-level English courses; courses fulfilling the mathematics requirement; and the required business administration core courses except BA 390. Up to nine of the allowable 18 hours of work taken on a satisfactory/ unsatisfactory basis may, however, be in business electives. Students should consult the College of Business Administration's regulations on this option regarding particular BSBA emphasis area courses and those in the BSA and BSMIS degree programs.

Residency
All BSBA emphasis areas, the BS in Accounting and the BS in MIS have residency requirements--a minimum number of business hours beyond the business core which must be taken at UM-St. Louis:

Finance, International Business, Logistics and Operations Management, Management and Organizational Behavior, and Marketing--six (6) hours; BS in Accounting and BS in MIS nine (9) hours.

General
Hours transferred from four-year accredited institutions require UM-St. Louis area approval to satisfy BSBA emphasis area, BSA and BSMIS requirements. Transferred independent study courses will not fulfill BSBA emphasis area requirements nor requirements for the BSA or BSMIS.

The specific requirements for a BSBA emphasis area, the BSA and the BSMIS for a given individual will be those requirements in effect at the time of completion (with a passing grade) of the first course in the respective program beyond the business core courses.

No more than thirty (30) hours of business electives (sixty [60] business hours in total) may be applied toward the minimum of 120 hours required for the BSBA, BSA and BSMIS degrees.

Various experimental courses and independent study courses may be offered under the BA 295, BA 296 and BA 395 numbers. The first such course taken in a given area will not count against the limit of courses in that area; any additional experimental and independent study courses will count against the limitations outlined above.

The College of Business Administration faculty is currently considering the implementation of a higher GPA requirement for admission and graduation. This will be no more than 2.5 and may be imposed in the future on all students entering the College.

Specific Requirements BS in Business Administration

Finance
Finance is a multidisciplinary field that combines various concepts from management, economics and accounting with financial techniques to make sound business decisions and solve problems. There are many business situations in both large and small companies that require knowledge of the latest financial practices and tools. Generally, these applications involve investing (using funds) or financing (raising funds). As a result, the field is comprised of a number of areas including corporate finance, investments, financial institutions and services (banking, insurance, real estate) and personal financial planning.

Undergraduate Program Philosophy
Over the last two decades, the field of finance has become increasingly technical and specialized. Employers recruiting for financial positions not only require candidates to have an undergraduate or graduate degree in finance, but they also want new employees to exhibit skills and experience beyond those typically found in a traditional academic environment. As a result, professional licensing or certification has become one of the most widely recognized means of demonstrating core competency. Consequently, the finance program at UM-St. Louis carefully integrates finance tracks into the curriculum to enable students to complete their academic degrees while at the same time providing the in-depth knowledge necessary for taking professional certification exams. Our program is designed to accelerate professional development and provide students with superior credentials to qualify them for skilled positions in a highly competitive job market. Details for each of the tracks are discussed below.

Finance Core
To earn an emphasis in Finance in the BSBA degree program, all students must successfully complete a minimum of fifteen credit hours of finance electives beyond the business core course of Financial Management, BA 204. In addition, students with a desire to earn one or more professional certifications in specialized areas will need to take additional course work to satisfy the knowledge requirements of a particular track as detailed below.

It should be noted that the course listing under each track is the recommended curriculum to obtain sufficient command of the topics under the specialization. Students deviating from the suggested program of study must assume responsibility for completing any gaps in their backgrounds on their own prior to sitting for any professional exams.

General Finance Emphasis
For students who desire to obtain a general knowledge of finance or custom tailor their own individual program, this option allows students to take any of the finance course electives in any sequence. By affording maximum flexibility, students can explore the many different areas within finance before deciding upon which career path they may want to embark. As stated above, for a BSBA degree with an emphasis in finance, recipients must take a minimum of fifteen credit hours selected from the following courses:

Business Administration
207 Practicum in Investments
295 Business Administration Problems
296 Independent Study
327 Practicum in Finance
328 Estate Planning and Trust
332 Principles of Insurance
333 Life Insurance
334 Investments
335 Financial Risk Management
336 Treasury Management
337 Principles of Real Estate
338 Practices of Personal Financial Planning
339 Retirement Planning and Employee Benefits
350 Financial Policies
351 Computer Applications in Finance
355 Financial Services Industry and Instruments
356 Commercial Bank Management
380 International Finance
395 Business Administration Seminar: Topic: Property and Liability Insurance

Track Certification
All students completing one of the specialized tracks at UM-St. Louis will receive a Certificate of Completion for that track. This document will be in addition to the degree the student receives and is intended to provide additional evidence of attaining a specific body of knowledge. To receive the certificate, students must fill out an application for certification in their last semester. The application can be obtained from the Office of Undergraduate Academic Advising in the College of Business Administration.

Corporate Finance Track
The Corporate Finance Track trains students to make business financial decisions to maximize the value of the firm. In addition to raising and investing capital, firm managers must deal with a number of stakeholders including stockholders, lenders, customers, and regulators. While the major focus is on the financial problems of large corporations, many of the analytical tools and techniques also apply to small business enterprises. Students completing BA 336, Treasury Management, are eligible under a special agreement with the Treasury Management Association to sit for the Certified Cash Manager (CCM) exam. After completion of two years of related experience, the CCM designation qualifies students to work in the Treasury Departments of many leading companies or service providers like banks. Recommended courses include:

Business Administration
334 Investments
335 Financial Risk Management
336 Treasury Management
340A Financial Accounting and Reporting I
340B Financial Accounting and Reporting II
350 Financial Policies
351 Computer Applications in Finance
355 Financial Services Industry & Instruments
380 International Finance

Financial Institutions and Services Track
Financial institutions design and deliver financial services to businesses, government and individuals. It is also one of the fastest growing segments of the economy. This track is intended for students with a desire to work in a bank,
insurance company, real estate firm, or other service provider. Beginning career opportunities include becoming a loan officer for a bank, a securities broker, a mortgage broker, or a property manager. Additionally, the Principles of Real Estate course (BA 337) provides students with the educational foundation to sit for the Missouri Real Estate Salespersons= Exam to become licensed to sell residential property under the direction of a broker. Recommended courses include:

Business Administration
332 Principles of Insurance
334 Investments
337 Principles of Real Estate
351 Computer Applications in Finance
355 Financial Services Industry and Instruments
356 Commercial Bank Management

Investment and Portfolio Management Track
There are billions of dollars flowing into retirement plans and mutual funds each year. These monies are invested in security markets around the world to provide the owners with the best returns available for a given level of risk. Professional portfolio managers have the responsibility of meeting investor goals while subject to rapidly changing market conditions. This path of study is intended to prepare students for a challenging career in money management. The program provides students with the critical knowledge to sit for the Chartered Financial Analyst (CFA) exam. This professional designation is highly regarded by the investment industry and requires the passing of a series of three exams. Students must also gain three years of related work experience before being certified. Recommended courses include:

Business Administration
207 Practicum in Investments
334 Investments
335 Financial Risk Management
340A Financial Accounting and Reporting I
340B Financial Accounting and Reporting II
351 Computer Applications in Finance
355 Financial Services Industry and Instruments
380 International Finance

CFA Review Courses (one for each level) are noncredit and available through Continuing Education.

Financial Planning Track
The Financial Planning Track is designed to prepare students to counsel individuals on personal financial matters that impact the family. This curriculum is a registered program with the Certified Financial Planner Board of Standards Inc., enabling students who successfully complete it to sit for their certification examination. UM-St. Louis does not award the CFP and CERTIFIED FINANCIAL PLANNER designations. The right to use the marks CFP and Certified Financial Planner is granted by the CFP Board to those persons who have met its rigorous educational standards, passed the CFP Certification Examination, satisfied a work experience requirement, and agreed to the CFP Board Code of Ethics and Professional Responsibility. Only persons registered with the CFP Board are permitted to sit for the CFP Certification Examination. CFP certificates and licenses are issued only by the CFP Board. The registered curriculum includes:

Business Administration
327 Practicum in Finance
328 Estate Planning and Trust
332 Principles of Insurance
334 Investments
337 Principles of Real Estate
338 Practice of Personal Financial Planning
339 Retirement Planning and Employee Benefits
347 Income Taxes
351 Computer Applications in Finance

Comprehensive CFP Exam Review (noncredit) is available through Continuing Education.

Students who plan to sit for the CFP exam are strongly urged to include BA 338, BA 332, BA 334, BA 347, BA 328 and BA 339 in their coursework.

Insurance Track
This track is intended for the development of professionals for all aspects of the insurance industry. Insurance plays a special role in risk management for individuals and businesses. Areas emphasized include life and property/casualty risk exposures and the administration of pension and employee benefit plans. Students are prepared for careers as analytical staff members of major insurance companies, consultants, insurance agents or brokers, employee benefit specialists, and risk managers. The program is a cooperative partnership with the insurance industry including the American College in Bryn Mawr, Pennsylvania and the local chapter of the American Society. By special arrangement, students are entitled to apply three approved UM-St. Louis courses toward professional certification without further examination provided the courses are passed with a AC@ grade or higher. The professional certifications include the widely recognized Chartered Life Underwriter (CLU) and the Chartered Financial Consultant (ChFC). Transfer of these courses to the American College for certification does not require any additional tuition but only a one-time registration fee. Further courses can be used to satisfy the knowledge content for certification but will necessitate the taking of a standard national exam required of all candidates on the material. Both the CLU and ChFC require the passing of 10 courses not all of which are offered by UM-St. Louis but are available through the American College. In the future, it may also be possible to take actuarial courses offered in the Department of Mathematics as part of this track.

Recommended courses include:
Business Administration
328 Estate Planning and Trusts
332 Principles of Insurance
333 Life Insurance
334 Investments
338 Practice of Personal Financial Planning
339 Retirement Planning and Employee Benefits
347 Income Taxes
351 Computer Applications in Finance
395 Business Administration Seminar; topic: Property and Liability Insurance

International Business
There are two tracks for students wishing to pursue an emphasis in International Business (IB): one for those admitted to the Honors College, and one for other College

of Business Administration students. Students in either track must satisfy the University=s General Education requirements, the cultural diversity requirement, the College of Business Administration core course requirements and the following International Business emphasis area requirements:

Twelve (12) hours--four required courses
Business Administration
314 Managing the Global Workforce
316 International Marketing
380 International Finance
393 International Strategic Management

Foreign language proficiency equivalent to thirteen hours in one approved foreign language of international commerce must be demonstrated. Transfer students must pass the UM-St. Louis foreign language proficiency exam. Approved languages of international commerce are determined by the College of Business Administration.

U.S. students in the Honors College track are required to have a significant experience outside the U.S. This requirement can be met if they have lived outside the U.S. for at least nine months, spend at least one semester in an exchange program approved by the College of Business Administration or have an overseas internship for at least three months which is approved by the College of Business Administration.

Non-U.S. students in the Honors College track are required to have at least three months full-time working experience in the U.S. to be approved by the College of Business Administration.

Students in the non-Honors College track are encouraged to spend at least one semester in an exchange program approved by the College of Business Administration.

Logistics and Operations Management
The mission of Logistics and Operations Management is to get the appropriate goods or services to the right place, at the right time, in the right quality and quantity, while making the greatest contribution to the organization. In a business environment, Logistics and Operations Management encompasses the design, implementation and management of systems for efficient deployment of personnel, physical facilities, raw-materials, in-process inventories, finished goods and related information or services. Logistics and Operations Management covers the whole supply chain, from the point or origin to the point of consumption. Logistics and Operations Management analysts must be proficient in the use of quantitative models and computers, and communicate effectively.

For an emphasis in Logistics and Operations Management a student must complete at least four (4) courses (twelve [12] hours) from the following:

Business Administration
306 Decision Support Systems
308A Production and Operations Management
308B Business Logistics Systems
308C Lean Production in Manufacturing and Service Operations
308D Service Operations Management
329 Business Forecasting
330 Quality Assurance in Business
331 Multivariate Analysis
375 Operations Research
385 Operations Research II
295/395 Business Administration Problems/Seminars
296 Independent Study
224 Managerial Applications of Object-Oriented Programming I
***307** End-User Computing for Business Applications
***CS 125** Introduction to Computer Science

295, 296 & 395 are restricted to those courses offered and approved by the area faculty.

*No more than one of these programming courses may be counted toward the emphasis area.

Management and Organizational Behavior
The study of management and organizational behavior focuses on the behavior of individuals and groups in an organizational setting. The business environment today demands graduates with skills who can effectively make decisions involving working with and leading people.

The Management and Organizational Behavior emphasis stresses the qualitative approaches to business.

The major areas of focus are: the theory and functions of management; the management of human resources; the development of strategic policies in an organization; organizational design and conflict resolution; entrepreneurship; and international management. In covering these topics, both classic and current perspectives are provided.

To earn the emphasis designation in Management and Organizational Behavior a student must complete **four** (4) courses (twelve [12] hours) to include BA 311, Advanced Management and Organizational Behavior, **plus three** (3) additional courses selected from:

Business Administration
309 Human Resource Management
312 Industrial and Labor Relations
317 International Management
318 Industrial and Organizational Psychology (same as Psych 318)
319 Employee Training and Development
392 Entrepreneurship/Small Business Management
295/395 Business Administration Problems/Seminars
296 Independent Study

295, 296 & 395 are restricted to those courses offered and approved by the area faculty.

Marketing
Marketing is an important part of any business or organization and can enhance growth, increase profits, and help achieve the organization's goals. Furthermore, marketing plays an important role in our society by enhancing our quality of life. Equally important, marketing offers varied and interesting career opportunities.

Marketing involves the activities needed to facilitate an exchange. This covers selling products, services or ideas to both consumers and business buyers. Many non-profit institutions are now enthusiastic users of marketing concepts; thus marketing majors find such untraditional areas as hospitals, churches, museums, universities and retirement homes often offer excellent entry level opportunities, in addition to such traditional firms as manufacturing and retailing concerns.

For an emphasis in Marketing, a student must complete at least four (4) courses (twelve [12] hours) selected from:

Business Administration
270 Management of Promotion
275 Marketing Research
301 Consumer Behavior
302 Quantitative Marketing Methods
303 Business-to-Business Marketing
315 Marketing Management
316 International Marketing
295/395 Business Administration Problems/Seminars
296 Independent Study

295, 296 & 395 are restricted to those courses offered and approved by the area faculty.

Specific Requirements BS in Accounting
Accounting focuses on analyzing and measuring business activity, processing that data into reports, and communicating the information to decision makers. The successful accounting professional needs to acquire the education and skills necessary to fulfill these roles in whatever area of accounting he or she enters. Excellent skills in mathematics are necessary to analyze the quantitative, financial and operating data that decision makers use in marketing, finance, personnel administration, and other business activities. Because accounting is part of an information system, the ability to communicate financial results to managers, clients and others who need the information is a vitally important skill for professional accountants.

Mission: The Accounting Area of the University of Missouri-St. Louis endeavors to prepare high-potential students of diverse backgrounds to succeed in accounting careers, either through a bachelors or masters degree program. We seek to provide these students with the means to deal with the challenges confronting the accounting profession and to contribute to their solutions. Our faculty strives to further the practice and understanding of accounting through its teaching, research, and service to the profession.

Effective November, 1995, the accounting degree programs at UM-St. Louis are separately accredited by AACSB - The International Association for Management Education. This unique accreditation is not currently shared by any other St. Louis college or university.

For the BSA degree a student must complete at least 7 business courses (21 hours) beyond required business core courses. These 7 courses include:

Business Administration
340A Financial Accounting and Reporting I
340B Financial Accounting and Reporting II
345 Cost Accounting
347 Income Taxes
348 Auditing

In addition to the five courses above, either
Business Administration
215: Information Systems Analysis; **or**
344: Computer Applications in Accounting,
must be completed;

A minimum of one business course must be selected from the following:
Business Administration
341 Financial Accounting and Reporting III
342 Financial Accounting and Reporting IV
343 Accounting for Governmental and Nonprofit Entities
349 Business Income Taxation
295/395 Business Administration Problems/Seminars

295 and 395 are restricted to those courses offered and approved by the area faculty.

Two (2) additional courses (six [6] hours) must be successfully completed to earn the BSA degree:
One course selected from **Comm 30**: Interpersonal Communication I; **or**
Comm 40: Introduction to Public Speaking; **or**
BA205: Contemporary Business Communication.

One course selected from:
Philosophy
30 Approaches to Ethics; **or**
154 Business Ethics.

Specific Requirements-BS in Management Information Systems (BSMIS)
Management Information Systems (MIS) are key building blocks of modern organizations. These systems play a crucial role in managing and organizing work. They provide inputs to managers for strategic and operational decision making. They also help organize and streamline processes to improve productivity and reduce cycle times. Thus, MIS plays a crucial role in enhancing the competitive position of an organization. MIS professionals play a vital role in re-engineering organizations for competing in the interconnected global markets of today. An MIS professional needs to acquire functional knowledge in different areas of business and an overall perspective on the objectives and mission of the organization. MIS professionals need to develop strong communication and analytical skills to understand and design business processes and systems. A wide variety of technical and organizational skills are needed to effectively utilize the current information and communications technologies in developing business solutions. Some of the specific skills include systems analysis and design, database management, programming languages, telecommunication, decision support systems, and management of systems. Besides developing technical skills, organizational skills are also very important for MIS professionals in implementing systems and the changes associated with the new systems.

Mission: The MIS area in the College of Business Administration at the University of Missouri-St. Louis endeavors to prepare high-potential students of diverse backgrounds for successful careers in the MIS profession. Careers in MIS may include programming, systems analysis and design, database administration, end user support, network administration, and management consulting. We seek to provide students with the skills to deal with the challenges confronting the MIS profession and to contribute to their solutions. Our faculty strives to further the practice and understanding of MIS through its teaching, research, and service to the profession. Facilities at the college, such as hi-tech case rooms, advanced computer labs, latest software tools, and infrastructure, help students understand and practice the latest in information systems technology.

For the BSMIS degree a student must complete at least seven (7) courses (twenty-one [21] hours) beyond required business core courses as specified below.

1. A student must complete 5 courses (15 hours)
a) Programming/File Structure Requirement (6 hours in either Track 1 or Track 2)

TRACK 1
Business Administration
109 COBOL Programming **and**
209 File Management

TRACK 2
Business Administration
224 Managerial Applications of Object-Oriented Programming I **and**
225 Managerial Applications of Object-Oriented Programming II

b) Analysis and Design Requirement (6 hours)
Business Administration
215 Information Systems Analysis
310 Information Systems Design

c) Database Requirement (3 hours)
Business Administration
212 Database Management Systems

2. A student must complete two courses from the following to include at least one Business Administration (BA) course at the 300-level (6 hours):

Business Administration
109 COBOL Programming (if not used to fulfill requirements in 1 A)
209 File Management (if not used to fulfill requirements in 1 A)
224 Managerial Applications of Object-Oriented Programming I (if not used to fulfill requirements in 1A)
225 Managerial Applications of Object-Oriented Programming II (if not used to fulfill requirements in 1A)
304 The Management of Information Systems
305 Management of Telecommunications
306 Decision Support Systems
307 End-User Computing for Business Applications
344 Computer Applications in Accounting*
351 Computer Applications in Finance*
295/395 Business Administration Problems/Seminars
296 Independent Study
Computer Science
240 Computer Hardware & Small Computer Systems I
241 Computer Hardware & Small Computer Systems II
332 Artificial Intelligence
376 Operating Systems

295, 296 & 395 are restricted to those courses offered and approved by the area faculty.

*Only one of BA 344 and 351 may be used for the requirement in 2.

Minors in Business Administration
Students earning a degree outside the College of Business Administration may earn any of the minors listed below. Students earning a BSBA degree may, in addition to their emphasis(es) area(s), also earn a minor in accounting or

MIS or international business; students earning a BS degree in accounting or MIS may earn a minor in any field outside their major, but not in general business.

Students earning a degree outside the College of Business may, for some courses, satisfy course prerequisite requirements using courses other than those listed in the course descriptions. Students should check with the individual areas regarding alternative prerequisites. These alternative prerequisites apply only to students not earning degrees within the College of Business.

Minor in General Business
This minor is available only to students not seeking the BSBA, BSA or BSMIS degrees.

Students must successfully complete five of the following courses:
Business Administration
103 Computers and Information Systems
140 Fundamentals of Financial Accounting
156 Legal Environment of Business
204 Financial Management
206 Basic Marketing
210 Management and Organizational Behavior
252 Introduction to Operations Management

See additional requirements for minors, below.

Minor in Accounting
This minor is available to all but BSA students.

Students must successfully complete:
Business Administration
140 Fundamentals of Financial Accounting
145 Managerial Accounting

and three of the following courses:
Business Administration
340A Financial Accounting and Reporting I
340B Financial Accounting and Reporting II
341 Financial Accounting and Reporting III
342 Financial Accounting and Reporting IV
343 Accounting for Governmental and Nonprofit Entities
344 Computer Applications in Accounting
345 Cost Accounting
347 Income Taxes
348 Auditing
349 Business Income Taxation
295/395 Business Administration Problems/Seminars

295 & 395 are restricted to those courses offered and approved by the area faculty.

Minor in International Business
This minor is available to all but international business emphasis students.

Fifteen hours - to consist of at least five courses from the following international business courses with no more than one independent study course in the fifteen hours:

Business Administration
314 Managing the Global Workplace
316 International Marketing
317 International Management
326 Business in China
380 International Finance
393 International Strategic Management
396 Internship in International Business (no more than three hours may count)
295/395, Business Administration Problems/Seminars
296 Independent Study

BA 295, 296 and 395 are restricted to those courses approved by the International Business Committee. Students are encouraged to spend at least one semester in an exchange program offered through the University and approved by the College of Business Administration.

Minor in Finance
This minor is available to all but BSBA students.
Students must successfully complete:
Business Administration
204 Financial Management

and four of the following courses:
Business Administration
207 Practicum in Investments
327 Practicum in Finance
328 Estate Planning and Trust
332 Principles of Insurance
333 Life Insurance
334 Investments
335 Financial Risk Management
336 Treasury Management
337 Principles of Real Estate
338 Practices of Personal Financial Planning
339 Retirement Planning and Employee Benefits
350 Financial Policies
351 Computer Applications in Finance
355 Financial Services Industry and Instruments
356 Commercial Bank Management
380 International Finance
295/395 Business Administration Problems/Seminars
296 Independent Study

295, 296, 395 are restricted to those courses offered and approved by the area faculty.

Minor in Logistics and Operations Management
This minor is available to all but BSBA students.
Students must successfully complete:

Business Administration
252 Introduction to Operations Management
and four of the following courses:
Business Administration

306 Decision Support Systems
308A Production and Operations Management
308B Business Logistics Systems
308C Lean Production in Manufacturing and Service Operations
308D Service Operations Management
329 Business Forecasting
330 Quality Assurance in Business
375 Operations Research
385 Operations Research II
295/395 Business Administration Problems/Seminars
296 Independent Study
224 Managerial Applications of Object-Oriented Programming I*
307 End-User Computing for Business Applications*
Computer Science
125 Introduction to Computer Science*

295, 296, 395 are restricted to those courses offered and approved by the area faculty.

*No more than one of these programming courses may be counted toward the minor.

Minor in Management and Organizational Behavior
This minor is available to all but BSBA students.

Students must successfully complete:
Business Administration
210 Management and Organizational Behavior
311 Advanced Management and Organizational Behavior

and three of the following courses:
Business Administration
309 Human Resource Management
312 Industrial and Labor Relations
317 International Management
318 Industrial and Organizational Psychology (same as Psych 318)
319 Employee Training and Development
392 Entrepreneurship
295/395 Business Administration Problems/Seminars
296 Independent Study

295, 296, & 395 are restricted to those courses offered and approved by the area faculty.

Minor in Management Information Systems
This minor is available to all but BSMIS students.

Students must successfully complete:
Business Administration
103 Computers and Information Systems

and one of the following programming courses:
Business Administration
109 COBOL Programming
224 Managerial Applications of Object-Oriented Programming I

and three of the following elective courses (at least one of the three courses must be 212, 215, or a 300-level course):
Business Administration
109 COBOL Programming*
209 File Management
224 Managerial Applications of Object-Oriented Programming I*
225 Managerial Applications of Object-Oriented Programming II*
212 Database Management Systems
215 Information Systems Analysis
304 The Management of Information Systems
305 Management of Telecommunications
306 Decision Support Systems
307 End-User Computing for Business Applications
310 Information Systems Design
295/395 Business Administration Problems/Seminars
296 Independent Study

295, 296, & 395 are restricted to those courses offered and approved by the area faculty.

*May be used if it was not used to satisfy the preceding programming course requirement.

Minor in Marketing
This minor is available to all but BSBA students.

Students must successfully complete:
Business Administration
206 Basic Marketing

and four of the following courses:
Business Administration
270 Management of Promotion
275 Marketing Research
301 Consumer Behavior
302 Quantitative Marketing Methods
303 Business-to-Business Marketing
315 Marketing Management
316 International Marketing
295/395 Business Administration Problems/Seminars
296 Independent Study

295, 296, & 395 are restricted to those courses offered and approved by the area faculty.

Additional Requirements for Minors
In addition to completing the above courses, the following requirements for minors in the College of Business Administration must be met:

1) A student earning a minor in General Business may not take more than 30 hours of business courses within the 120 required for a degree.

2) A student must earn a grade point average of 2.0 or better, and must earn a C- or better, in all courses

included in the minor.

3) No course taken on a satisfactory/unsatisfactory basis may be applied toward fulfilling the minor requirements.

4) At least 9 credit hours of the courses required for the minor must be taken in residence at UM-St. Louis.

5) A minor is not conferred without completion of a UM-St. Louis baccalaureate degree.

6) Minors may be completed for up to two years following conferral of the baccalaureate degree. All work towards a minor following conferral of the baccalaureate must be completed in residence at UM-St. Louis.

Minor in Employee Training and Development
The College of Business Administration and the Evening College offer a minor in employee training and development. Information on this minor in can be found in the Evening College section of this book.

Cooperative Education and Internship Programs
Cooperative Education and Internship Programs are available for students seeking career-related employment while enrolled in college. These programs afford business students an opportunity to gain practical experience and earn a substantial income. Co-ops and internships are administered through Career Services, 308 Woods Hall.

International Business Certificate
Students who participate in the Missouri-London Program (take courses and work for one semester in London) or other study abroad programs may apply that experience toward an International Business Certificate. Details may be found in the Interdisciplinary Studies section of the *Bulletin*.

Graduate Studies

The College of Business Administration offers three graduate degrees: the Master of Business Administration (MBA), the Master of Science in Management Information Systems (MS in MIS), and the Master of Accounting (MAcc).

Admission Requirements
The admissions decision is based on a combination of factors. Consideration is given to a candidate=s academic record, scores on the Graduate Management Admissions Test (GMAT), work and leadership experience, a personal narrative on the application form, and recommendations.

Applicants are required to take the GMAT. This aptitude test is designed to measure certain mental capabilities important in graduate business studies. The examination tests ability to read, understand, and reason logically with both verbal and quantitative material. The test is not a measure of achievement or knowledge of business administration curriculum. Information concerning the GMAT may also be obtained from the admission advisers or the Office of Graduate Studies in Business.

Master of Business Administration Program (MBA)
The MBA is available in two formats: the evening MBA program and the Professional MBA On-Line program. Both are fully accredited by AACSB - the International Association for Management Education (formerly the - American Assembly of Collegiate Schools of Business), the authorized professional accrediting body in collegiate business education. The MBA programs are designed to prepare students for administrative positions. They also provide an appropriate foundation for students contemplating doctoral work and eventual careers in college teaching or in research. The programs are designed for students who have bachelor's degrees from accredited institutions, including those with undergraduate backgrounds in the sciences, engineering, humanities, or arts.

The Evening MBA Program
A 54-hour or two-year program, the MBA curriculum provides training in the fundamental areas of administration. The core program is designed to generate a working knowledge of the concepts and interrelationships of four broad categories fundamental to management training:

- The external environment confronting business organizations and management=s response to interactive legal, economic, social, and political issues.
- The internal operation of various business organizations and management=s role in channeling human behavior to satisfy both personal and organizational goals.
- Basic concepts, terminology, and interaction of the accounting, marketing, finance, information technology and operations management disciplines.
- Quantitative management decision-making models put to use in the context of current management information systems.

The total degree program is integrated by a course in strategy formulation and implementation in the student's last semester. There is no thesis requirement; however, students interested in undertaking an individual research project may earn elective credit by enrolling in a supervised independent study course.

Degree Requirements
Depending on the student=s previous background, programs will range from 39 to 54 hours. Course work must be completed within a six-year period. At least 30 hours of coursework must be taken while enrolled as an MBA candidate at UM-St. Louis.

Candidates must take at least one course at either the core level or from the business breadth requirements list in each of the following six areas: accounting, finance, management, marketing, information systems, and management science. Also, no more than 15 credit hours may be taken in any one of the six areas.

Students are also required to have completed the equivalent of Econ 301, Quantitative Methods and Modeling in Economics, Business, and the Social Sciences, by the end of their first 15 hours in the program.

Required Courses
The following courses or their equivalents are required of all degree candidates.

General Requirements
Econ 301, Quantitative Methods and Modeling in Economics, Business, and the Social Sciences
BA 405, Managerial Communication
BA 408, Economics for Managers
BA 412, Law, Ethics, and Business
MS/IS 481, Statistical Analysis for Management Decisions
BA 490, Strategy Formulation and Implementation

Core Requirements
Accounting 440, Financial and Managerial Accounting
Finance 450, Financial Management
Management 460, Organizational Behavior and Administrative Processes
Marketing 470, Contemporary Marketing Concepts
MS/IS 480, Management Information Systems
MS/IS 483, Production and Operations Management
Business Breadth Requirements
A student must take a second-level course in three of the following areas:

Accounting:
Accounting 442, Accounting for Decision Makers
Finance: Any approved 400-level course beyond Finance 450
Management: Any approved 400-level course beyond Management 460
Marketing: Any approved 400-level course beyond Marketing 470
Information Systems: Any approved 400-level course beyond MSIS 480
Management Science: Any approved 400-level course beyond MSIS 483

Electives
The student must take a minimum of nine hours of elective courses. A maximum of six hours of electives may be taken at the 300 level. Nine elective hours may be taken outside the College of Business Administration if the student has approval in advance from a graduate adviser for the specific courses desired.

Previous Education
Based on a formal review and evaluation by the Office of Graduate Studies in Business, students may be granted waivers of certain courses from the general and core requirements. Waivers depend on the applicability of prior coursework and the student's performance in these courses. Regardless of the number of courses waived, all students must take at least 39 hours to earn the degree.

Professional MBA On-Line Program
An Internet-based version of the MBA program exists as an alternative to the traditional part-time evening program. The Internet-based program is designed in a 48 credit hour lock-step format and is intended for students who are unable to attend classes on a regular basis. As such, students will only meet on campus one weekend per month throughout the program, with the remainder of the interaction between instructor and students taking place over the Internet. Students proceed through the program as part of a cohort group and complete the requirements for the degree in two years.

The first 30 hours of the Internet-based program consist of the same core courses required in the evening program (except for the mathematics and economics requirements, which are treated as prerequisites and must be satisfied prior to starting the program). The remaining 18 hours consist of the following courses:
Accounting 442, Accounting for Decision Makers
Finance 459, Seminar in Finance
Management 469, Seminar in Management
Marketing 474, Seminar in Marketing
MS/IS 424B, Seminar in Management Information Systems
MS/IS 494B, Seminar in Logistics and Operations Management

Master of Science in Management Information Systems (MS in MIS)
The Master of Science in MIS program is designed to provide the technical and managerial knowledge and skills to operate successfully in the rapidly changing careers associated with the design, development and management of computer-based information, telecommunications, and Internet applications. The program accommodates students with undergraduate degrees specializing in MIS, business, and computer science, as well as students with undergraduate degrees outside business. The program allows specialization in telecommunications, electronic commerce, or business systems development; the program also allows students not to select a specialization option.

MS in MIS Program Degree Requirements
The program may require as few as 30 hours for students with undergraduate business degrees from AACSB accredited institutions. Because of the need to attain general business core competencies as a foundation of the MS in MIS requirements, students with no academic

business background will be required to take additional hours as outlined below.

General Requirements
All students must meet course requirements in quantitative reasoning, general business and MIS. Students must complete a minimum of 30 credit hours beyond the general business core. Of the 30 hours beyond the general business core, at least 15 credit hours in MIS must be completed at the 400 level, and at least 24 of the hours must cover topics beyond MSIS 480 and MSIS 423a. Students with a B.S.B.A. with an emphasis in MIS or a B.S. in MIS from an AACSB accredited institution may, at the student=s discretion, substitute two electives for MSIS 480 and MSIS 423a. Waivers may be granted for other courses with appropriate undergraduate course work.

Quantitative Reasoning Requirement
Students are required to have completed by the end of their first semester in the program the equivalent of Econ 301, Quantitative Methods in Modeling in Economics, Business and the Social Sciences with a grade of C or better. Students are also required to complete the equivalent of MSIS 481, Statistical Analysis for Management Decisions with a grade of C or better. These courses do not count towards the graduate degree, but waivers may be granted with appropriate undergraduate course work.

General Business Core
Students must have a B.S. in MIS, or a B.S.B.A. with an emphasis in MIS that requires a managerial communication course, and course work equivalent to at least five of the following courses:
BA 412, Law, Ethics, and Business
ACCT 440, Financial and Managerial Accounting
FIN 450, Financial Management

MGMT 460, Organizational Behavior and Administrative Processes
MKTG 470, Contemporary Marketing Concepts
MSIS 483, Production and Operations Management
BA 490, Strategy Formulation and Implementation

Students having not met this prerequisite to the program must complete BA 405 Managerial Communication and course work from at least five of the courses listed above.

Program Requirements
A. Basic MIS courses 9 credit hours
MSIS 480, Management Information Systems
MSIS 423a, Applications of Programming for Business Solutions
MSIS 485, Management Information Systems: Theory and Practice.

B. MIS Specialization Courses 15 credit hours
See specializations following this overall description.

C. MIS Electives 6 credit hours
Students must take at least two of the following courses. A course cannot count for credit as an elective if it is used as a specialization course (see Section B).
BA 414, Introduction to Geographic Information Systems
MSIS 423b, Managerial Applications of Object-Oreinted Technologies
MSIS 423c, Business Programming and File Systems
MSIS 423d, Internet Programming for Business
MSIS 424a, Seminar in Current Management Information Systems Topics
MSIS 424c, Business Process Design
MSIS 424d, Management of Transnational Information Systems
MSIS 425, Advanced MIS Applications
MSIS 426, Management of Client/Server Computing
MSIS 488, Information Systems Analysis
MSIS 489, Database Management Systems
MSIS 491, Electronic Commerce
MSIS 492, Information Systems Strategy
MSIS 493, Simulation for Managerial Decision Making
MSIS 495, Information Systems Design
MSIS 496, Telecommunications: Design and Management
MSIS 497, Decision Support Systems
MSIS 498, Fourth Generation Languages and End User Computing
MSIS 499, Management Information Systems Thesis Research
CSC 377, Operating Systems for Telecommunications
CSC 427, Systems Administration

MIS Specialization Options
(These are the course requirements for Category B identified previously).
1. Business Systems Development
The following four courses are required:
MSIS 488, Information Systems Analysis
MSIS 489, Database Management Systems
MSIS 495, Information Systems Design
MSIS 496, Telecommunications: Design and Management
Also required is one additional MIS course not being used for credit in Section C.

Students having earned a B.S.B.A. with an emphasis in MIS or a B.S. in MIS from a AACSB accredited university may be granted waivers for MSIS 488 and MSIS 489 with appropriate course work. However, they **must** take MSIS 495 and additional electives of their choice to complete this option.

2. Telecommunications
The following five courses are required:
MSIS 496, Telecommunications: Design and Management
MSIS 423b, Managerial Applications of Object-Oriented Technologies
MSIS 426, Management of Client/Server Computing

CSC 377, Operating Systems for Telecommunications
CSC 427, Systems Administration

3. Electronic Commerce
The following five courses are required:
MSIS 491, Electronic Commerce
MSIS 423d, Internet Programming for Business
MSIS 426, Management of Client/Server Computing
MSIS 489, Database Management Systems
MSIS 496, Telecommunications: Design and Management

4. General MIS (no track)
Any five courses from the list under Category C (not being used for credit in Category C) are required.

Master of Accounting Program (MAcc)
The MAcc program is intended for students preparing to enter the accounting profession or furthering existing accounting careers. Designed to accommodate both students with undergraduate accounting majors and students with other undergraduate backgrounds, the program permits students to take a generalized course of study or specialize in income taxation or auditing/systems. It may require as few as 30 credit hours for students with undergraduate accounting degrees.

Because of the need to attain general business and professional accounting core competencies as a foundation for the MAcc requirements, students with no academic business or accounting background will be required to take additional credit hours as outlined below.

General Requirements
All students must meet course requirements in mathematics, general business, and accounting. Students must complete a minimum of 30 credit hours beyond the general business core and the professional accounting core. At least 15 credit hours in accounting must be completed, including at least 12 credit hours at the 400 level. At least 9 credit hours of the student's 30 credit hour program must be in 400-level non-accounting courses. Of the 30 credit hours beyond the general business and professional accounting core, 21 credit hours must be earned in courses at the 400 level.

Mathematics Background Requirement
Students are required to have completed by the end of their first semester in the program the equivalent of Economics 301, Quantitative Methods and Modeling in Economics, Business, and the Social Sciences, with a grade of C or better. Graduate credit is not given for this course but it may be waived with appropriate undergraduate coursework.

General Business Core
Students must have credit for the equivalent of one three-credit-hour course in each of the following subject areas: macroeconomics, microeconomics, financial accounting, managerial accounting, marketing, financial management, organizational behavior, and business strategy. These requirements may be met with graduate-level course
work or may be waived with appropriate courses taken as an undergraduate.

Professional Accounting Core
Students must have credit for the equivalent of each of the following three-credit-hour courses. Some of these courses may be taken concurrently with MAcc degree requirements (listed below) or may be waived with appropriate courses taken as an undergraduate.

340A, Financial Accounting and Reporting I
340B, Financial Accounting and Reporting II
344, Computer Applications in Accounting
345, Cost Accounting
or Accounting
441, Concepts in Management Accounting
347, Income Taxes
348, Auditing

MAcc Degree Requirements (minimum: 30 credit hours)

Accounting Courses (minimum: 15 credit hours, 12 credits at 400-level)
341, Financial Accounting & Reporting III*
342, Financial Accounting & Reporting IV*

Research course-At least one of the following courses must be completed:
Accounting 421, Professional Accounting Research
Accounting 431, Tax Research

Seminar- At least **one** of the following courses must be completed:
Accounting 445, Seminar in Financial Accounting Theory
Accounting 439, Seminar in Taxation
Accounting 446, Seminar in Auditing

Accounting Electives -to meet 15 credit-hour and 400-level requirements

Non-Accounting Courses (minimum: 9 credit hours at 400-level)
405, Managerial Communication*
412, Law, Ethics, and Business*
MS/IS 480, Management Information Systems*
MS/IS 481, Statistical Analysis for Management Decisions*
MS/IS 483, Production and Operations Management*

Electives may be necessary to meet 9 credit-hour 400-level non-accounting requirement or minimum 30 credit-hour requirement (*=May be waived with appropriate undergraduate courses).

Taxation Emphasis

Students desiring an emphasis in taxation must complete **Accounting 431**, Tax Research, **Accounting 439**, Seminar in Taxation, **Accounting 433**, Taxation of Corporations and Shareholders, and at least two courses from the following list of electives:
Accounting 432, Taxation of Estates, Gifts, and Trusts
Accounting 434, Taxation of Partnerships and Partners
Accounting 435, Tax Practice and Procedure
Accounting 436, Advanced Topics in Taxation

Auditing/Systems Emphasis
Students desiring an emphasis in Auditing/Systems must complete
Accounting 421, Professional Accounting Research,
Accounting 446, Seminar in Auditing,
Accounting 449, Systems Auditing,
Accounting 447, Accounting Systems for Management Planning and Control, **and at least three** courses from the following list of electives:
MS/IS 480, Management Information Systems
MS/IS 423a, Applications of Programming for Business Solutions
MS/IS 488, Information Systems Analysis
MS/IS 489, Data Base Management Systems
MS/IS 495, Information System Design

Ph.D. in Business Administration Information Systems

Admissions Requirements
Admission decisions are made on the basis of past academic record, intellectual ability, GMAT or GRE score, and career commitment. Applications are accepted from students who have baccalaureate or graduate degrees. Past graduate work may be credited toward degree requirements where appropriate. Applicants must submit:

- Official academic transcripts.
- Official GMAT or GRE results in fields approved by the School.
- Three letters of recommendation (at least two from individuals with earned doctorates).
- A statement of objectives for the course of study.

Graduate Assistantships
Stipends for research and teaching assistantships (nine month/20 hours per week) are awarded on a competitive basis. Out-of-state educational fees are waived for graduate assistants.

Degree Requirements
The Ph.D. in the School of Business Administration requires 75 course credit hours and a minimum of 6 dissertation credit hours beyond the baccalaureate degree. To ensure sufficient background for doctoral-level courses, students must demonstrate appropriate competence in quantitative reasoning, which is evident through completion of Econ 301 and BA 408 or equivalent. Students must also demonstrate appropriate competence in managerial communication, which is evident through completion of BA 405 or equivalent to be determined by the Ph.D. Coordinator.

Course Requirements
I. Business & Research Foundation Requirement: 11 Courses (31 credit hours)

Students are required to take:

IS 480	Management Information Systems
LOM 481	Statistical Analysis for Management Decisions
BA 412	Law, Ethics, and Business
ACCT 440	Financial and Managerial Accounting
FIN 450	Financial Management
MGMT 460	Organizational Behavior
MKTG 470	Contemporary Marketing Concepts
LOM 483	Production and Operations Management
LOM 484	Statistical Modeling
LOM 488	Experimental and Survey Design and Analysis
BA 406	Seminar in Business Administration

Teaching (1 credit hour)
The first eight courses (480, 481, 412, 440, 450, 460, 470, 483) will normally be waived if students have an UMSL MBA, MS in IS, or MAcc degree or equivalent course work.

II. Supporting Field Requirement: (9 credit hours)
Students must take 9 credit hours of graduate level courses beyond foundation course work in a supporting field: Supporting fields may include areas of business such as Accounting, Finance, Management, Logistics & Operations Management, and Marketing. Students may select supporting fields from outside the School of Business Administration (such as Applied Mathematics, Computer Science, Political Science, Psychology, etc.) with approval of the Ph.D. Coordinator.

III. IS Requirement: 12 courses (35 credit hours)
Students are required to take the following ten courses:

IS 423a	Applications of Programming for Business Solutions
IS 485	Management Information Systems: Theory and Practice
IS 488	I information Systems Analysis
IS 489	Database Management Systems
IS 496	Telecommunications: Design and Management
IS 407	Philosophical Foundations of Business Administration Research (2 credit hours)
IS 490a	IS research seminar
IS 490b	Quantitative research methods in MIS
IS 490c	Qualitative research methods in MIS
IS 490d	Special Topics in MIS

Students are required to take two of the following courses:

LOM 414 Introduction to Geographic Information Systems
IS 423b Managerial Applications of Object-Oriented Technologies
IS 423c Business Programming and File Systems
IS 423d Internet Programming for Business
IS 424a Seminar in Current Management Information Systems Topics
IS 424c Business Process Design
IS 424d Management of Transnational Information Systems
IS 425 Advanced MIS Applications
IS 426 Management of Client/Server Computing
IS 491 Electronic Commerce
IS 492 Information Systems Strategy
IS 495 Information Systems Design
IS 497 Decision Support Systems
IS 498 Fourth Generation Languages and End-User Computing

Other Requirements:
Upon completion of course work, students are advanced to candidacy by successfully completing a comprehensive examination in the field of MIS and a supporting field examination in the student's chosen area.

Students admitted to the program with a relevant Masters degree should pass the comprehensive examination and the supporting field examination within three years of admission to the Ph.D. program. Students admitted to the program with an undergraduate business degree should pass the comprehensive examination and the supporting field examination within four years of admission to the Ph.D. program. Students admitted to the program with an undergraduate degree outside of business should pass the comprehensive examination and the supporting field examination within five years of admission to the Ph.D. program. In these cases, prior coursework will be evaluated for equivalency to Section I course requirements.

Students are required to defend orally a dissertation proposal within one year of being advanced to candidacy.

Students are required to present one paper at a regional, national or international conference.

Student is required to submit one paper, approved by their dissertation advisor, to a refereed journal.

At least two semesters of supervised teaching in the School of Business Administration are required of all doctoral students.

Students must satisfy all Graduate School requirements.

The degree is awarded upon successful completion and defense of the Ph.D. dissertation. The dissertation must be defended orally within three years after approval of a Ph.D. dissertation proposal.

Graduate Certificate Programs in Business Studies

The College of Business Administration offers eight 18-hour Graduate Certificates. To be admitted to a graduate certificate program, students must meet the same requirements as those needed for a graduate degree program in business (see Admission Requirements in the Graduate Studies in Business Administration section of *this Bulletin*).

Certificate programs allow qualified graduate students to pursue a defined course of study in a specialized business topic. Without requiring completion of a 30 - 69-hour graduate business degree program, certificate programs provide students with the opportunity to obtain the advanced knowledge available through a graduate course of study.

In order to successfully complete a certificate program, students must have earned a 3.0 cumulative GPA in certificate classes. Unless otherwise specified, the certificate must be completed within six years. Students must also comply with all requirements related to matters such as prerequisites, academic probation, and other graduate business program policies.

Graduate Certificate Program in Business Administration

An 18 hour program designed to accommodate individuals with an undergraduate/graduate degree in a non-business field seeking core business knowledge. The program emphasizes course work designed to cover the major disciplines within the field of business. Upon completion the student will have a core knowledge of common business practices and corporate procedures.

To earn the certificate, students must complete six courses as prescribed below: All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate area coordinator and the director of graduate studies in business. In all cases, 18 hours are needed to complete the graduate certificate.

Program Requirements: (5 courses)
ACCT 440 Financial and Managerial Accounting
MGMT 460 Organizational Behavior and Administrative Processes
MKT 470 Contemporary Marketing Concepts
MS/IS 480 Management Information Systems

One of the following:
FIN 450 Financial Management
MS/IS 483 Production and Operations Management

Elective Course (1 course):
BA 405 Managerial Communication
BA 412 Law, Ethics and Business
***FIN 450** Financial Management
***MS/IS 483** Production and Operations Management

*Cannot be used as an elective if used as a program requirement.

Graduate Certificate in Electronic Commerce
New communication technologies are changing the way organizations work with one another, the way consumers purchase products, and even the type of organizations that exist. In fact, technology may be changing the fundamental processes and structures of business. This certificate will introduce students to the interaction of existing processes and structures, and the introduction of new technologies to develop models of business activity in technology intensive environments.

Students must complete 18 hours as specified below.
MSIS
480, Management Information Systems
423a, Applications of Programming for Business Solutions
423d, Internet Programming for Business
491, Electronic Commerce
496, Telecommunications: Design and Management
426, Management of Client/Server Computing

Students will have the opportunity to take additional electives should they desire to do so.

All course prerequisites and all course waivers are applicable. Substitute courses must be approved by the area coordinator of the MSIS area and the director of graduate studies in business. In all cases, 18 hours are needed to complete the certificate. Students should complete the certificate with 3 years from the time they first enroll in the program.

Graduate Certificate in Human Resources Management
The Graduate Certificate in Human Resources Management is an 18-hour course of study designed to focus on the multidimensional aspects of personnel operations within business organizations. The course of study emphasizes both the formal and informal sides of human resources management.

Requirements
Students must complete the following six courses or appropriate substitutes if course waivers are appropriate:
Management 460, Organizational Behavior and Administrative Processes
Management 461, Managing Human Resources
Management 464, Compensation and Benefits
Management 465, Union-Management Relations and Collective Bargaining
Management 466, Personnel Administration: Theory and Practice
MS/IS 481, Statistical Analysis for Management Decisions

Management 460, Management 461, and MS/IS 481 may be waived with equivalent undergraduate courses. If a student is able to waive any or all of these three courses, substitute courses (approved by both the coordinator of the management area and the director of graduate studies in business) will be provided. Substitute courses may include Management 462, Advanced Organizational Behavior and Administrative Processes, or a course from outside the College of Business Administration. In all cases, 18 hours are needed to complete the Graduate Certificate in Human Resources Management.

Graduate Certificate in Information Resource Management
The management of information as a resource will be the key to success in the 21st century. To manage this resource, efficient and effective methods for collection, maintenance and use of data must be established. This certificate exposes students to the managerial and technological concerns in the planning of effective transaction processing and/or decision support systems. Students must complete 18 hours as specified below. In addition, if they have not had the equivalent of MSIS 480, they must complete that course.

Programming Requirement: Students must complete one of the courses listed below:

MSIS 423a Applications of Programming for Business Solutions
MSIS 423b Managerial Applications of Object-Oriented Technologies
MSIS 423c Business Programming and File Systems
MSIS 423d Internet Programming for Business
MSIS 484 Business Programming and File Systems
MSIS 498 Fourth Generation Languages and End User Computing

Core Courses: Students must complete each of the three courses listed below:

MSIS 485 Management Information Systems: Theory and Practice
MSIS 488 Information Systems Analysis
MSIS 489 Database Management Systems

Elective Courses: Students must complete two courses from the following list. Students may take at most one additional programming course (marked with *), and may not use any course as an elective already used to meet the

Programming Requirement.

MSIS 423a Applications of Programming for Business Solutions*
MSIS 423b Managerial Applications of Object-Oriented Technologies*
MSIS 423c Business Programming and File Systems*
MSIS 423d Internet Programming for Business*
MSIS 424c Business Process Design
MSIS 492 Information Systems Management
MSIS 496 Telecommunications: Design and Management
MSIS 497 Decision Support Systems
MSIS 498 Fourth Generation Languages and End User Computing*

Students will have the opportunity to take additional electives should they desire to do so.

All course prerequisites and all course waivers are applicable. Substitute courses must be approved by the coordinator of the MSIS area, and the director of graduate studies in business. In all cases, 18 hours are needed to complete the Graduate Certificate in Information Resource Management. Students should complete the certificate within three years from the time they first enroll in the program.

Graduate Certificate in Information Systems Development
The certificate is an 18 hour program designed to provide a focus on the creation and modification of information systems for business. Topics related to systems development such as programming and database design are included in the course of study.

Requirements
Students must complete six courses as specified below (or appropriate substitutes if course waivers are approved):

MSIS
480, Management Information Systems
423a, Applications of Programming for Business Solutions
485, Management Information Systems: Theory and Practice
488, Information Systems Analysis
489, Database Management Systems
495, Information Systems Design

Students will have the opportunity to take additional electives should they desire to do so.

All course prerequisites and all course waivers are applicable. Substitute courses must be approved by the coordinator of the MSIS area and the director of graduate studies in business. In all cases, 18 hours are need to complete the certificate. Students should complete the certificate within 3 years from the time they first enroll in the program.

Graduate Certificate in Marketing Management
The Graduate Certificate in Marketing Management is an 18-hour program designed to provide a focused intensive study of the marketing management activity within organizations. This program is designed to serve a broad group of marketing managers, including those with interest in sales, brand management, promotion, and consumer behavior.

Requirements
Students must complete the following six courses or appropriate substitutes if course waivers are appropriate:

Marketing 470, Contemporary Marketing Concepts
Marketing 475, Consumer Motivation and Behavior
Marketing 478, Marketing and Business Research

Marketing Management:
Marketing 471, Marketing Planning and Strategy
Marketing 476, Marketing Communications
Marketing 477, Product Planning and Pricing

All course prerequisites and all course waivers are applicable. Substitute courses must be approved by the coordinator of marketing area and the director of graduate studies in business. In all cases, 18 hours (including at least 12 hours in marketing) are needed to complete the certificate.

Graduate Certificate in Taxation
The Graduate Certificate in Taxation is an 18-hour course of study designed to focus on the theory and practice of taxation as a subfield of accounting. The course of study emphasizes both the legal, as well as the academic analysis of taxation.

Requirements
Besides the admission requirements needed by all graduate business students, students seeking a graduate certificate in taxation must have the equivalent of an undergraduate degree in accounting from UM-St. Louis. An up-to-date tax course should be part of that degree although up-to-date tax knowledge may be evidenced through an old tax course combined with recent tax experience.

To earn the certificate, students must complete six courses as prescribed following:

Required Courses
Accounting 431, Tax Research
Accounting 433, Taxation of Corporations and Shareholders
Accounting 435, Tax Practice and Procedure

Three Additional Courses From:
Accounting 432, Taxation of Estates, Gifts, and Trusts

Accounting 434, Taxation of Partnerships and Partners
Accounting 436, Advanced Topics in Taxation
405, Managerial Communication or
412, Law, Ethics and Business

Students must complete the Graduate Certificate in Taxation within three years from the time they first enroll in the program.

Graduate Certificate in Telecommunications Management
Managing communications systems remains one of the most challenging, and demanding jobs. The telecommunications manager must balance the interests of business, technical, regulatory, and applications aspects of connectivity, as well as maintain network security. The challenge has intensified with the recent exponential growth in the Internet, which has revolutionized the way in which individuals and organizations conduct business.

The certificate focuses on the management of telecommunications systems for business. It includes courses form both MIS and computer science to provide the necessary technical and managerial perspectives. Student must complete six courses as indicated below.

MSIS
480, Management Information Systems
496, Telecommunications: Design and Management
423, Managerial Applications of Object-Oriented Technologies
426, Management of Client/Server Computing
Computer Science
377, Operating Systems for Telecommunications
427, Systems Administration

Graduate Certificate in Telecommunications Science
Telecommunications science deals with the design, management, and administration of computer networks. The telecommunications specialist has to deal with issues such as feasibility of the system, cost optimization of the design, administration of the system, and watch for information security leaks, while working within the framework of different regulatory agencies. The exponential growth of the Internet and the projected growth in electronic commerce has increased the need for trained professionals in telecommunications science.

Students will study telecommunications science form a technical perspective in four courses offered in the Department of Mathematics and Computer Science. In addition, they will study the regulatory and management aspects in two courses in the College of Business.

Computer Science
372, Object Oriented Analysis and Design
377, Operating Systems for Telecommunications
473, Client/Server Computing
427, Systems Administration
MSIS
480, Management Information Systems
496, Telecommunications: Design and Management

Special Interdisciplinary Degree
The College of Business Administration also cooperates with the Departments of Economics and Political Science in the College of Arts and Sciences in offering a master=s degree in public policy administration (MPPA). For information on the MPPA degree program, see the Inter-school Studies section of this *Bulletin*.

General Statement of Policy Applicable to All Students Taking Business Courses

Academic Misconduct
The College of Business Administration views academic dishonesty as a serious offense. Unless instructed by their instructor to the contrary, students should assume that all class assignments are to be done independently. For independent assignments (e.g., a case analysis, take-home or in-class exams), giving or receiving aid, unless authorized by the instructor, is considered academic dishonesty. If the student is uncertain concerning the nature of an assignment, it is his/her responsibility to seek the instructor=s guidance. For more information on academic misconduct, refer to the appendix of this *Bulletin* and the UM-St. Louis Student Handbook.

Career Outlook

The current economic climate appears to favor students with business training. Business college graduates with the B.S.B.A. degree usually obtain entry-level positions in areas requiring accounting, finance, management, management information systems, marketing, and quantitative backgrounds. Recent graduates of the College of Business Administration hold positions with a variety of local and national firms as accountants; internal auditors; sales representatives; cost, budget, and systems analysts; executive trainees; merchandisers; systems programmers; and purchasing agents.

Many graduates of the University's graduate business programs are employed in staff-level positions in local and national businesses, and opportunities for managerial posts are promising for the graduate with a master's degree in business administration. Additionally, several graduates have chosen to pursue careers in college teaching.

Course Descriptions
Courses in this section are grouped as follows: all undergraduate courses are listed under Business Administration; 400-level graduate courses are listed under Business Administration, Accounting, .Finance, Management, Management Science/Information Systems, and Marketing.

The College of Business Administration uses the University course numbering system (see p. 5) with the following clarifications:

100 to 199, sophomore, junior, or senior standing is required unless a specific exception is listed.
200 to 299, junior or senior standing is required.
300 to 399, junior, senior, or graduate standing is required unless a specific exception or restriction is listed.

A minimum grade of C- shall be required to meet the prerequisite requirement for any course. Prerequisites may be waived only by consent of both the instructor and the area coordinator. A minimum campus GPA of 2.0 is required for admittance to each 200- and 300-level Business Administration course.

93 Personal Finance for Nonbusiness Majors (3)
For future professionals who want to learn more about personal finance and how to better manage their resources. The topics include purchasing/leasing cars, home acquisitions, investing in stocks and bonds, mutual funds, retirement planning and health and life insurance. Special emphasis will be on the nontechnical aspects of these issues. Cannot be used for credit in BSBA program.

95 Topics in Business Administration (1-3)
Study of selected special problems in business and administration. May be repeated for credit with different topics. Cannot be included in BSBA program.

103 Computers and Information Systems (3)
The basic concepts of data processing and the fundamental principles of computer-based information systems are studied. The characteristics of computer hardware and software used in implementing business applications are considered. Students will develop skills in utilizing both mainframe and microcomputers.

104 FORTRAN Programming (3)
Prerequisite: 103. A study of the principles of programming digital computers using the FORTRAN language. Credit will not be granted for both 104 and Computer Science 122.

109 COBOL Programming (3)
Prerequisite: BA103 or Computer Science 125. Structured COBOL programming techniques for business applications are presented. Included are report generation, control breaks, output editing, debugging, tables, and sort concepts.

140 Fundamentals of Financial Accounting (3)
Prerequisites: Math 30 and completion of 27 credit hours. This is a one-semester course in financial accounting theory and practices, with primary emphasis upon the accounting cycle and the preparation and interpretation of corporate financial statements.

145 Managerial Accounting (3)
Prerequisites: Math 30 and BA140. This is an advanced course that goes beyond the scope of a second-semester course in fundamentals of accounting. The development, interpretation, and use of relevant cost behavior, control, and traceability concepts for management planning, controlling, and decision making are emphasized. Topics include: an introduction to product costing, the contribution concept, direct costing, performance standards and variance analysis, responsibility accounting, segment profitability, alternative choice decisions, and capital budgeting.

156 Legal Environment of Business (3)
Prerequisites: Econ 51 and BA140. An introduction to the nature and meaning of law, sources of law, legal process and institutions. The legal environment of business is defined as: the attitude of the government toward business, the historical development of this attitude; current trends of public control in taxation, regulation of commerce, and competition; freedom of contract, antitrust legislation and its relationship to marketing, mergers, and acquisitions; and labor management relations.

195 Topics in Business Administration (1-3)
Prerequisites: Vary with topic; contact the College of Business Administration. Study of selected special problems in business and administration. May be repeated for credit with different topics.

204 Financial Management (3)
Prerequisites: Econ 52, MT 105, and BA140, and a 2.0 campus GPA. The study of a firm=s need for funds; the institutions, instruments, and markets concerned with raising funds; and the techniques of analysis used to determine how effectively these funds, once raised, are invested within the firm.

205 Contemporary Business Communication (3)
Prerequisites: English 10 or equivalent and a min mum campus GPA of 2.0 (Comm 40 recommended, but not required.) A forum wherein business writing and speaking skills are addressed. Communication unique to business organizations is critiqued. Emphasis is placed on writing and verbal communication skills necessary to succeed in the business environment.

206 Basic Marketing (3)
Prerequisites: Econ 51, junior standing, and a 2.0 campus GPA. An examination of the character and importance of the marketing process, its essential functions, and the institutions performing them. Attention is focused on the major policies (such as distribution, product, price, and promotion) which underlie the multifarious activities of marketing institutions and the managerial, economic, and societal implications of such policies.

207 Practicum In Investments (1)
Prerequisite: 204 and a 2.0 campus GPA. Students will apply their knowledge of stocks and bonds by managing a real dollar portfolio of securities. This course requires that students perform technical and fundamental analysis, prepare research reports, present proposals and participate in group investment decisions. The University=s Student Investment Trust provides the money for students to invest. Course may be repeated for credit up to a maximum of 3 credit hours.

209 File Management (3)
Prerequisite: 109 and a 2.0 campus GPA. The course covers job control language, utilities, partitioned data sets, updating of sequential files, indexed files, direct and/or relative files. The topics are implemented in a COBOL environment. A database management system is used to illustrate design and implementation of business applications.

210 Management and Organizational Behavior (3)
Prerequisites: Junior standing and a 2.0 campus GPA. This course involves the study of the behavior of individuals and groups in an organizational setting. Specific topics examined include: motivation, leadership, organizational design, and conflict resolution, as well as basic coverage of management principles. In covering these topics, both @classic== and current perspectives are provided.

212 Database Management Systems (3)
Prerequisites: 209 or 225 and a minimum campus GPA of 2.0. This course provides an introduction to the design and use of databases in meeting business information needs. Topics include database planning, conceptual design, and data administration. The concepts are studied with projects involving the use of a current database management system.

215 Information Systems Analysis (3)
Prerequisites: 109, or 224, and a minimum campus GPA of 2.0. Techniques and philosophies of systems analysis are addressed. Included are: traditional versus structured design methods, computer-based tools for systems analysis, workbenches, design and analysis of database systems, maintenance of existing information systems, human/machine interfaces, and security and control.

224 Managerial Applications of Object-Oriented Programming I (3)
Prerequisites: (BA103 or Computer Science 122 or 125) and a 2.0 campus GPA. The course provides a study of the UNIX operating system and the C++ programming language as they pertain to managerial applications. In addition, the course will introduce the use of object-oriented programming methodologies.

225 Managerial Applications of Object-Oriented Programming II (3)
Prerequisites: 224 and a minimum campus GPA of 2.0. This course expands object-oriented skills taught in 224. The emphasis in this course is on object-oriented development tools and development in a client-server environment. The data management tools will include the use of SQL to access server-based databases.

250 Business Statistics (3)
Prerequisites: Math 100 and 105, BA103 and a 2.0 campus GPA. Construction and use of statistical models for business management. Students will learn techniques used for relational analysis and business forecasting and how to apply them in a business context. Tools include CHI-Square tests of statistical independence; analysis of variance; simple linear regression and correlation; multiple linear regression; and extrapolative techniques such as moving averages and exponential smoothing. Emphasis is placed on problem definition, construction of statistical models, analysis of data, and interpretation of results. Computers are used for extensive analyses of case data.

252 Introduction to Operations Management (3)
Prerequisites: A 2.0 campus GPA and either (Econ 51, BA 145, and BA 250) or (Math 180 and Statistics 132). An examination of the concepts, processes, and institutions which are fundamental to an understanding of manufacturing and service operations within organizations. Emphasis is on the management and organization of operations and upon the application of quantitative methods to the solution of strategic, tactical and operational problems.

256 Business Law: Contracts, Sales, Secured Transactions, Bankruptcy (3)
Prerequisites: BA140, Econ 51, and a 2.0 campus GPA, or junior standing and a 2.0 campus GPA. Introduction to the laws of contracts, sales, secured transactions, bankruptcy, and other selected topics.

257 Business Law: Negotiable Instruments, Business Organizations, Property (3)
Prerequisites: BA140, Econ 51, and a 2.0 campus GPA, or junior standing and a 2.0 campus GPA. Introduction to the laws of negotiable instruments, the principal-agent relationship, partnerships, corporations, property, and other selected topics.

270 Management of Promotion (3)
Prerequisite: 206 and a 2.0 campus GPA. A study of the design, organization, and implementation of the marketing communications mix. Various methods, such as advertising, personal selling, and publicity are analyzed as alternatives for use alone, or in combination, to stimulate demand, reseller support, and buyer preference. Particular topics considered include: media selection, sales promotional, packaging, and selling strategy, and their relationships in the promotion process.

275 Marketing Research (3)
Prerequisites: 103, 206, 250 and a 2.0 campus GPA. An investigation of the acquisition, presentation, and application of marketing information for management. Particular problems considered are defining information requirements, evaluating research findings, and utilizing information. Statistical methods, models, and/or cases are employed to illustrate approaches to marketing intelligence problems, such as sales forecasts, market delineation, buyer motives, store location, and performance of marketing functions.

289 Career Planning (1)
Prerequisite: A minimum of junior standing and a 2.0 campus GPA. The emphasis of this course will be to assist business students to develop an understanding of themselves as related to employment, to develop an understanding of the world of work, and to integrate these so that effective career decisions can be made.

295 Business Administration Problems (1-10)
Prerequisite: To be determined each time the course is offered and to include a minimum 2.0 campus GPA. Study of selected special problems in business and administration. May be repeated for credit with different topics.

296 Independent Study (1-3)
Prerequisite: Permission of the professor, the dean, and a minimum campus GPA of 2.0. Occasional special individual study topics under the guidance of a specific professor.

301 Consumer Behavior (3)
Prerequisites: 206 and a minimum campus GPA of 2.0. A study of such consumer functions as decision making, attitude formation and change, cognition, perception, and learning. The marketing concepts of product positioning, segmentation, brand loyalty, shopping preference and diffusion of innovations are considered in context with the environmental, ethical, multicultural and social influences on an increasingly diverse American consumer.

302 Quantitative Marketing Methods (3)
Prerequisites: 103, 206, 250 and a 2.0 campus GPA. Applications of stochastic, deterministic, and simulation techniques to decision areas, such as market potential, product diversification, physical distribution alternatives, retail location, media selection, and market exposure. Quantitative and computerized methods are used heavily to enhance decision making in marketing, especially the selection, allocation, budgeting, and forecasting of marketing resources.

303 Business-to-Business Marketing (3)
Prerequisites: Senior Standing, MT 105, BA206 and a 2.0 campus GPA. A study of the nature of the business-to-business (organizational) marketplace, concentrating on those aspects that differentiate it from consumer markets. The major focus of the course is marketing strategy, starting with analysis of the market wants and segments, concepts of pricing, the distribution arrangements, and buyer/seller relations. In this last area, consideration will be given to service, personal selling, sales promotion, and advertising, as found in the organizational marketplace. At all times emphasis is given to relating business-to-business marketing strategy to basic concepts in underlying business disciplines. Lectures and case discussions are used heavily in the course.

304 The Management of Information Systems (3)
Prerequisites: (109 or 224) and a minimum campus GPA of 2.0. Aspects and methods for managing the computer and information resources of organizations. Topics include aligning IS plans with corporate plans, MIS organizational structures, demonstrating the value of MIS to senior management, facility management, purchase decisions, software acquisition, software metrics, project management, security issues, and economic evaluation, as they relate to information resources.

305 Management of Telecommunications (3)
Prerequisite: 103 and a 2.0 campus GPA. The technical and managerial aspects of telecommunications as they apply to the business environment are discussed. Issues include: communications components and services, local area network architecture, managerial implementations, organizational issues, and cost/benefit analyses.

306 Decision Support Systems (3)
Prerequisites: 252 and a minimum campus GPA of 2.0. Applications of decision support systems and expert systems in a business environment are studied. Relationships between decision support systems, expert systems, and database management systems are explored.

307 End-User Computing for Business Applications (3)
Prerequisite: BA 109 or BA224 and a minimum overall GPA of 2.0. Methods for end user development of applications in a business environment are presented. An end-user programming language (for example, Visual Basic) is used for development of prototypical applications. Case studies and/or programming problems are used to illustrate technology available to end-users for creating software in a windows-based system.

308A Production and Operations Management (3)
Prerequisites: A minimum of 2.0 campus GPA and either (BA252 and Math 100) or (Math 250 and Statistics 132). Application of the tools and techniques of statistical decision theory and operations research to production and operating problems. Emphasis is on the use of mathematical modeling and simulation techniques to analyze complex and ill-structured problems in large scale systems.

308B Business Logistics Systems (3)
Prerequisites: A minimum of 2.0 campus GPA and either (BA 252 and Math 100) or (Math 250 and Statistics 132). Analysis of business logistics systems, their design and operation. Topics include network design, facility location, transportation, vehicle routing, storage and handling, capacity planning, inventory management, and customer service.

308C Lean Production in Manufacturing and Service Operations (3)
Prerequisites: A minimum of 2.0 campus GPA and either (BA 252 and Math 100) or (Math 250 and Statistics 132). Study of Lean Production philosophy and techniques in manufacturing and service operations. Topics include process analysis and continuous improvement techniques, quick set-ups, total productive maintenance, kanban scheduling, cellular production, team organization of workers, supplier relations, quality management, and the environmental aspects of production.

308D Service Operations Management (3)
Prerequisites: A minimum of 2.0 campus GPA and either (BA 252 and Math 100) or (Math 250 and Statistics 132). An examination of methods for designing and operating service delivery systems, such as in the health care, financial, transportation, hospitality, and governmental service industries. Topics include process and facility design, facility layout and location, queuing, demand forecasting and management, service quality, staffing, and personnel scheduling.

309 Human Resource Management (3)
Prerequisites: MT105 and BA210, and a 2.0 campus GPA. In-depth examination of selected human resource management issues from a contemporary manager=s viewpoint. Topics examined include: employee selection, performance appraisal, training and development, compensation, legal issues, and labor relations.

310 Information Systems Design (3)
Prerequisites: 212, 215, one of either 209 or 225 and a minimum campus GPA of 2.0. System design, implementation, and methods of systems installation and operation are presented. A system development project is required.

311 Advanced Management and Organizational Behavior (3)
Prerequisite: 210 and a 2.0 campus GPA. Building upon 210, this course provides a more detailed examination of motivation, leadership, group process, decision-making, job design, and organizational development. In addition to providing more detail in terms of content, this course provides the student with considerable practical experience through the use of class exercises, case studies, and small group discussions.

312 Industrial and Labor Relations (3)
Prerequisite: 210 and a 2.0 campus GPA. Emphasis is on the dynamic relationship between management, employees, unions, and government as determinants in the efficient and effective use of human resources. Current issues and case materials are used to supplement text and lecture.

314 Managing the Global Workforce (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, BA 210 and at least one of the following: BA 311 or BA 309 or enrollment in Honors College. A study of the international dimensions of organizational behavior and human resource management. The course provides an overview of the tools and skills that are necessary to understand and manage people in global organizations. Topics include motivation, leadership, communication, hiring, training, and compensation. Credit not granted for students who have taken BA 317.

315 Marketing Management (3)
Prerequisites: MT 105, BA206, one other three-hour marketing course, senior standing and a 2.0 campus GPA. An intensive analysis of major marketing decisions facing the firm, such as level, mix, allocation, and strategy of marketing efforts. Specific decision areas investigated include market determination, pricing physical distribution, product policy, promotion, channel management, and buyer behavior. Competitive, political, legal, and social factors that may affect such areas of decision are discussed. Cases, models, and problems are used heavily.

316 International Marketing (3)
Prerequisite: 206 and a 2.0 campus GPA. Marketing management problems, techniques and strategies needed to apply the marketing concept to the world marketplace. Understanding a country=s cultural and environmental impact on the marketing plan is emphasized, as well as competing in markets of various cultures. Worldwide consumerism, economic and social development, the spread of multinational corporations, business ethics, and current economic and marketing issues are examined.

317 International Management (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Econ 52 and BA 210; or consent of the area coordinator and the instructor. A study of international business and management practices. Topics covered include an introduction to international management and the multinational enterprise, the cultural environment of international management, planning in an international setting, organizing for international operations, directing international operations, international staffing, preparing employees for international assignments, and the control process in an international context. Credit not granted for students who have taken BA 314 or BA 393.

318 Industrial and Organizational Psychology (3)
(Same as Psych 318.) Prerequisites: Psych 201 or (MT 105 and BA210). This course introduces the student to psychological research and theories pertaining to human behavior in the work setting. Topics covered include: selection, performance appraisal, training, leadership, motivation, job satisfaction, and organizational design.

319 Employee Training and Development (3)
Prerequisite: A minimum 2.0 campus GPA. In addition, 210 or permission of instructor. An intensive study of training in organizations, including needs analysis, learning theory, management development, and development of training objectives and programs. Projects and exercises are used to supplement the readings.

326 Business in China (3)
Prerequisites: A minimum campus GPA of 2.0 and junior standing. Introduces students to the practices of doing business in China. Students will be introduced to the Chinese economic and business environment. Issues related to trade and foreign direct investment in China will be discussed. The course adopts an innovative approach, utilizing lectures, case analysis, projects, and student presentations.

327 Practicum in Finance (1-3)
Prerequisites: A minimum campus GPA of 2.0; one must have completed and/or be currently enrolled in at least 6 credit hours of finance electives and have consent of supervising instructor and Area Coordinator. A Business College GPA of at least 2.5 is also required. Students are employed in the field of finance where they apply the knowledge and skills learned in the classroom. Professional development and obtaining specialized work experience in a Track area are the primary goals. The student=s program will be monitored by a finance faculty member with the student providing a formal written report at the end of the project.

328 Estate Planning and Trusts (3)
Prerequisite: A minimum campus GPA of 2.0; BA 204 or consent of instructor and Area Coordinator. This course will focus on the responsibility of a financial planner in the formulation and implementation of an estate plan. Topics include wills, lifetime transfers, trusts, gifts, estate reduction techniques, tax implications in estate planning, business and inter-family transfers, dealing with incompetency, postmortem techniques, and the role of fiduciaries. Lectures, cases, and guest speakers will be used to stimulate analysis and discussion.

329 Business Forecasting (3)
Prerequisites: A minimum of 2.0 campus GPA and either (BA 252 and Math 100) or (Math 250 and Statistics 132). Further study of statistical tools for forecasting in a decision-making context. Topics include explanatory models (multiple regression), classical time series decomposition, and extrapolative techniques (exponential smoothing and Box-Jenkins procedures). In addition, methods for considering problems of intervention effects, seasonality, and collinearity will be discussed. Students will perform extensive analyses of time series data using computer packages.

330 Quality Assurance in Business (3)
Prerequisites: A minimum of 2.0 campus GPA and either (BA 252 and Math 100) or (Math 250 and Statistics 132). A study of statistical quality control concepts and procedures applicable to management systems, administrative activities, service industries, and nonprofit organizations. Some successful quality assurance programs will be examined.

331 Multivariate Analysis (3)
Prerequisites: A minimum of 2.0 campus GPA and either (BA 252 and Math 100) or (Math 250 and Statistics 132). A study of statistical techniques applicable to multivariable relationships.

332 Principles of Insurance (3)
Prerequisites: 204 and 2.0 campus GPA. This is a survey course intended to introduce students to the basic concepts of insurance. Topics include the nature of risks, types of insurance carriers and markets, insurance contracts and policies, property and casualty coverages, life and health insurance, and government regulations. The functions of underwriting, setting premiums, risk analysis, loss prevention, and financial administration of carriers are emphasized.

333 Life Insurance (3)
Prerequisites: 204 or equivalent and a minimum campus GPA of 2.0. This course explores the life insurance business from the perspective of both the consumer and provider. Coverage will include an analysis of the various types of life insurance products, aspects of life insurance evaluation, reinsurance, underwriting, and uses of life insurance in financial planning. Also included is an examination of the tax, legal, and ethical requirements.

334 Investments (3)
Prerequisite: 204 and a 2.0 campus GPA. Financial analysis of debt and equity instruments available on organized exchanges and in less tangible over-the-counter markets. Techniques of such analysis are presented in context with economic and management circumstances within the company, industry, and economy.

335 Financial Risk Management (3)
Prerequisites: 204 and a 2.0 campus GPA. A study of derivative securities (forward contracts, futures, swaps and options) used in financial risk hedging. Emphasis will be placed on financial innovations and methods for tailoring a preferred risk/return trade-off. In addition, a project or a simulation will be utilized to emphasize the effects of risk management on portfolio development.

336 Treasury Management (3)
Prerequisites: 204 and a 2.0 campus GPA. The focus of this course is on the role cash management plays in corporate finance. Topics include cash collection and payment systems, forecasting cash flows, electronic fund transfers, check processing, international cash management and managing bank relationships. Students passing the course with a grade of A or B are permitted to take the qualifying exam to become a Certified Cash Manager (CCM) under a special arrangement with the Treasury Management Association. Along with other finance courses, this class prepares students for careers in the treasury departments of major companies or with service providers like banks.

337 Principles of Real Estate (3)
Prerequisites: 204 and a 2.0 campus GPA. As an introduction to the real estate industry, the course broadly explores all phases of acquisition, development and disposal of real property. Topics include legal requirements of contracts, property rights, valuation and appraisal techniques, marketing, brokerage operations and practices, mortgage financing, leasing and property management.

338 Practice of Personal Financial Planning (3)
A minimum campus GPA of 2.0; BA 204 or consent of instructor and Area Coordinator. Professional financial planning requires broad knowledge of investments, insurance, income taxation, retirement planning, and estate planning, as well as certification requirements and legal/ethical issues. This course introduces students to the field of financial planning, and provides an integrated overview of the topics listed above. Students interested in the Financial Planning track are encouraged to complete this course prior to taking other courses in the track.

339 Retirement Planning and Employee Benefits (3)
Prerequisites: A minimum campus GAP of 2.0; BA 204 or consent of instructor and Area Coordinator. The course is designed to give students an understanding of the retirement planning process. Students will gain an appreciation of the usefulness (and shortcomings) of employee benefits and develop an ability to counsel others on important retirement and employee benefit decisions. Corporate pension and profit sharing plans, self-employed Keough plans, IRA=s annuities, health insurance and social security will be discussed.

340A Financial Accounting and Reporting I (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30, BA140, and 57 credit hours. Review of the foundations of financial accounting theory and of the financial statement preparation process. Accounting theory and practice related to current assets (except for investments in securities). The course includes an emphasis on unstructured case problem solving skills, communication skills, and interpersonal skills.

340B Financial Accounting and Reporting II (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30 and BA340A. Accounting theory and practice related to topics such as, investments in securities, operational assets, current and long-term liabilities, and leases. The course includes an emphasis on unstructured case problem solving skills, communication skills, and interpersonal skills.

341 Financial Accounting and Reporting III (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30 and BA340B. Accounting theory and practice related to topics such as income taxes, pensions, owner=s equity, earnings per share, and the statement of cash flows. The course includes an emphasis on unstructured case problem solving skills, communication skills, and interpersonal skills.

342 Financial Accounting and Reporting IV (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30 and BA340B. Accounting theory and practice related to topics such as business combinations, consolidated financial statements, multinational operations, foreign exchange transactions, and governmental and nonprofit organizations. The course includes an emphasis on unstructured case problem solving skills, communication skills, and interpersonal skills.

343 Accounting for Governmental and Nonprofit Entities (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30, BA140, and 57 credit hours. Principles of fund accounting and financial reporting for governmental and nonprofit entities.

344 Computer Applications in Accounting (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30, BA103, 145, and 340A. Managerial and financial accounting applications of computers budgeting, financial planning and analysis, and accounting information processing systems. Emphasis on development of systems for micro- and mainframe computers using high-level applications development software and on associated internal control and auditing problems.

345 Cost Accounting (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30, BA145, and 57 credit hours. The study of the basic principles of cost determination for, and control of, manufacturing and distribution activities. Topics include job-order costing, process costing, cost allocations, and the development and use of standard costs within a system of absorption costing.

347 Income Taxes (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30, BA145, and 57 credit hours. Fundamentals of federal income taxation. Topics include taxable entities, income, deductions, tax accounting methods, tax basis, and property transactions at both the conceptual and operational levels.

348 Auditing (3)
Prerequisites: A minimum campus GPA of 2.0. In addition, MT 105, BA340B, and 344 or 215. 344 or 215 may be taken concurrently. An introduction to auditing practice. Includes the social role of auditing and the services offered by auditors in internal, governmental, and public accounting practice. Emphasis is on the financial auditing process, including professional ethics, audit risk assessment, study and evaluation of internal control, gathering and evaluating audit evidence, and audit reporting decisions.

349 Business Income Taxation (3)
Prerequisite: A minimum 2.0 campus GPA. In addition, 347. A study of the federal income taxation of partnerships and shareholders and corporations, including subchapter S (small business) corporations with emphasis on problems encountered in their formation, operation, liquidation, and sale.

350 Financial Policies (3)
Prerequisites: 204 and a 2.0 campus GPA. The intensification and application of the concepts developed in 204. Special emphasis is given to the development of top management policies and their application toward complex problems of finance. Techniques for identifying and dealing with these problems before they become acute will be investigated. Cases will be integrated with appropriate outside reading.

351 Computer Applications in Finance (3)
Prerequisites: 103, 204, one 300-level finance course, and a 2.0 campus GPA. Financial problem solving and applications on the microcomputer. A project-oriented course with an emphasis on micro-sed finance projects: present value/IRR analysis, duration, immunization, portfolio optimization, leasing, capital budgeting, financial forecasting, options, and futures.

355 Financial Services Industry and Instruments (3)
Prerequisites: 204 and a 2.0 campus GPA. The theory of financial services, instruments, and markets is discussed. In this framework, the valuation consequences of money and capital markets, corporate control, complex contracting, and regulatory environment are developed. Topics also include hedging, interest rate risk, deposit insurance, and financial instruments.

356 Commercial Bank Management (3)
Prerequisites: Econ 52, BA204, and a 2.0 campus GPA. Corporate finance and microeconomics are applied to matters of importance to commercial bankers. Among the subjects treated are bank-asset portfolio construction, lending policies, liabilities management, bank capital structure, short-run cash management, financial market rates and flows, and quantitative models for bank management. Commercial bank management is analyzed from an internal viewpoint in terms of what bank managers should look for in asset management and why; what market conditions they should be aware of; and what techniques they can use to meet changing economic and financial conditions.

375 Operations Research (3)
Prerequisites: Math 100, BA 252, and a 2.0 campus GPA, or Math 250 and a 2.0 campus GPA. Applications of the theories and techniques of operations research to problems of business, government, and industry, with emphasis on the construction and utilization of quantitative decision models.

380 International Finance (3)
Prerequisites: Econ 51, BA 204 and a 2.0 campus GPA. A study of the international financial markets, instruments, and portfolio strategies. Topics will include international risks, foreign diversification and hedging techniques for international exposure. The use of derivative instruments and special markets are evaluated in the international corporate/investment setting.

385 Operations Research II (3)
Prerequisites: A minimum of a 2.0 campus GPA, BA 375 and either BA 250 or Statistics 132. Topics of special interest including mathematical programming, stochastic decision making, digital simulation, game theory, and other selected techniques. (Formerly Mathematical Programming).

390 Business Assessment Testing (0)
Prerequisite: Concurrent enrollment in BA 391. A one-time lab during which a major field exam in business is administered. Course graded on a Satisfactory/Unsatisfactory basis. Satisfactory grade required for graduation.

391 Strategic Management (3)
Prerequisites: Senior standing and BA 204, 206, 210, a minimum campus GPA of 2.0; and concurrent enrollment in BA 390. This is a capstone course drawing on the subject matter covered in prerequisite courses. Emphasis is on the formulation and implementation of corporate, business and functional strategies designed to achieve organizational objectives. Topics include the role of top management, globalization of business and ethical perspectives. Case studies and research reports may be used extensively. (It is preferred that this course be taken during the student=s final semester.)

392 Entrepreneurship/Small Business Management (3)
Prerequisites: BA 156, 204, 206, 210, and a 2.0 campus GPA. This integrative general management course is designed to communicate the academic principles of business management applicable to solving of problems of small- and medium-size businesses and assist in their development. This course will provide a background in the forms of business, the development of business plans and systems integration, venture capital, accounting, procurement, promotion, financing, distribution and negotiations for initial organization, and operation and expansion of the firm.

393 International Strategic Management (3)
Prerequisites: A minimum 2.0 campus GPA and, BA 314, 316 and 380 or consent of the instructor. A study of the international dimensions of strategic management. Provides an introduction to the key concepts and tools necessary for international competitive analysis. Topics include the international dimensions of strategy formulation and implementation, diversification, strategic alliances, and divestment. Credit not granted for students who have taken BA 317.

395 Business Administration Seminar (1-10)
Prerequisite: To be determined each time the course is offered and to include a minimum 2.0 campus GPA. May be repeated for credit.

396 Internship in International Business (3-6)
Prerequisites: Econ 51 and 52, BA 140 and 145, an additional 12 hours in BA, concurrent enrollment in a UM overseas program; also a 2.0 minimum campus GPA. The internship will be a supervised field experience in a business/international organization at a foreign site. Students will work for 10 weeks on projects directed by host organization supervisors in consultation with a UM-St. Louis faculty member. Prior to the field experience students will receive training that includes familiarization with the language and practices of the country=s business, the background of the host firm, and international information sources. The student will complete a written report of his/her project. Course may not be repeated for more than 6 hours credit.

405 Managerial Communication (3)
An analysis of business writing and speaking, and the communication conventions common in organizations. Emphasis is placed on developing skills critical to career advancement and necessary for effective organizational functioning. A second goal is to prepare students for assignments in other business courses. This course must be taken within the first 12 credit hours of study, preferably in the student=s first semester.

408 Economics for Managers (3)
The first portion of this course introduces microeconomic analysis of consumers, firms, and government. The concepts and tools of economic analysis are applied to the production and distribution functions of organizations. The last portion is devoted to the macroeconomic influence of capital markets, the influence of interest rates, inflation, and the business cycle.

410 Managerial Economic Analysis (3)
Prerequisites: BA 408 or Econ 51 and Econ 52. Microeconomic analysis of consumers, firms, and government. The concepts and mathematical tools of economic analysis are applied to the production and distribution functions of organizations.

411 Analysis of National Economic Environment (3)
Prerequisites: BA 408 or Econ 51 and Econ 52. The character and functioning of the national economic system; analyzing and forecasting fluctuations in national income and product, employment, and prices; the influence of monetary and fiscal policies. Emphasis is on the acquisition of knowledge concerning forces affecting all business firms.

412 Law, Ethics, and Business (3)
Analysis of the relationship between law and business with emphasis on the ability of, and extent to which, governments regulate business activities. Topics covered include the employer-employee relationship, protection of consumers, antitrust regulation, and securities law. Also discussed are ethical issues confronting management of the modern business enterprises.

414 Introduction to Geographic Information Systems (3)
Prerequisites: MS/IS 481 or equivalent, and consent of instructor. Geographic information systems (GIS) are sophisticated computer-based systems for analysis, capture, presentation and maintenance of geographically referenced data. This course includes extensive use of GIS software and provides a foundation in using GIS for spatial analyses. A range of examples are used to emphasize use of GIS as a tool to support analysis and decision making.

415 Societal, Environmental, and Management Decisions (3)
Prerequisites: BA 408. An examination of the external relationships of a business enterprise with the broad and diverse interests of society. These are government and social forces that sometimes operate counter to the potential dictates of theoretical internal economic policies for an individual organization. The primary objective is to examine the increasingly complex set of interrelationships among business, government, other economic groups, and "the public." A series of major current problems, chosen to raise some of the major issues involved in these interrelationships, and in particular to explore the development of public policy on such problems.

416 International Finance, Investment, and Commercial Relations (3)
Prerequisite: BA 450. The objectives of this course are to: provide a knowledge of the various international markets and securities; gain insight into the complexities of international risks when investing; and, study the use of international hedging vehicles to manage foreign exchange risk.

417 International Business Operations (3)
Prerequisite: BA 416. Functional management within multinational corporations; case studies of operations abroad; and focus on managerial decision making.

418 Governmental Budgeting and Financial Control (3)
(Same as Public Policy Administration 418.) Prerequisite: Accounting 440. A study of municipal and federal financial control and budgeting procedures with emphasis on public policy. The impact of financial control on top management decisions and the effect of budget strategies on the allocations of public funds.

420 Seminar in Business Administration (3)
An intensive study of a specific area of business administration of some specific business or economic phenomenon, or a specific problem or theory. Several different courses may be offered under this course number.

428 Current Topics in Business Administration (1)
Examination of a Business Administration topic of current interest. Instruction by regular graduate faculty, frequently supplemented by outside authorities (practicing managers, government officials, consultants, visiting faculty, etc.). Course may be taken three times for credit.

430 Individual Research (1-10)
Prerequisite: Consent of instructor and graduate director. Special individual research topics under the guidance of a specific professor.

490 Strategy Formulation and Implementation (3)
Prerequisites: FIN 450, MGT 460, MKT 470, MS/IS 483. Graduate program capstone course examining concepts and methods that integrate functional areas of business. The perspective is that of general management charged with directing the total enterprise. Interactions between the environment, organization, strategy, policies and the implementation of plans are explored. Special emphasis is given to globalization of business and ethical perspectives. This course should be taken during the semester prior to graduation. In no case may it be taken sooner than two semesters prior to graduation.

Accounting (400-level)

419 Management Accounting and Auditing in Governmental and Not-for-Profit Entities (3)
Prerequisites: BA 418 and Accounting 441 or consent of instructor. A study of accounting for use in the public sector and in not-for-profit organizations. Cost behavior controllability, and traceability concepts for management planning and control will be investigated, as well as auditing in the public sector.

421 Professional Accounting Research (3)
Prerequisite: BA 341. Discussion of the research tools and methods available to resolve questions concerning accounting standards and practices. Critical analysis of topics of current interest and importance in accounting practice.

422 Seminar in Governmental and Non-Profit Accounting (3)
Prerequisites: BA 418. Consideration of the positions of authoritative groups concerning accounting theory and practice for governmental and nonprofit entities. Evaluation and critical analysis of these positions in view of current accounting literature and research findings.

431 Tax Research (3)
Prerequisite: BA 347 or consent of instructor. A discussion of the research tools and methods available to resolve questions pertaining to the tax laws. Addresses techniques for locating, verifying, and evaluating authority. Students will be expected to complete a number of tax research and writing problems throughout the semester. A basic understanding of the federal income tax law is presumed.

432 Taxation of Estates, Gifts, and Trusts (3)
Prerequisites: BA 347 and Accounting 431, or consent of instructor. Consideration of the transfer tax systems in general; the elements of the gross estate (includible versus nonincludible property), deductions (including the marital deduction) and credits; the gift tax and what it embraces; basic estate planning considerations; and income taxation of grantor and nongrantor trusts.

433 Taxation of Corporations and Shareholders (3)
Prerequisites: BA 347 and Accounting 431, or consent of the instructor. Addresses tax aspects of the formation, operation, and liquidation of a corporation, as well as changes in the corporate structure through division or reorganization. Topics include establishment of the corporate structure, distributions to shareholders, and stock dividends and redemptions.

434 Taxation of Partnerships and Partners (3)
Prerequisites: BA 347 and Accounting 431, or consent of instructor. Addresses tax aspects of the formation, operation, and termination of a partnership. Topics include special allocations and disposition of a partnership interest. Compares partnerships with Subchapter S corporations.

435 Tax Practice and Procedure (3)
Prerequisite: BA 347 or consent of the instructor. Addresses the audit process; practice before the Internal Revenue Service; administrative appeals; the notice of deficiency; waivers and extensions; amended returns and claims for refund; statute of limitations on deficiencies and overpayments; and taxpayer and tax return preparer penalties.

436 Advanced Topics in Taxation (3)
Prerequisites: BA 347 and Accounting 431, or consent of instructor. Addresses various topics selected by the instructor, such as property transactions, compensation plans, charitable contributions, the alternative minimum tax, and tax planning.

439 Seminar in Taxation (3)
Prerequisite: At least nine hours of 400-level tax courses including Accounting 431 or consent of the instructor. Addresses tax policy topics drawing on literature from accounting, economics, and public finance. Other topics of current interest will be selected by the instructor.

440 Financial and Managerial Accounting (3)
This course provides an introduction to accounting, with emphasis on preparation of financial statements for external parties (financial accounting) and accumulation of cost information to aid internal planning and control (managerial accounting). Topics covered include measurement of assets and liabilities, revenues and expenses, the accounting cycle, financial statements, cost terminology, cost behavior, product costing, and relevant costs for decision making. This course provides the necessary background for Accounting 442 (Accounting for Decision Makers).

441 Concepts in Management Accounting (3)
Prerequisites: Math 100 or Econ 301 with a minimum grade of "C" and Accounting 440. The development, interpretation, and uses of accounting reports and supplementary information for management planning, control, and decision making. Emphasizes the application of relevant cost behavior, control, and traceability concepts in the preparation of internal accounting reports, with a secondary emphasis upon product costing techniques as appropriate to financial accounting needs. Topics include break-even analysis, operational budgeting, direct costing, absorption costing, standard costs and variance analysis, business segment analysis, responsibility accounting, distribution cost accounting, and gross profit analysis.

442 Accounting for Decision Makers (3)
Prerequisites: Accounting 440 or the equivalent. This course builds on the foundations covered in Accounting 440, emphasizing the use of accounting information for making operating, investment, and strategic business decisions. Topics covered include interpretation and analysis of financial statements, uses of accounting information by capital market participants, contribution margin analysis, tactical decision making, pricing and product decisions, budget analysis, and performance measurement.

443 International Accounting (3)
Prerequisites: BA 340B. Accounting practices for multinational businesses. Discussion of comparative financial accounting practices, the development of international accounting standards, and managerial accounting practices related to multinational operations.

445 Seminar in Financial Accounting Theory (3)
Prerequisite: Accounting 421. A study of theoretical issues, such as the foundations of accounting standards and the usefulness of accounting information. Analysis of how elements of accounting theory relate to current issues facing the profession.

446 Seminar in Auditing (3)
Prerequisites: BA 348 or permission of instructor. A study of advanced auditing and attestation issues, with an emphasis on operational auditing. Topics include professional ethics, risk analysis, internal control, fraud detection, analytical procedures, determining and assessing operational objectives, and reporting and implementing audit findings.

447 Accounting Systems for Management Planning and Control (3)
Prerequisites: Accounting 441 and MS/IS 481, or permission of instructor. A study of advanced managerial accounting techniques useful in facilitating the planning and control process in modern organizations. Emphasis on the implementation and administration of these techniques, their integration with management information systems, and the organizational role of the corporate accountant.

448 Seminar in Advanced Theory and Contemporary Issues in Accountancy (3)
Prerequisite: Accounting 445 and MS/IS 481. Examines the theory underlying accounting practice. The course includes an in-depth analysis of contemporary developments in financial accounting with a succinct overview of accounting research paradigms.

449 Systems Auditing (3)
Prerequisites: Accounting 440, MS/IS 480, or consent of instructor. Study of techniques involved in the control and audit of computer-based accounting information systems. Emphasis on the review of internal controls at operational and administrative levels and on computer-assisted audit techniques.

Finance (400-level)

450 Financial Management (3)
Prerequisites: ACC 440 (or BA 140), MS/IS 481 (or BA 250), and BA 408 (or Econ 51 and Econ 52). This course provides an in-depth analysis of corporate finance including asset pricing, risk and return, short- and long-term investment decisions, capital structure choices, dividend policy, derivatives, mergers and acquisitions, and a host of other current topics. The material is taught through lectures and problem solving.

451 Advanced Financial Management (3)
Prerequisites: Finance 450 and MS/IS 481. Exposure to recent financial management theory through selected readings. Financial management problems are considered by the use of cases and simulation models. An original research project under the supervision of the instructor is required.

455 Security Analysis (3)
Prerequisites: Finance 450 and MS/IS 481. An in-depth study of techniques used in evaluating various financial assets as investment opportunities. Financial assets studied include common stock, preferred stock, and fixed income securities. Other related topics such as sources of investment information and current market trends are discussed.

456 Capital Markets and Financial Institutions (3)
Prerequisite: Finance 450. The theory of financial intermediation is discussed in the context of banks, savings and loans, public and private insurance companies, and investment banking. In this framework, the relationship with money and capital markets, markets for corporate control, complex financial contracting, and regulatory environment is developed.

457 Introduction to Derivatives (3)
Prerequisite: Finance 450. An in-depth study of advanced risk management techniques utilizing futures, forwards, options, swaps and synthetic securities. A broad study of speculative market characteristics will be reviewed in conjunction with a variety of financial innovations. Portfolio management theories combined with mathematical models will be utilized to demonstrate the effects of hedging techniques and portfolio insurance.

458 Commercial Bank Management (3)
Prerequisite: Finance 450. This course explores the various bank management techniques required to manage a modern commercial bank in a rapidly changing environment. Topics include asset and liability management, capital adequacy, bank holding companies, profitability, and bank market structure and regulation.

459 Seminar in Finance (3)
Prerequisite: BA 450. This course incorporates a wide range of advanced topics in finance including, but not limited to, an evaluation of various financial assets as investment opportunities, trends in capital markets, derivatives and management of financial and non-financial firms.

Management (400-level)

460 Organizational Behavior and Administrative Processes (3)
(Same as Public Policy Administration 460.) The theoretical and research contribution of the behavioral sciences to management and administration are examined and applied to selected organizational situations. Areas to be considered from the standpoint of both individual and organizational performance are communication, motivation, conflict, decision making, goal setting, leadership, organizational design, climate, development, and control. Utilizing a systems perspective, the course attempts to develop in each student an ability to analyze and solve organizational problems.

461 Managing Human Resources (3)
Prerequisite: Management 460. In-depth examination of selected human resource management issues from a contemporary manager=s viewpoint. Topics examined include: personnel planning; employee selection; performance appraisal, training, and development; compensation; legal issues; discipline; and labor relations. The course examines these topics as they relate primarily to operational activities in organizations.

462 Advanced Organizational Behavior and Administrative Processes (3)
Prerequisite: Management 460. An in-depth examination of selected organizational and individual theories affecting behavior and operating performance. Organizational structure and design, formal and informal organization, decision making, communications, and motivation are analyzed for their organizational impact. The course seeks to develop further the ability to analyze and evaluate organizational processes and individual behavior.

463 Organizational Training (3)
Prerequisite: Management 460 or Management 461 or permission of department. An intensive study of training and developmental methods/issues in organizations. Topics include needs analysis, learning theory, training techniques, evaluation, and management development. Other topics include memory, training objectives, and training facilities. Projects and exercises are used to supplement reading and lecture.

464 Compensation and Benefits (3)
Prerequisites: Management 461 and MS/IS 481. An in-depth study of compensation and benefit programs in organizations. Topics include job evaluation, incentive systems, performance appraisal, and employee benefits. Discussion of relevant laws, such as the Equal Pay Act, is also provided.

465 Union-Management Relations and Collective Bargaining (3)
Prerequisites: Management 460 and BA 412. Primary concern is with the setting and the dynamics of contract negotiation and administration. Emphasis is on the development of insight and understanding of the forces affecting the decisions of the parties to a labor contract within the context of the social, political, and economic environment of the organization. A dynamic approach is taken to examine difficulties that arise in attempting to administer a collectively established relationship between employer and employee.

466 Selected Topics in Human Resource Management (3)
Prerequisites: Management 461 and MS/IS 481. This course provides an advanced treatment of selected human resource management topics. Primary focus is on topics such as job analysis, pre-employment screening devices, test validation, and civil rights laws. Other topics, such as performance appraisal, recruitment, promotions, and terminations may be covered. Various class projects may be assigned to supplement readings, lectures, and discussion.

467 Dynamics of Interpersonal Relations (3)
Prerequisite: Management 460 or academic background in general psychology. The self-concept, personality dynamics, and mechanisms of adjustment. Catalysts and barriers to effective communication. Examination of the functional relationship between ego-needs, perceptual distortion, and stereotypical thinking. Roleplaying, the resolution of role-conflict, and objective self-evaluation. The development of cooperation and trust as a prerequisite to effective human relations.

468 International Business Strategies (3)
Prerequisites: BA 408 and ACC 440. This course focuses on those managerial issues which follow from the definition and implementation of corporate strategy for worldwide operations, as distinguished from purely domestic firms or those only marginally involved in international activities. It aims to develop an appreciation for the unique competitive, sociocultural and political environments in which international business takes place and the skills required to deal with these changes.

469 Seminar in Management (3)
Prerequisite: MGT 460. Topics of current interest in management. Possible topics include, human resource management, international management, and entrepreneurship.

Management Science/Information Systems (400-level)

423a Applications of Programming for Business Solutions (3)
Prerequisite: MS/IS 480. This course provides a study of business-oriented programming. A programming language will be introduced and discussed in detail. Emphasis will be on program definition and the use of such programs in business-oriented applications.

423b Managerial Applications of Object-Oriented Technologies (3)
Prerequisite: MS/IS 423a. This course deals with business-oriented programming in an object oriented environment. The emphasis will be on program definition, and tools and development in a client-server environment. The course will involve the study of an object-oriented language in addition to object-oriented methodologies for systems development.

423c Business Programming and File Systems (3)
Prerequisite: MS/IS 423a. The course provides a study of business-oriented programming in a traditional centralized environment . The programming language COBOL will be introduced and studied in detail. Emphasis will be on program definition and the use of file structures in business-oriented applications.

423d Internet Programming for Business (3)
Prerequisites: MI/IS 423a. Focus on web-based applications development for business. It will begin with the fundamentals of web-based computing, including web client and server interaction, the MIME standard, server and client data frame headers, the CGI standard, and error conditions as they pertain to business applications. In addition, JAVA will be introduced to build web-based GUI-interfaces and back-end servers. Finally, business applications issues such as firewalls, proxy servers and data encryption using secure servers will be included.

424a Seminar in Current Management Information System Topics (3)
Prerequisite: MS/IS 488 or MS/IS 485 (may be taken concurrently). Advanced topics of current interest in management information systems. Content to be determined each time the course is offered. May be repeated for credit.

424b Seminar in Management Information Systems (3)
Prerequisite: MS/IS 480. Topics of current interest in management information systems. Topics may include international information systems, electronic commerce, decision support systems, information systems strategy, telecommunications, and information systems management.

424c Business Process Design (3)
Prerequisites: MS/IS 480, and MS/IS 485 (may be taken concurrently). This course presents the concepts of process design for improving customer service and satisfaction. Issues related to characteristics, goals, benefits and costs of enterprise-wide design, and the role of information technology during the design process will be discussed. Further topics may include: computer-based modeling tools for process design, total quality management and quality circles, and organizational learning.

424d Management of Transitional Information Systems (3)
Prerequisites: MS/IS 480 and MS/IS 485 (may be taken concurrently). The course presents concepts of managing global information technology. Issues covered include: global information technology, systems development, electronic data interchange, cross-border data flows, and national and international information structures. Further topics may include information technology enabled economic development, global outsourcing of information systems services, and social, organizational and ethical implications.

425 Advanced MIS Applications (3-6)
Prerequisite: MS/IS 488 or permission of instructor. The course requires a project through which the student applies MIS concepts to a real problem; a written, professional quality report will be required. The course material must build upon, not duplicate, material in the MIS curriculum. The course may be repeated for credit with the permission of the MS/IS area. Consent of the MS/IS area for the topic and number of hours is required.

426 Management of Client/Server Computing (3)
Prerequisite: MSIS 496. This course explores a wide range of topics necessary for the management of client/server computing technology. Students will explore the business advantage and opportunities that client/server systems can provide an organization. In addition, the course will introduce topics of importance to implementing technology in an organization. Finally, the course will provide a framework for understanding the diverse technical components of client/server technology, technical standards and their implications for inter-operability of components.

428 Operations Research-Deterministic Models (3)
Prerequisites: Math 345 or equivalent. (Same as Math 435). A study of deterministic methods and models in operations research. This course provides an introduction to operations research and focuses on model building, solution and interpretation of results. Topics include formulation, solution, duality and sensitivity analysis in linear programming, integer programming, network flow models, nonlinear optimization, and dynamic programming.

429 Operations Research-Stochastic Models (3)
Prerequisites: Stat 320 or equivalent. (Same as Math 436). A study of stochastic methods and models in operations research. Provides an introduction to probabilistic models for decision making under uncertainty. Topics include stochastic processes, queuing theory and models, probabilistic inventory theory and models, Markovian decision problems, simulation and reliability.

430 Quality Management (3)
Prerequisite: MSIS 481 or Stat 320 or consent of instructor. (Same as Math 437). An applied course on total quality management. Quality improvement approaches are presented and the managerial implications and responsibilities in implementing these approached 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, Baldridge 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.

480 Management Information Systems (3)
Prerequisite: Econ 301. (Same as Public Policy Administration 480.) An overview of management information systems is presented, including IS managerial concepts and hands-on exposure to technology. Concepts include alignment of information systems strategy with organizational strategy, MIS components and organizational structures, issues in the design and implementation of systems, and understanding the role of information systems in organizations. Students are exposed to several technologies, including the information superhighway, application software packages, and a programming language.

481 Statistical Analysis for Management Decisions (3)
Prerequisites: MS/IS 480 (may be taken concurrently) and Econ 301 with a minimum grade of ==C.== The role of statistical evidence in the formation of inference and in the selection of strategies in solving business problems is developed. Probability and probability distributions are studied as a basis of statistical inference. An introduction to multivariate analysis is provided, which includes analysis of variance and regression methods.

482 Management Science Methods (3)
Prerequisite: MS/IS 483. This course provides a working knowledge of management science techniques. It emphasizes analytical approaches to solving business problems, construction of mathematical models, and manipulation of model variables for managerial decision making. Topics include mathematical programming, including integer and network models, heuristics, and simulation models.

483 Production and Operations Management (3)
Prerequisites: MS/IS 480 and 481. This course discusses issues related to the creation and delivery of goods and services. Topics include the design of production processes, the layout and location of facilities, forecasting, scheduling, inventory control, queuing, materials planning, and quality control. Analytical techniques such as linear programming are used in studying these problems.

485 Management Information Systems: Theory and Practice (3)
Prerequisites: MS/IS 480. The course presents and analyzes critically current MIS topics in the context of business organizations. Issues may include: organizational and behavioral concerns, the fit between information systems and organizations, information systems development and implementation, software evaluation and procurement, systems performance, and information systems planning and control.

486 Advanced Statistical Methods for Management Decisions (3)
Prerequisite: MS/IS 481. A study of statistical methods applicable to specialized areas of statistical analysis. Topics include Markov processes, distribution-free tests, sampling theory and methods, experimental design, time series analysis, and spectral analysis.

487 Advanced Operations Research Applications (3)
Prerequisite: Consent of instructor. Application of operations research techniques to business problems. After a brief review of these techniques, followed by an examination of typical applications reported in the literature, the major portion of the term is spent in analyzing and solving an actual business operations research problem. A team approach is used, with groups of two or three students responsible for finding and solving an operations research problem in a local company. Primary emphasis is placed on the use of operations research techniques to solve management problems.

488 Information Systems Analysis (3)
Prerequisite: MS/IS 423a. The theory and practice of structured analysis are presented. Topics may include: traditional vs. structured analysis methods, requirements analysis, user/analyst interaction, investigation of existing systems, human/ machine interfaces, CASE tools, and workbenches.

489 Database Management Systems (3)
Prerequisite: MS/IS 423a. The course introduces the concepts of database management systems for business applications. Issues in database architecture, design, administration, and implementation are covered. Projects are assigned on a mainframe DBMS and a microcomputer-based DBMS to illustrate the concepts and applications.

491 Electronic Commerce (3)
Prerequisite: MS/IS 480. Electronic commerce is a modern business methodology that addresses the needs of organizations, merchants, and consumers to cut costs while improving the quality of goods and services and increasing the speed of service delivery. In this course, students will examine critical information technologies that provide a basis for electronic commerce and their application in a variety of sectors and industries. It will begin with coverage of the tools, skills and business concepts that surround the emergence of electronic commerce and the consequences of applying these information technologies to difference commercial processes from both an operational and strategic perspective. We will also explore several of the problems surrounding electronic commerce such as security, privacy, content selection and rating, intellectual property rights, authentication, encryption, acceptable use policies, and legal liabilities.

492 Information Systems Strategy (3)
Prerequisite: MS/IS 485. This course presents the management of computer-based information resources in the context of business organizations. Issues may include: management strategies and policies for improving organizational productivity, measurement, evaluation and acquisition of management information services, office automation, end-user computing, computer use in international environments, social organizational perspectives and ethical implications. The course will be taught using cases.

493 Simulation for Managerial Decision Making (3)
Prerequisites: MS/IS 481 and (482 or 483). Introduction to simulation as a managerial decision-making aid. Application of simulation to a number of management science-oriented problems. The course introduces and requires use of a simulation language.

494 Advanced Operations Research Topics (3)
Prerequisite: Consent of instructor. Advanced topics from such areas as mathematical programming, stochastic processes, decision theory, or game theory are studied in depth.

494b Seminar in Logistics and Operations Management (3)
Prerequisite: MSIS 483. Topics of current interest in logistics and operations management. Topics may include just-in-time and lean production, quality management, manufacturing and service systems, transportation and logistics, quantitative management tools, etc.

495 Information Systems Design (3)
Prerequisites: MS/IS 488 and MS/IS 489. This course builds upon the analysis techniques presented in MS/IS 488. It requires the student, usually working in a group, to design and implement a system in a real-world environment. Advanced design concepts are presented to support the students in their project work.

496 Telecommunications: Design and Management (3)
Prerequisite: MS/IS 480 (may be taken concurrently). The topic of telecommunications is addressed from both a technical and managerial viewpoint. In particular, the course will address issues such as communications components and services, local area network architecture, managerial implementations, organizational issues, and cost/benefit analyses.

497 Decision Support Systems (3)
Prerequisite: MSIS 481. Applications of decision support systems in a business environment are studied. Issues pertaining to maintenance of data, construction of models and provision of supporting technology are explored. Students will analyze, design and implement a managerial decision support system using current development tools.

498 Fourth Generation Languages and End User Computing (3)
Prerequisite: MS/IS 423a. The course presents fourth generation languages and covers managerial issues of end-user computing. A specific fourth generation language will be introduced and programming applications will be assigned. In addition, the course will explore the problems of providing and managing micro-to-mainframe links, end-user software packages, and security/confidentiality issues.

499 Management Information Systems Thesis Research (1-6)
Credit to be awarded only upon successful defense of thesis.

Marketing (400-level)

470 Contemporary Marketing Concepts (3)
Prerequisite: BA 408. Designed for students with no prior course work in the field of marketing. A wide spectrum of marketing institutions and activities is covered. The impact of marketing on the total firm, the economy, and society in general is assessed. The course is intended to develop and organize the fundamental marketing concepts necessary to an analytical study of consumer behavior, the economic environment, and four managerial aspects of marketing. The acquisition and utilization of marketing research data for problem solving is stressed. Relation and integration of basic marketing knowledge to the successful development of sound marketing policy, planning, and strategy is developed.

471 Marketing Planning and Strategy (3)
Prerequisite: Marketing 470. Emphasizes the development of a total marketing program through an analytical study of the marketing-mix, the diagnosis of the business situation, along with the influence of exogenous variables and the development of an effective campus marketing strategy. Stresses importance of an integrated marketing plan and utilizes modern decision-making tools. Supplementary readings, journal articles, and current periodicals are used to place the theoretical framework of the course into the contemporary environment of the market place.

474 Seminar in Marketing (3)
Prerequisite: Marketing 470. This course addresses advanced problems in contemporary marketing. Topics may include, but are not limited to, marketing strategy, marketing communications and advertising, product management, consumer behavior, channels of distribution, international marketing, and marketing research.

475 Consumer Motivation and Behavior (3)
Prerequisite: Marketing 470. An analysis of the socio-psychological foundations of consumer behavior including personality differences, needs and wants, status symbols, social change and mobility, and fads and fashions. Consumer spending and saving habits, product preferences, leisure-time patterns, shopping behavior, and motivation research also are examined for their impact on advertising, selling, and marketing management.

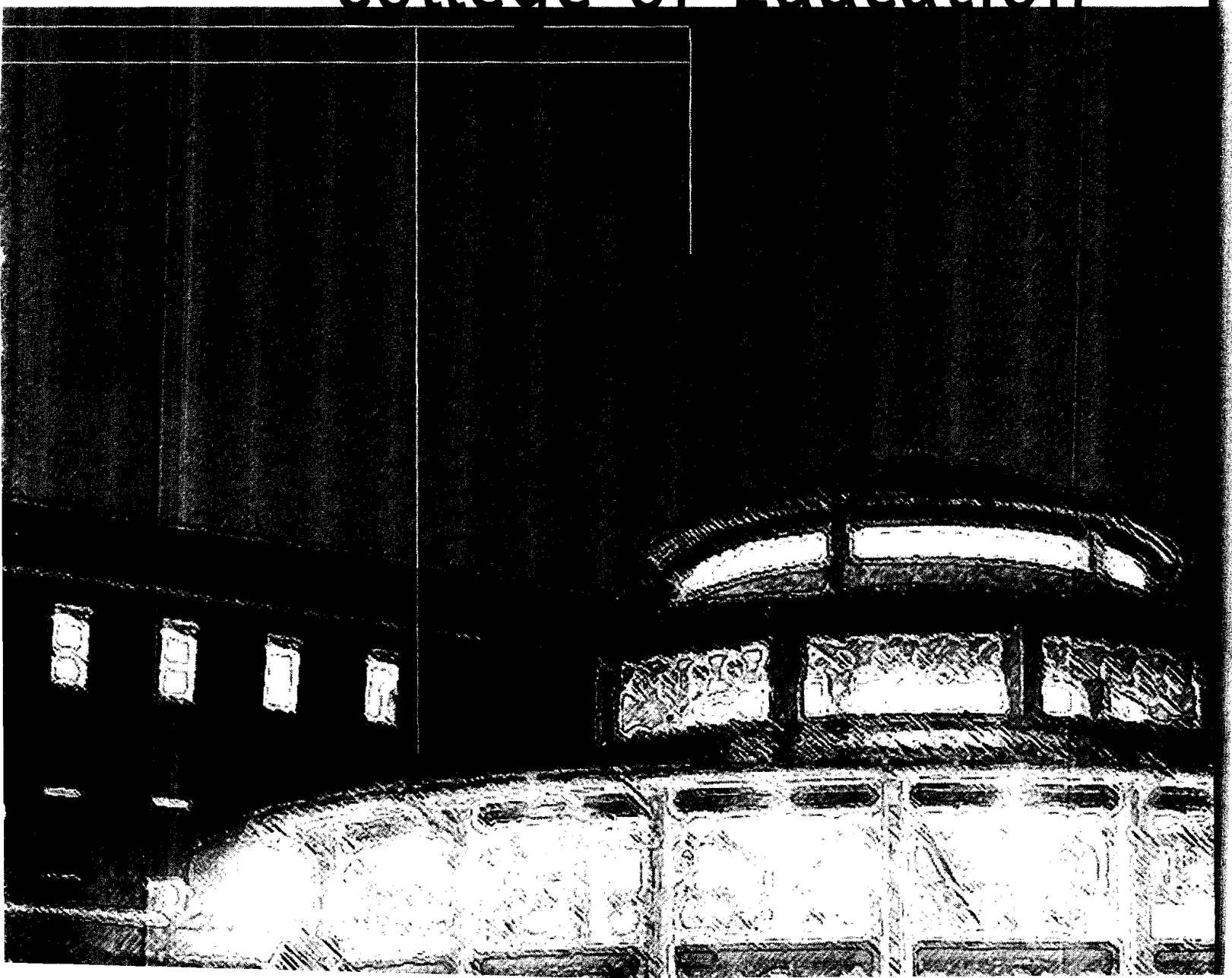
476 Marketing Communications (3)
Prerequisite: Marketing 470. Deals with managerial decision making by placing particular emphasis on assimilating and integrating all forms of marketing communication in the development of promotional policies, plans, and procedures. Course approach is analytical rather than descriptive in investigating the areas of advertising, public relations, sales management, packaging, and other forms of demand stimulation.

477 Product Planning and Pricing (3)
Prerequisite: Marketing 470. A study of product management focusing on new product development. The steps of the new product development process are covered in detail. Current issues in new product research are discussed. Projects are emphasized and involve the application of several of the key techniques to the student=s own new product ideas. Selected pricing topics are also covered, such as measuring consumer price sensitivity.

478 Marketing and Business Research (3)
Prerequisites: Marketing 470 and MS/IS 481. A broad approach to marketing research as a model for acquiring, retrieving, and analyzing decision-making information. Includes market measurement, evaluation of sales, and cost effectiveness, sales forecasting, and primary marketing research studies aimed at solving specific problems. Emphasis is placed also on building a theoretical and analytical framework to provide flexibility in the design of marketing experiments and in judging recent research innovations.

479 Marketing Channel Strategy (3)
Prerequisites: MKT 470 and MS/IS 483. A study of the marketing institutions involved in the distribution of goods and services, industrial and consumer markets, as well as the establishment and integration of marketing channels. The planning and analysis of the macrodistribution and microdistribution systems which contribute to creation of optimal time and place utility. Some attention is paid to quantitative applications to marketing situations including simulation and logistics.

College of Education



General Information

Accreditation

The University of Missouri-St. Louis, through the College of Education, is accredited by the National Council for Accreditation of Teacher Education for the preparation of elementary and secondary school teachers and school service personnel.

Course Designations in the College of Education
The following abbreviations are used to indicate instructional areas in the course listings and descriptions in the College of Education.

Adult Education Courses **(Adu Ed)**
Counselor Education Courses **(Cns Ed)**
Early Childhood Education Courses **(Ech Ed)**
Educational Administration Courses **(Ed Adm)**
Educational Foundations Courses **(Ed Fnd)**
Educational Psychology Courses **(Ed Psy)**
Educational Research and Evaluation Methods Courses **(Ed Rem)**
Educational Technology Courses **(Ed Tec)**
Elementary Education Courses **(Ele Ed)**
Higher Education Courses **(HIRED)**
Physical Education Courses **(Phy Ed)**
School-Wide Education Courses **(Educ)**
Secondary Education Courses **(Sec Ed)**
Special Education Courses **(Spc Ed)**
Teacher Education Courses **(Tch Ed)**

Teacher Education

Degrees and Areas of Concentration
The College of Education offers work leading to the B.S. in education with specialization in any of the following: early childhood education, elementary education, special education, physical education, and secondary education. Courses are also available for those seeking certification for middle school. In cooperation with other schools and colleges of the university, the College of Education provides a program for students pursuing other degrees but planning on a teaching career in secondary education.

General Education Requirements
Students in the College of Education must meet university and departmental general education requirements specified for their degrees.

Academic Residence
Students must be in residence for 30 of the last 30 semester hours of credit. Courses graded on a satisfactory/ unsatisfactory basis are not accepted within these last 30 semester credit hours. This residency requirement applies to students seeking a degree or teacher certification.

Education Majors
Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C (2.0). A C- grade is not acceptable.

Admission to the College of Education
Any students who designate education degree programs as their intended degree paths will have Education as their assigned academic unit. Students admitted to the College of Education must also be admitted to the teacher education program.

Application and Admission to the Teacher Education Program All students (pre- and post-degree) who wish to become teachers must be admitted to the teacher education program regardless of the college in which they are enrolled. The admission program requires student action at the following levels.

Applications to the teacher education program are processed through the office of teacher education. Eligibility is based upon fulfillment of the following requirements:

- Submitted qualifying scores on C-BASE in areas of English, writing, mathematics, science and social studies, as mandated by the Missouri Excellence in Education Act of 1985. Consult the office of teacher education, College of Education, for test descriptions, cost, required scores, dates of administration, retest policies, etc. Acceptable C-BASE scores are required in addition to acceptable ACT or SAT scores. (C-BASE not applicable to students with a bachelor=s degree. Graduates of the general studies program in the UM-St. Louis Evening College, however, must take the C-BASE).
- Scored either 20 on the ACT Composite (18, when taken prior to 11-1-89) or 800 on the SAT (verbal plus math)*.
- Completed 60 hours of college or university courses (at UM-St. Louis or another accredited school).
- Accumulated a grade point average of 2.5 or better.
- Completed Educ 101, Introduction to Classroom Teaching, or the equivalent, with a grade of C or better. (Not applicable for secondary education or early childhood education majors).
- Completed Ed Fnd 111, The School in Contemporary Society, or the equivalent, with a grade of C or better.
- Agreed to adhere to ethical codes which have particular pertinence during clinical experiences. (These codes are available in the office of teacher education, College of Education.)
- Agreed to subscribe to a standard of preprofessional behavior which will enhance greater self-awareness if social or emotional difficulties arise which may affect future teacher effectiveness. (This standard is available in the office of teacher education.)

- Submitted a notarized Affidavit of Moral Character and a criminal record check and child abuse/neglect screening.

*** Policy for Students Scoring Below ACT and SAT Qualifying Requirements** Students who do not achieve satisfactory scores of 20 on the ACT or 800 on the SAT may retake the test(s) until the requirement is met. Students who initially score below the required ACT score of 20 or SAT score of 800 may petition the dean of Education to attest that basic educational competencies are met if their grade point average from 60 hours of college or university courses is at least 2.5 and they have performed satisfactorily on a norm-referenced achievement test other than ACT or SAT. Students must produce evidence that the ACT or SAT was initially completed and a score recorded.

Students with a documented disabling condition, preventing valid test administration of the ACT or SAT, may be evaluated for basic educational competencies through appropriate testing instruments and/or procedures designated and approved by the dean of the College of Education.

Students who do not meet the initial ACT or SAT qualifying scores may seek assistance in upgrading basic competencies through contact with one or more of the following University of Missouri-St. Louis services: Center for Academic Development; Women's Center; Counseling Service; Veteran Affairs Office; Video Instructional Program; Horizons (Peer Counseling Center).

In addition, assistance may be available through correspondence courses, University of Missouri-Columbia. Copies of this policy are available in the office of teacher education.

Application to the Student Teaching Program The application for student teaching is a two-part process which begins two semesters before the semester in which the student plans to do student teaching.
*Check student teaching bulletin board in Marillac Hall for exact date.

Deadlines	**Pre-application**	**Formal Application**
Fall student Teaching	1st week in December*	Beginning of winter semester before student teaching
Winter student Teaching	1st week in August*	Beginning of fall semester before student teaching

*Check student teaching bulletin board in Mari lac Hall for exact date.

Step I Preapplication: Students must submit both of the following items to the office of teacher education, Room 155, Marillac Hall:

- An autobiography and philosophy of education written according to guidelines on reserve (number 456) in the Ward E. Barnes Library.
- Proof of formal acceptance to the teacher education program (approved 60 hour form), required of both pre- and post degree students. Students will then sign an application list and receive a ticket to attend the formal application meetings which will be held at the beginning of the semester.

Step II Formal Application: Students:

- Must attend one of three formal application meetings offered at the beginning of each semester to receive application materials. Dates and times will be posted on the student teaching bulletin board in Marillac Hall.
- Will be admitted to the meetings by ticket only; autobiographies and philosophies will be returned at this time. (See Preapplication above).
- Will complete and return applications within two weeks after the meetings to the office of teacher education, 155 Marillac Hall. Applications will not be accepted after the deadline.

Upon receipt, formal applications for both pre- and post degree students are checked to ensure they have met the following requirements:

- Full admission to the teacher education program for both pre- and post degree students.
- Completion of 90 hours of approved course work at the time of application.
- A cumulative grade point average of 2.5 or above by the semester before the one in which students plan to do their student teaching. The 2.5 cumulative grade point average must be maintained in order to graduate with a B.S. in education degree and/or be certified to teach in the state of Missouri.
- Grade point average of 2.5 in the teaching field (secondary education students only).
- Completion of English 210, Advanced Expository Writing, or equivalent, with a grade of C- or better.
- Completion of Comm 40, or equivalent, Introduction to Public Speaking, with a grade of C- or better.
- Completion of general education requirements and near completion of course requirements in the teaching major.
- A grade of C or better in all professional education courses so designated. Lists of these courses are available in the office of teacher education and from advisers. A grade of C- is not acceptable.
- Satisfactory recommendations by students teaching

area representatives in the teacher education program.
- Completion at UM-St. Louis of no fewer than 12 hours of approved course work.
- Completion of prerequisite courses in professional education and psychology.
- Completion of TB screening and police and child abuse checks.
- Completion of acceptable portfolio.

The student teaching experience in the physical education, and special education certification programs provides assignments in two different school settings and appropriately increases the amount of time devoted to it. Students will be expected to do student teaching on a full-day basis for an entire semester. The student teaching experience in early childhood, elementary, and middle school are completed at one site.

The student teaching experience must be done in residence. Secondary student teaching in science education, mathematics education, and foreign language education is usually offered only during the winter semester. Secondary education majors student teach for an entire semester, full days.

While enrolled in student teaching, students may not carry more than 15 credit hours. When students are admitted to student teaching, the office of teacher education arranges assignments with appropriate school district officials. Students should not contact school officials or teachers about possible student teaching assignments. Failure to observe this request is a basis for removal from student teaching.

Students who withdraw from student teaching at any time after being admitted for a given semester must formally reapply during the designated application period for the subsequent semester in which they plan to do their student teaching. This must be done in person in the office of teacher education. Students who withdraw in this way three times must wait a minimum of one calendar year after the third such withdrawal before they may reapply for student teaching. At the time of reapplication they must present evidence that the circumstances which prevented them from continuing in student teaching during their last admission no longer pertain. In all instances of reapplication, students must meet the requirements in effect for the semester during which they plan to do their student teaching.

Student teachers who fail the course or are allowed to withdraw because they are failing to meet minimum requirements must wait at least one full semester and fulfill the remedial requirements established at the time of the failure or withdrawal before they may reapply for admission to student teaching. The remedial requirements will be determined by the office of teacher education after consultation with the cooperating teachers, university supervisors, and student teachers involved. The students must provide appropriate evidence that the remedial requirements have been met at the time they reapply for admission to student teaching. It is understood that meeting the remedial requirements does not guarantee success in the subsequent student teaching experience.

For further information regarding certification, contact the undergraduate teaching education office, 155 Marillac Hall.

Application for Degree and/or Certificate

Bachelor of Science in Education
Candidates for the B.S.Ed. degree must complete degree and certificate application forms in the office of teacher education when they apply for admission to student teaching or during the semester before the one in which they expect to finish degree requirements.

Evening College students should complete degree application forms in the Evening College office and certification application forms in the office of teacher education.

Bachelor of Arts
Students seeking the B.A. degree with teacher certification must complete a state certification form with the office of teacher education.

Certification
In cooperation with the Missouri State Department of Elementary and Secondary Education, the College of Education is responsible for recommending teaching certificates for students completing B.S. in education degree requirements, recommending for certification students completing degrees in other UM-St. Louis colleges and schools, as well as all certification requirements, and for advising and recommending for certification those post degree students who meet requirements.

All individuals must pass the appropriate Praxis/National Teacher's Examination to meet graduation and/or certification requirements. This exam should be taken during the semester immediately prior to that of student teaching.

By completion of specified undergraduate courses at the University of Missouri-St. Louis, students may obtain certification in the following fields: elementary education; early childhood education; middle school/junior high; music education; physical education; special education: behavioral disorders (BD), educable mentally handicapped (EMH), and learning disabilities (LD); as well as the secondary education areas of biology, business, chemistry, English, foreign languages (French, German, Spanish), mathematics, physics, social studies, and speech/theater. Graduate programs leading to certification in counseling; reading; school administration

(elementary and secondary principal, school superintendent); and special education: behavioral disorders (BD), learning disabilities (LD), educable mentally handicapped (EMH), and early childhood special education (ECSE) are also available; see Graduate Studies sections for each division of the College of Education.

Graduate Studies in Education

Degrees and Areas of Emphasis
M.Ed. programs are offered in counseling, educational administration, elementary education, secondary education, and special education. Within the counseling program are the emphasis areas of elementary, secondary, and community counseling. Within the educational administration program are the emphasis areas of adult and community education, elementary administration, and secondary administration. Within the elementary education program is the emphasis area of reading. Within the secondary education program are the emphasis areas of adult education, curriculum and instruction, and reading. Within the special education program are the emphasis areas of behavioral disorders, learning disabilities, mental retardation, and early childhood/special education. Courses are available for areas of specialization in early childhood education, physical education, educational technology, severe handicaps and higher education.

Advanced certification studies (60-hour concentrations) are offered in elementary and secondary educational administration.

Programs leading to the Ed.D. degree are offered in two broad interdisciplinary emphasis areas: learning-instructional processes and behavioral-developmental processes. Programs leading to the Ph.D. degree are offered in the areas of counseling, educational psychology, teaching-learning processes, and metropolitan leadership and policy studies.

Master of Education Degree

Admission and General Requirements
The College of Education follows Graduate School policies relating to admissions, academic standards, residency, transfer credit, time limitations, and thesis options (see Graduate Study in this *Bulletin*). In addition to meeting the general requirements of the Graduate School, applicants for school or community counseling must complete a separate application (see graduate studies in the Counseling division in this *Bulletin*). The minimum number of hours required for the M.Ed. degree is 32 except that the elementary, secondary, and community counseling emphases require 48 hours. The school has adopted a flexible policy on exit requirements, which are determined divisionally.

Advisement and Program Planning
After acceptance, each student completes an adviser form, sent by the College of Education's office of graduate studies, 123 SCCB. A faculty adviser is then appointed who counsels the student in registration and program planning. A program for master's degree form must be submitted for approval during the first half of the student's program. This form includes all course work in the program and the exit requirement. Once approved, the degree program may be changed only by petition.

Students working toward teacher and/or school service personnel certification as graduate students should complete state certification forms in the office of teacher education, 155 Marillac Hall, one year before those requirements will be completed.

Doctor of Education Degree

The Ed.D. degree is designed primarily for the field practitioner, and is, therefore, a comparatively broadbased interdisciplinary degree. The two emphasis areas, learning instructional processes and behavioral-developmental processes, embrace two general categories of professional activities.

Learning-instructional processes place primary emphasis on the teaching-learning relationship, as well as on general planning and development of organizational programs to carry on this relationship successfully. Traditional programs that tend to fall under this heading are school administration, elementary and secondary teaching, supervision/curriculum, and reading instruction.

Behavioral-developmental processes place primary emphasis on the nature of individuals. Doctoral studies focus on such elements as learners' behavioral and developmental characteristics, typical and atypical development within varied environments, motivation, strategies of behavioral change, and counseling processes. Traditional programs that tend to fall under this heading are counseling, special education, educational psychology, and measurement. Students seeking the Ed.D. degree are expected to meet the doctoral degree requirements and procedures adopted by the Graduate School. (See Doctoral Degree Requirements for details.)

Admission and General Requirements
In addition to meeting the application and admissions requirements of the Graduate School, students must submit three letters of recommendation (two letters must be from individuals with an earned doctorate), along with a professional resume. Because enrollment is competitive, admission standards are comparatively high. Successful candidates must exhibit significantly above-average academic records and GRE scores. In exceptional cases, other criteria may outweigh these customary indicators of probable academic success.

At least two years of teaching or other school service experiences are required for admission. Exceptions may be made by substituting a supervised internship during the first year of the program.

Admission Application
In order to ensure time for review and decision, complete applications and accompanying materials must reach the office of admissions by September 15 for the winter semester and February 15 for the summer or fall semester. In addition, applicants are urged to request transcripts and letters of recommendation two weeks before submitting their papers. Consideration of applications cannot be undertaken until all materials are available.

Degree Requirements

1. Core Studies
General foundations, 12 hours from:
philosophical, historical, psychological, sociological, anthropological, and comparative foundations of education, as well as curriculum, instruction, and supervision.

Research Methods, 12 hours:
6 hours from:
Quantitative research methodology, Ed Rem 431 and above.

6 hours from:
Qualitative research methodology

Common doctoral seminars, 6 hours

2. Role Specialization, 48 hours:
Emphasis area doctoral seminars (6-12)
Emphasis area electives (15-27)
Related area (12-18)
Internship (3-9)

3. Dissertation, 12 hours

Total: minimum 90 hours, postbaccalaureate

Doctor of Philosophy Degree

The Ph.D. degree in education, offered in cooperation with the School of Education at the University of Missouri-Kansas City and the College of Education at the University of Missouri-Columbia, is designed for educators who desire directed research experience promoting scholarly inquiry in education. Four emphases are available:

Counseling
Educational psychology
Teaching-learning processes
Educational leadership and policy studies

Admission and General Requirements
In addition to meeting the application and admissions requirements of the Graduate School, students must submit:

- Three letters of recommendation (at least two from individuals with earned doctorates).
- An original essay.
- A professional resume.
- Evidence of above-average academic records.
- GRE scores (a composite [verbal, quantitative, and analytical subtests] score of 1500 or better desired)

A favorable vote of an admission interview committee, composed of faculty in the emphasis area, is required. Admission is competitive.

Admission application

To ensure time for review and decision, complete applications and accompanying materials must reach the office of admission by September 15 for the winter semester and February 15 for the summer or fall semesters. In addition, applicants are urged to request transcripts and letters of recommendation at least two weeks before submitting their papers. Consideration of applications cannot be undertaken until all materials are available.

Degree Requirements

General Foundations, 9-12 hours:
Philosophical, historical, psychological, sociological, anthropological, and comparative foundations of education, as well as curriculum, instruction, and supervision.

Research Methods, 15-18 hours:
Educational Research and Evaluation Methods (Ed Rem) 431: Educational Research Methods and Design, and at least 12 hours from Ed Rem courses numbered above 431: 6 hours in quantitative methods and 6 hours in qualitative methods.

Foreign Language Proficiency or Other Research Tools, equivalent to 6 hours

Emphasis Area (Primary Discipline) courses, 21-27 hours, with at least 16 in residence, in one of the following four areas:

1. Teaching-Learning Processes
Minimum 15 hours in cognate area
Minimum 3 hours in curriculum or instruction
Minimum 3 hours in educational psychology

2. Educational Leadership and Policy Studies
Minimum 21 hours in educational leadership, either in K-12, higher education, work, adult, or community

education settings, selected in consultation with the faculty advisor and advisory committee.

3. Educational Psychology
Minimum of 21 hours in educational psychology. Program may include courses in research and evaluation methods, school psychology, developmental psychology, cognition and learning, character education, and socio-cultural theory Courses in the primary discipline will be selected in consultation with the faculty adviser and advisory committee.

4) Counseling
Cns Ed, 414, Individual Inventory
Cns Ed 420, Group Procedures in Counseling
Cns Ed 442, Career Information and Development
Cns Ed 495, Foundations for Multicultural Counseling
Cns Ed 485, Community Counseling Practicum (or Cns Ed Cns Ed 482, School Counseling Practicum or Cns Ed 493, Counseling Practicum I)
Cns Ed 486, Community Counseling Field Experience I (or Cns Ed 483, School Counseling Field Experience I or Cns Ed 494, Counseling Practicum II)
Cns Ed 487, Community Counseling Field Experience II (or Cns Ed 484, School Counseling Field Experience II or Cns Ed 490, Internship)
Cns Ed 426, Advanced Theories of Counseling and Family Therapy
Cns Ed 443 Advanced Career Development
Cns Ed 455, Counselor Education and Supervision
Cns Ed 475, Doctoral Practicum (3 hours)
Cns Ed 498, Advanced Multicultural Counseling
3 semester hours of electives in Cns Ed approved by advisory committee.

Additionally, all students should complete Cns Ed 476, Doctoral Internship I and Cns Ed 477, Doctoral Internship II, as the research internship; and a secondary discipline in Ed Psy consisting of at least Ed Psy 412, Psychology of Learning Processes, Ed Psy 413, Personality Development and Adjustment, and Ed Rem 422, Individual Assessment of Cognitive Abilities.
3 semester hours of electives from educational psychology, research, or evaluation.

Related (Secondary Discipline) Courses, 12-15 hours, in education or another department.

Required Exit course, 3 hours
Education 414 Common Doctoral Seminar: Research: Implementing Change in Educational Systems

Research Internship, 6-9 hours

Dissertation, 12 hours

Total: Minimum 90 hours, postbaccalaureate

Support Services

The College of Education maintains a number of offices and centers to directly assist students, faculty, and people in the metropolitan area and to support its instructional, research, and service activities.

Undergraduate Teacher Education Services -155 MH
This office supplies advisement services for undergraduate teacher education and certification students. It coordinates the clinical experiences of the College of Education and directs the student teaching program.

Office of Graduate Studies in Education - 123 SCCB
Information about admission to, and requirements of, graduate programs in education may be obtained in this office. The office also assists students with advisement, registration, and related topics, and maintains student records.

Teacher Education Resource Center -G01
The center is designed as an instructional media laboratory. The Instructional Technology Center located in Lucas Hall also has an office in the center.

Human Services Unit -B23A ED LIB
The human services unit is a training facility for graduate students supervised by faculty in the Division of Counseling. Career counseling and assistance with vocational, adult, or adolescent developmental concerns are avail able to individuals in the community.

Reading Clinic -B9 ED LIB
The reading clinic provides a laboratory setting for graduate level elementary and secondary teachers who are seeking certification as reading specialists. The clinic has been providing services to the surrounding community in diagnosing and treating severe reading problems in children and adults since 1966. The clinic also serves as a demonstration and materials center for preservice and inservice teacher education, as well as a clinical research facility for the faculty.

University Child Development Center -130 SCB
The center provides university students with observation, participation, research, and similar educational and clinical opportunities; it also offers quality child care programs for children of student, faculty, staff, and community families.

Technology and Learning Center - 100 Marillac
The center provides education students and faculty a model environment for managing new methods of teaching through the newest technologies; a place to research and develop technology-enhanced teaching methods to engage K-12 students; and programs that connect school classrooms to the workplace.

College-wide Courses

Education (Educ)

65 The University (3)
A College of Education interdisciplinary course on the principles, development, and organized structure of the university. Special emphasis will be placed on the role of the university in modern society and upon forces affecting the direction of the university and its potential for change. Methods include outside speakers, discussion groups, and laboratory research on UM-St. Louis.

101 Introduction to Classroom Teaching (3)
An introduction to the study of teachers' behaviors and learners' responses in classroom settings. Students will be assigned to school sites for specified observations/ analyses and limited participation. Students will have the opportunity to evaluate the teaching profession as an appropriate career choice. The course will consist of approximately one-third lecture/seminar and two-thirds clinical/field experiences.

204 Special Topics in Education (1-3)
Prerequisites: Completion of 75 hours and consent of instructor. Examination of a special area or topic within the field of education. Topics to be considered will be announced prior to registration and may vary. For elective credit only. This course may be repeated for different topics. Not to exceed a total of six hours credit.

290 Internship I (6)
Prerequisites: Senior standing and consent of instructor. Field experience in educational setting under university supervision. Includes planning, research, evaluation, and other professional activities in the student's area of concentration.

291 Internship II (6)
Prerequisite: Completion of or concurrent enrollment in EDUC 290. Continuation of EDUC 290.

297 Independent Study (1-3)
Prerequisites: Completion of 75 hours and consent of instructor. Independent study through readings, research, reports, and conferences designed to provide depth in areas of study previously introduced in education courses. For elective credit only. May be repeated. Not to exceed a total of three hours credit.

301 Introduction to Microcomputers in Education (3)
A course designed to introduce individuals to the microcomputer as an instructional medium. The course will emphasize (1) the history, role, and use of microcomputers in education; (2) learning the elements of programming for the microcomputer; and (3) beginning program construction and debugging operations.

306 Graduate Workshop (1-10)
Prerequisite: Consent of instructor

308 Graduate Institute (1-10)
Prerequisite: Consent of instructor.

317 Topics in the Teaching of Writing (1-3)
(Same as English 317) Prerequisite: English 210 or equivalent. Special topics in the practice of and pedagogy of writing designed for in-service teachers. Topics may include writing at specific grade levels, writing/reading workshops, writing in urban settings, writing across the curriculum, action research, new technology, classroom and district-level assessment. May be repeated once for credit if topics differ. Counts toward Certificate in writing.

393 Practicum in Individualized Instruction (3-6)
Prerequisites: Completion of the course(s) to which assigned for instruction and consent of instructor. Supervised instruction in individualized programs. Seminar accompanies instructional experience. May be repeated.

408 Graduate Seminar (1-10)
Prerequisite: Consent of instructor. Intensive study of selected issues in education.

414 Common Doctoral Seminar(s) (3)
Prerequisite: Admission to the doctoral program. Two Educ 414 seminars are required for all doctoral students, for a total of six hours of Educ 414 seminar credit. One, "Elements of Educational Leadership," is to be taken early in the program. The other, "Research: Implementing Change in Educational Systems," is to be taken following completion of the research courses identified in the student's approved program.

415 Emphasis Area Seminar(s) (3)
Prerequisite: Admission to the doctoral program. All doctoral students are required to take at least two emphasis area seminars consistent with their programs. Students may take additional emphasis area seminars. Obtain a list of emphasis area seminars from the office of graduate studies in education.

422 Policy Analysis of Higher Education (3)
Prerequisites: Graduate admission. Introduces students to analysis of higher education public policy. Includes state and local policy analysis and examination of legislative history of major federal higher education laws.

475 Microcomputer Applications in Music Education (3)
(Same as Music 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 Music 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 Application in Music (3)
(Same as Music 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.

480 Research Internship I (3)
Prerequisite: Nine hours of research methods or statistics and consent of instructor. Supervised experience in the conduct of research studies or scholarly inquiry.

481 Research Internship II (3)
Prerequisite: Educ 480 and consent of instructor. Supervised experience in the conduct of research studies or scholarly inquiry.

482 Research Internship III (3)
Prerequisite: Educ 481 and consent of instructor. Supervised experience in the conduct of research studies or scholarly inquiry.

491 Staff Development and Professional Growth (1-10)
Designed in conjunction with an individual school district or educational agency and related to problems of education confronting that specific district or agency.

495 Doctoral Research Tools (1-6)
Prerequisites: Ed Rem 431. Structured individual or small group instructional or supervised investigative experience in and with a specific research skill and/or procedure that will be needed in the production of a doctoral dissertation. May not substitute for any existing graduate courses that cover same research tool skills.

497 Thesis Research (1-10)
Prerequisite: Consent of instructor.

499 Dissertation Research (1-12)
Prerequisite: Admission to the doctoral program. Credit awarded only upon successful defense of the dissertation.

Counseling and Family Therapy

Faculty

Therese S. Cristiani, Associate Professor,** Chairperson
Ed.D., Indiana University
R. Rocco Cottone, Professor**
Ph.D., Saint Louis University
Patricia A. Jakubowski, Professor Emerita*
Ed.D., University of Illinois
Arthur E. Smith, Professor Emeritus
Ph.D., Saint Louis University
Susan Kashubock-West, Associate Professor*,
Ph.D., Ohio State University
Mark Pope, Associate Professor**
Ed.D., University of San Francisco
W. Glenn White, Associate Professor Emeritus*
Ph.D., University of Missouri-Columbia
S. Kent Butler, Assistant Professor
Ph.D., University of Connecticut
H. Lori Schnieders, Assistant Professor*
Ed.D., University of Louisville
Donna Noonan, Affiliate Assistant Professor
Ph.D., Saint Louis University
* members of graduate faculty
**members of doctoral faculty

General Information

The Division of Counseling and Family Therapy is housed on the fourth floor of Marillac Hall. Information about offerings and related matters may be obtained in the departmental office, 469 Marillac Hall. The Division of Counseling and Family Therapy offers work leading to the M.Ed. and requisite course work for state certification in elementary and secondary school and counseling, and school psychological examiner. Non-certification degree work is available in community counseling and is designed to prepare students to take the state examination for licensed professional counselor.

Areas of emphasis in the counseling degree program are elementary school, secondary school, or community counseling.

The following Division of Counseling and Family Therapy programs have been accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP):

- Community Counseling (M.Ed. degree
- Community Counseling with a Specialization in Career Counseling (M.Ed. degree)
- School Counseling (M.Ed. degree

CACREP, a specialized accrediting body recognized by the Commission on Recognition of Postsecondary Accreditation, grants accredited status to graduate-level programs in the professional counseling field.

Students wishing to receive Missouri certification in elementary school counseling, or secondary school counseling, must complete all required courses in addition to holding teaching certificates valid in Missouri or taking the equivalent coursework. (Consult your adviser if you have questions on these matters.) The community counseling area, for which there are no certification requirements, is appropriate only for the practice of counseling in non K-12 settings.

The master of education degree in counseling has an exit requirement of a comprehensive examination. Students may sit for the exam after completing 36 units in their degree program. There is a service charge for taking the exam. The exam will be given at least twice a year. All degree students should consult with their advisers about this requirement

Graduate Studies

Admission
In addition to meeting the general admission requirements of the Graduate School, applicants to the master's of education with an emphasis in community or school counseling must complete the divisional application in addition to the application to Graduate School, have three completed references on file, must have an undergraduate GPA of 3.0, and must take Cns Ed 410, Personal and Professional Development in Counseling in their first semester. Admissions will be conducted twice a year. The deadlines for applications are June 1 for the fall semester and November 1 for the winter semester. Students are accepted on a provisional basis pending their completion of application materials, Cns Ed 410 and review by the Counseling Faculty Review Board.

Since it is the objective of the counseling faculty to identify students with low effectiveness potential as early as possible and to initiate the necessary procedures for dealing with such students, the faculty of the counseling program reserves the right to review students at any stage of their course work. Any grade less than a B in any core counseling course (Cns Ed 410, Personal and Professional Development in Counseling; Cns Ed 411, Theories of Counseling; Cns Ed 493, Counseling Practicum I, or CNS 485, Community Counseling Practicum; Cns Ed 494, Guidance Practicum II, or Cns Ed 486, Community Counseling Field Experience I; and Cns Ed 490, Internship, or Cns Ed 487, Community Counseling Field Experience II) will automatically trigger a review process which may result in the termination of the student=s degree program.

Students admitted to the master's degree program in counseling on restricted status must attain a 3.0 GPA for the first 12 hours of graduate course work at UM-St. Louis with no grades less than a B. Restricted students must include the following courses in the first 12 hours of course work: Cns Ed 410, Personal and Professional Development in Counseling; Cns Ed 411, Theories of Counseling, and Cns Ed 493, Counseling Practicum I, or

Cns Ed 485, Community Counseling Practicum. A student earning any grade less than a B in any of these three courses, but still maintaining a 3.0 GPA, will be allowed to repeat the course one time and must earn a grade of B or better to be admitted.

Master of Education: Emphasis in Elementary School Counseling
The courses listed below meet the course work requirements for the M.Ed. degree, state certification, and licensing as a professional counselor:

Counselor Education (Cns Ed)
410, Personal and Professional Development in Counseling
411, Theories of Counseling
412, Theories & Techniques of Counseling Children and Adolescents
413, Ethical and Professional Issues in Individual and Relationship Counseling
414, Individual Inventory
420, Group Procedures in Counseling
431, Foundations of School Guidance
442, Career Information and Development
482, School Counseling Practicum
483, School Counseling Field Experience I
484, School Counseling Field Experience II
495, Foundations for Multicultural Counseling

Psychological Foundations and Human Development (Ed Psy)
410, Lifespan: Individual & Family Development
432, Psycho-Educational Differences in Childhood

Educational Research and Evaluation Methods (Ed Rem)
421, Educational and Psychological Measurement
431, Educational Research Methods and Design

Individuals seeking certification as a professional school counselor in the State of Missouri who are non-teacher certificated must take the following courses in addition to their counseling degree: EP 411, SE 416, SE 320, and Elem. Ed. 410 or Sec. Ed. 415.

Master of Education: Emphasis in Secondary School Counseling

The courses listed below meet the course work requirements for the M.Ed. degree, state certification, and licensing as a professional counselor:

Counselor Education (Cns Ed)
410, Personal and Professional Development in Counseling
411, Theories of Counseling
412, Theories & Techniques of Counseling Children and Adolescents
413. Ethical and Professional Issues in Individual and Relationship Counseling
414, Individual Inventory
420, Group Procedures in Counseling
431, Foundations of School Guidance
442, Career Information and Development
482, School Counseling Practicum
483, School Counseling Field Experience I
484, School Counseling Field Experience II
495, Foundations for Multicultural Counseling

Psychological Foundations and Human Development (Ed Psy)
410, Lifespan: Individual & Family Development
432, Psycho-Educational Differences in Childhood

Educational Research and Evaluation Methods (Ed Rem)
421, Educational and Psychological Measurement
431, Educational Research Methods and Design

Individuals seeking certification as a professional school counselor in the State of Missouri who are non-teacher certificated must take the following courses in addition to their counseling degree: EP 411, SE 416, SE 320. and Elem. Ed. 410 or Sec. Ed. 415.

Master of Education: Emphasis in Community Counseling

The community counseling emphasis allows flexibility for developing programs appropriate to particular nonschool settings. Students must have their adviser's approval before taking other than required courses.

Core Curriculum (CNS ED)
The courses listed below meet the course work requirements for the M. Ed. Degree and the license to practice as a professional counselor:
410 Personal and Professional Development in Counseling
411 Theories of Counseling
413 Ethical and Professional Issues in Individual and Relationship Counseling
414 Individual Inventory
420 Group Procedures in Counseling
442 Career Information and Development
485 Community Counseling Practicum
486 Community Counseling Field Experience I
487 Community Counseling Field Experience II
495 Foundations of Multicultural Counseling

Psychological Foundations and Human Development (Ed Psy)

The following course is required:
413, Personality Development and Adjustment

Educational Research and Evaluation Methods (Ed Rem)
The following courses are required:
421, Educational and Psychological Measurement
431, Educational Research Methods and Design

Area of Specialization (9 hours)
Course work in the area of specialization is to be selected in consultation with the adviser and may include career counseling, mental health counseling, rehabilitation counseling, addictions counseling, couples and family counseling, and others.

Career Outlook

Elementary and Secondary School Counselors
The demand for school counselors throughout the state is quite high. There is a shortage of school counseling personnel at all levels. Additionally, many teachers who do not intend to leave the classroom pursue this program to be better able to meet the needs of their students. Some graduates of the program have left the field of education and have obtained positions such as those cited under Community Counseling.

Community Counselors
Graduates have been employed in a wide variety of settings: as counselors in community colleges, universities, employment agencies, vocational rehabilitation agencies, probation and parole work, juvenile detention, alcoholism and drug abuse clinics, career planning and placement centers, community mental health agencies, family and children services, and various federally funded public service projects. Additionally, graduates are employed in career development, and business and industry positions, especially in training and personnel areas. Others have moved into roles calling for research and evaluation skills.

Note It should be noted that in Missouri, persons who engage in "professional counseling" in many of these settings are required by law to be licensed as professional counselors.

Course Descriptions

Prerequisites may be waived by consent of the department.

For information about certification and licensure, an adviser should be consulted.

Course descriptions in this section are **Counseling (Cns)** courses.

Counseling (Cns)

110 Making a Career Choice (1)
Introduces students to career development theories (Holland, Super, Bolles, etc.) And the career decision-making process. Students receive an overview of career development theory and learn how these theories pertain to the formulation of career plans. Self-assessment and decision-making techniques learned in this class can be revisited throughout the life span. The seminar format allows for small group discussion of career-related issues and personal application of career development principles.

310 Introduction to the Counseling Profession (3)
Prerequisite: Junior or senior level standing. This survey course will provide undergraduates and noncounselors with a broad overview of the counseling profession. Topics include a history of the profession, foundations of counseling, ethical, and legal considerations and the role of the counselor in various settings.

318 Counseling Gifted Students (3)
Prerequisites: Spc Ed 313, Ed Psy 312, or equivalent. This course emphasizes the social and emotional development of gifted and talented individuals. Subject areas will include current research, factors affecting the development of the gifted, and resources and strategies utilized in counseling these students and their parents.

329 Counseling the Chemically Dependent (3)
This course is an introduction to the problems resulting from the abuse of alcohol and other chemicals, with an emphasis on the impact of chemical dependence on the individual, the family, the employer, and the community. The special problems resulting from chemical dependence as it affects various populations, e.g., women, individuals with disabilities, and the elderly, will be analyzed and linked to appropriate counseling strategies.

331 Counseling Individuals with Special Needs (3)
Prerequisite: Spc Ed 313 or equivalent. A course emphasizing counseling skills for individuals who plan to work with the handicapped. Emphasis is placed on using counseling strategies with school-age handicapped children.

332 Youth and Chemical Dependence (3)
Prerequisite: Junior standing. This course provides information about adolescent and preadolescent chemical dependency and its relationship to numerous other developmental and societal factors that place the adolescent "at risk" for the development of substance abuse problems. Skills in the identification, intervention, and referral of chemically- dependent adolescents are emphasized, along with preventive measures and family and school issues.

404 Seminar (3-10)

410 Personal and Professional Development in Counseling (3)
Prerequisite: Provisional acceptance to the Counseling Program or consent of instructor. This course provides an in-depth view of the professional counseling field. Attention is focused on the development of the helping relationship, including a review of research on factors which influence helping processes and rapport building, a development of skills used in the counseling process, and increased awareness of how students' values, beliefs, and behaviors are related to counselor effectiveness.

411 Theories of Counseling (3)
Prerequisite: Cns Ed 410. This course will explore the philosophical foundations of counseling theory. The major constructs of contemporary counseling approaches will be discussed, and the practical applications of these theories will be analyzed.

412 Theories and Techniques of Counseling Children and Adolescents (3)
Prerequisite: Cns Ed 410, 411 (with a grade of B or better in both courses) or consent of the instructor. Focus is on counseling theories and their applicability to the developmental special concerns of children and adolescents including child-at-risk issues such as: abuse, suicide, divorce, and death and dying. Individual, group, and family intervention techniques and consultation skills will be emphasized, as well as legal and ethical considerations for counselors. Strategies presented can be utilized in a variety of settings. Multicultural considerations are also addressed.

413 Ethical and Professional Issues in Individual and Relationship Counseling (3)
Prerequisite: Cns Ed 410. Ethical, legal, and professional issues related to counseling are addressed. Ethical dilemmas in the provision of counseling services to individuals, couples, families, and groups are defined. Specific ethical codes of professional organizations are examined.

414 Individual Inventory (3)
Prerequisites: Ed Rem 421. Uses of educational and psychological appraisal techniques in counseling. Develops counselors' abilities in assisting clients toward self-awareness through the use of test and nontest data. Ethical practices in the use of tests and the maintenance of personnel records are stressed.

420 Group Procedures in Counseling (3)
Prerequisites: Cns Ed 411 and Cns Ed 493. This course examines the process dynamics of groups including group development, leadership, norms and therapeutic factors. Group counseling theories and approaches used for other group work including skills, personal growth, support, vocational, and developmental guidance groups are included. Knowledge and skills of how to facilitate therapeutic groups are included. Students will be required to be participant-observers or facilitators of a group outside of class time.

423 Introduction to Systems Theory for Marriage and Family Counseling (3)
Prerequisite: Cns Ed 411. This course is an introduction to general systems theory and application to marriage and family counseling. Students learn the theoretical basis for intervention and counseling strategies in the context of an ecology of human development. Developmental issues at individual, sibling, marital, family, and community levels and the ways in which various social systems interact with and mutually influence one another are presented.

424 Marriage Counseling and Enrichment (3)
Prerequisite: Cns Ed 423 or consent of instructor. This course focuses on the theory and technique of marital or couples counseling and enrichment. Models and methods for prevention and treatment of relationship dysfunction are explored. Relationship developmental issues are addressed. Students are challenged to develop the critical skills necessary to be effective marriage counselors and marital life educators.

425 Family Counseling (3)
Prerequisites: Cns Ed 423 and Cns Ed 493, or consent of instructor. This course offers an in-depth analysis of strategic, structural, experiential, communications, behavioral, and psychodynamic approaches to systems change and family counseling. The range of techniques and applied practices evolving from each orientation are explored as are normal and dysfunctional family processes. Various counseling modalities, such as individual, concurrent, collaborative, conjoint, group, intergenerational, and networking are also considered.

426 Advanced Theories of Counseling and Family Therapy (3)
Prerequisites: Cns Ed 411 and Cns Ed 423, Cns Ed 493 or consent of instructor. Contemporary and emergent theories in counseling and family therapy are presented and analyzed. Research issues are addressed.

427 Introduction to Addictive Behaviors and Addiction Counseling (3)
Prerequisites: Cns Ed 411 or consent of instructor. Exploration of the theoretical foundations of contemporary approaches to such addictive behaviors as alcohol and drug abuse, smoking, compulsive gambling, and sexual addiction. The nature, etiology, prevention, and treatment of addictions are discussed and analyzed from a variety of theoretical perspectives. The applications of these specific theoretical models to various treatment settings are examined. Multicultural considerations are also addressed.

429 Advanced Strategies in Addictions Counseling (3)
Prerequisite: Cns Ed 427 or consent of instructor. Study of advanced, empirically supported counseling approaches and techniques for the treatment of addictive behaviors. An emphasis is placed on screening and assessment procedures and on matching interventions to individual client and community needs.

430 Counseling the Dual Diagnosed Substance Abuser (3)
Prerequisites: Cns Ed 427 and Cns Ed 411. This course introduces the student to the special needs, concerns, and problems encountered when counseling clients who are both mentally ill and chemically dependent. Subject areas include an overview of counseling methodologies, diagnosis, and psycho-pharmacology.

431 Foundations of School Guidance (3)
The purpose of this course is to give students a foundation for understanding the history, philosophy, and development of school guidance programs. The role functions of the school counselor within a developmental, comprehensive program are examined, along with communication skills necessary for consultation with students, parents, school support staff, and resource people in the community nonacademic needs.

442 Career Information and Development (3)
Prerequisites: Graduate standing. Emphasis is on the nature of the changing labor market and the impact on personal, social, economic, career and educational aspects of individuals and society. Use of occupational and educational information systems and resources to assist with career decisions are examined. The needs of culturally diverse populations are discussed. Use of career and labor market information and programs such as computer technology to access up-to-date career and labor market information is explored. Techniques and methods of career counseling are discussed. Various theories of career development and career choice will be examined.

443 Advanced Career Development (3)
Prerequisites: Cns Ed 442 or consent of instructor. Emphasis is on current theories of career development, career choice, and techniques and methods of career counseling. Issues concerning education and training, work, leisure, the family, life roles, and culturally diverse populations are studied. The role of career theory in planning, development, and delivery of a career development program is explored.

444 Career Assessment in Counseling and Rehabilitation (3)
Prerequisites: Cns Ed 414 and 442 or consent of instructor. This course provides an in-depth and specialized look at the educational and psychological assessment techniques used in career counseling, especially the assessment of career interests, work values, work environment, work skills, work samples, career development stages, career maturity, career decision making, and career beliefs. Issues of using computers in the delivery of career development services will be discussed.

451 Counseling Parents of Exceptional Children (3)
The development of counseling skills to enable human service professionals to interact productively with families who have handicapped children.

455 Counselor Education and Supervision. An introduction to clinical supervision in counseling. Theories, models, and research in supervision will be presented. Students will supervise master's level students in practicum and internship courses in counseling.

460 Rehabilitation Counseling (3)
Prerequisite: Cns Ed 410; 411; 493; or 485. This course addresses: a) the history of vocational rehabilitation; b) specialty issues in rehabilitation counseling; c) medical aspects of disability; d) the rehabilitation process; e) theories of rehabilitation; f) the assessment process of individuals with disabilities; g) the job placement and work adjustment process of individuals with disabilities; h) ethical issues in rehabilitation counseling.

461 Theory and Practice of Clinical Hypnosis in Counseling (3)
Prerequisite: Cns Ed 493 or 485 or Consent of instructor. Clinical hypnosis is conceptualized and approached as a system of skilled communication. Historical perspectives, major models (Traditional, Standardized, and Utilization [Ericksonian), myths, and misconceptions will be explored. Students will develop skills in direct and indirect trance induction procedures, and case conceptualization with individuals and multiple participants. Legal and ethical considerations will be presented.

462 Counseling Women Toward Empowerment (3)
Prerequisite: Cns Ed 410, 411 493 or 485. An introduction to Women's issues in counseling. Relational theory, healthy female development, and an overview of clinical issues most common to females will be presented.

470 Advanced Assessment in Counseling (3)
Prerequisite: Cns Ed 414 and doctoral standing or consent of the instructor. This course develops advanced skills in the assessment process which includes the administration, scoring, and interpretation of psychological tests and environmental inventories, clinical interviewing, observation, and the gathering of historical and collaborative information; and the integration of this information into patterns to predict human functioning.

471 Time-Limited Group Counseling (3)
Prerequisite: Cns Ed 420 and doctoral standing or consent of the instructor. The theory, techniques, and research in psychodynamic, interpersonal, cognitive-behavioral and existential-humanistic counseling groups are addressed, as well as levels of group focus; management of resistance and transference; research and methods of working through issues and assisting difficult, multi-problem group members.

472 Practicum in Group Counseling (3)
Prerequisite: Cns Ed 471 and doctoral standing or consent of instructor. Students will lead or co-lead a supervised counseling group in the community.

475 Doctoral Practicum (3)
Prerequisites: Doctoral standing. 100 hours of on-campus doctoral-level supervised counseling practice. Students will counsel clients and will be introduced to teaching and supervising beginning counseling trainees in a clinical context. As a prerequisite to the doctoral internship, students will be expected to demonstrate competence in skills required of counselor educators and clinical supervisors. Students will receive 1.5 hours of group and 1 hour of individual supervision by a graduate faculty member.

476 Doctoral Internship I (3)
Prerequisites: Cns Ed 475; Ed Rem 471 and 481. 300 clock hours of doctoral-level supervised practice in counseling. Students provide counseling services to clients at field sites, teach and supervise beginning counseling trainees, and conduct clinical research projects. Students are supervised by a graduate faculty member, with 2 hours per week of group supervision or 1 hour per week of individual supervision.

477 Doctoral Internship II (3)
Prerequisites: Cns Ed 476 or concurrent enrollment. Continuation of Cns Ed 476, Doctoral Internship I, with 300 clock hours of doctoral level supervised practice in counseling required. Students provide counseling services to clients at field sites, teach and supervise beginning counseling trainees, and conduct clinical research projects. Students are supervised by a graduate faculty member, with 2 hours per week of group supervision or 1 hour per week of individual supervision.

480 Advanced Clinical Issues in Counseling (3)
Prerequisite: Doctoral standing or consent of instructor. This course will address advanced clinical issues with seriously disturbed clients.

482 School Counseling Practicum (3)
Prerequisite: Cns Ed 410 and 411 (both courses with a grade of B or better) or consent of the instructor. Supervised practice in counseling with children and adolescents and the opportunity for students to learn to facilitate personal change and problem solutions using a defined systematic framework, theoretical orientation, or research base.

483 School Counseling Field Experience I (3)
Prerequisite: Cns Ed 482 with a grade of B or better and consent of instructor. A 300-hour closely supervised field experience under the direction of a graduate faculty member. Designed to move the student to an appropriate level of competence and evidence of growth in the professional school counselor role. Students will receive 1.5 hours of group and 1 hour of individual supervision weekly by a graduate faculty member.

484 School Counseling Field Experience II (3)
Prerequisites: Cns Ed 483 with a grade of B or better and consent of instructor. A 300-hour closely supervised field experience under the direction of a graduate faculty member. The course will build on and extend the School Counseling Field Experience I. The student will acquire counseling competencies and ethical practice in keeping with the Missouri state guidelines for school counselors. Students will receive 1.5 hours of group and 1 hour of individual supervision weekly by a graduate faculty member.

485 Community Counseling Practicum (3)
Prerequisite: Cns Ed 410 and 411 and consent of instructor. One hundred clock hours of supervised practice in counseling to provide the opportunity for students to pragmatically integrate and process materials, theories, techniques, and methodologies as they are applied in the counseling profession.

486 Community Counseling Field Experience I (3)
Prerequisite: Cns Ed 485 and consent of instructor. A 300-hour closely supervised field experience under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional counselor role must be demonstrated by the student. Students will receive 1.5 hours of group and 1 hour of individual supervision weekly by a graduate faculty member.

487 Community Counseling Field Experience II (3)
Prerequisite: Cns Ed 486 and consent of instructor. A 300-hour advanced closely supervised field experience under the direction of a graduate faculty member. The course will build upon and extend the Community Counseling Field Experience I. It is expected that the student will demonstrate counseling competencies and skills and ethical practice. Students will receive 1.5 hours of group and 1 hour of individual supervision weekly by a graduate faculty member.

490 Internship (1-10)
Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

494 Guidance Practicum II (3)
Prerequisite: Grade of B- or better in Cns Ed 493 and/or consent of instructor. Supervised practice in counseling.

495 Foundations for Multicultural Counseling (3)
Prerequisite: Cns Ed 411. This course will focus on: (1) reviewing knowledge and research in the area of multicultural counseling, (2) developing and/or enhancing skills useful in counseling with individuals from minority populations, and (3) developing levels of personal awareness about stereotypes, and learning how feelings and attitudes about these may impact counseling with individuals from minority populations.

496 Seminar in Counseling Research (3)
Prerequisite: Ed Rem 431, doctoral standing or consent of instructor. The purpose of this course is to review and analyze current counseling research literature. Ethical issues will be addressed.

497 Problems (1-10)

498 Advanced Multicultural Counseling (3)
Prerequisite: Cns Ed 495 and doctoral standing or consent of instructor. This advanced course addresses theories and research in multicultural counseling.

Educational Leadership and Policy Studies

Faculty

Carole A. Murphy, Associate Professor**, Chairperson
Ed.D., Texas A & M University
Timothy O'Rourke, Professor**
Ph.D., Duke University
Charles Schmitz, Professor**, Dean
Ph.D., University of Missouri-Columbia
Joy E. Whitener, Dean Emeritus, Professor Emeritus*
Ed.D., Washington University
Charles J. Fazzaro, Associate Professor**
Ed.D., West Virginia University
Lowe S. (Sandy) MacLean, Associate Professor*
Ed.D., Indiana University-Bloomington
Everette E. Nance, Associate Professor*, Dean, Evening College,
Ed.D., Western Michigan University
Patricia Somers, Associate Professor**
Ph.D., University of New Orleans
James E. Walter, Associate Professor**
Ph.D., University of Wisconsin-Madison
Patricia Boyer, Assistant Professor**
Ph.D., University of Missouri-Columbia
Fred E. Bradley, Assistant Professor**
Ph.D., Southern Illinois University-Carbondale
Kathleen Sullivan-Brown, Assistant Professor**
Ph.D., Washington University
Shaw Woodhouse, Assistant Professor*
Ph.D., University of Missouri-Columbia
Wendell L. Smith, Assistant Professor*,Interim Vice Chancellor for University Relations
Ph.D., Ohio State University
John Henschke, Associate Professor of Adult Education**
Ed.D., Boston University
Mary Cooper, Assistant Professor of Adult Education*
Ph.D., University of Minnesota
Paulette Isaac, Assistant professor of Adult Education*
Ed.D., University of Georgia
Dan Natale, Assistant Professor
Ph.D., University of Missouri-St. Louis
Ken Owen, Affiliate Associate Professor
Ed.D., Saint Louis University
Tom Hensley, Assiliate Assistant Professor, Director of Programs, Continuing Education, College of Arts and Sciences
Ed.D., University of Missouri-St. Louis
Cecil Abrahams, Visiting Assistant Professor
Ph.D., University of Alberta, Canada

* members of Graduate Faculty
** members of Doctoral Faculty

General Information

Faculty are housed on the second floor of Marillac Hall. Questions about the division and its offerings may be directed to the division office, 269 Marillac Hall (314-516-5944).

The division offers master's degree work and advanced certification studies in elementary and secondary school administration, special education administration, and the superintendency. Higher education, adult educat on, and community education are additional emphases offered.

The division offers courses in K-12 school administration, higher education, and adult and community education. The M.Ed. degree is offered in K-12 school administration. Both the Ed.D. and Ph.D. are offered with emphases in K-12 school administration, higher education, and adult education.

Graduate Studies

The program options in the division include:
- Elementary and secondary school administration.
- Certification for school district administration.
- Higher education administration
- Adult and community education.

The options in educational administration are more than simply lists of courses. Each is an organized curricular offering.

The school administration and certification sequences are organized into a continuous two-phase, NCATE- and DESE- approved program. In the first phase, students earn the M.Ed. The second phase leads to the completion of a two-year course of study and is designated the advanced certification studies program. Both phases are correlated with current Missouri requirements for certification as a principal or director of elementary or secondary education or school superintendent in Missouri schools.

The programs in higher education administration are intended to be incorporated in a doctoral program of studies, either the Ph.D. or the Ed.D. It is designed as a cooperative program with UM-Kansas City and UM-Columbia. Students can expect to be involved in cohort groups, non-traditional scheduling of most courses and to be taking Selected courses that are Web-based or through interactive television.

Students are responsible for developing their individual programs. They are encouraged to take full advantage of the program-planning assistance provided by advisers early in the program(s).

Master of Education and Advanced Certification Studies (ACS): Educational Administration
The recommended curriculum for the M.Ed. in educational administration is 33 semester hours. The curriculum for advanced certification studies is 60 semester hours.

Requirements

1.00 Contexts Core (15 semester hours)
Ed Adm 421, Knowledge Contexts of Education Administration and Policy
Ed Adm 422, Social Contexts of Education
Ed Adm 423, Political Contexts of Education
Ed Adm 424, Economic Contexts of Education
Ed Adm 425, Legal Contexts of Education

1.20 Research/Change Core (6-9 semester hours)
***Ed Rem 420**, Classroom Measurement and Evaluation
Ed Adm 431, Education Administration Policy Research
Ed Adm 453, Organizational Change in Education
1.30 School Specialization Core (12 semester hours)
1.31 Elementary School Administration
Ed Adm 432 Elementary School Administration
Ed Adm 441 School Staff Development and Supervision
Ele Ed 411 Curricular Issues in Elementary Schools
Ele Ed 422 Curriculum Construction in Elementary Schools
*** **Ed Adm 490** Internship

1.32 Secondary School Administration
Ed Adm 434 Secondary School Administration
Ed Adm 441 School Staff Development and Supervision
Sec Ed 414 Secondary School Curriculum
Sec Ed 416 Curriculum Construction in Secondary Schools
***Ed Adm 490 Internship

* Required if student had no equivalent course at the undergraduate level.
** Exit course--must be taken during last semester of M.Ed. program.
*** Must be taken within the last 10 semester hours before completion of M.Ed. program.

Master of Education: Educational Administration with Emphasis in Community Education
This is a 32-credit hour program for students interested in community education.

Degree Requirements
ED FND 421 Philosophy of Education
ED FND 435 History of Western Education
OR
Ed Fnd 320 History of American Education
Ed Fnd 422 Social Contexts of Education
Ed Fnd 423 Political Contexts of Education
Total Required Semester Hours Section 2.10 12

2.20 Research Core
Ed Adm 431 Educational Administration Policy Research
Ed Rem 330 Educational Statistics
Total Required Semester Hours 2.20 6

2.30 Community Education
Ed Rem 461 Administration of Community and Adult Education
Ed Adm 462 Programming in Community and Adult Education
Ed Adm 490 Internship: Community Education
Total Required Semester Hours Section 2.30 9

2.40 School Specialization**
2.41 Elementary School Administration
Ed Adm 432 Elementary School Administration
Eld Ed 411 Curricular Issues in the Elementary School OR
Ele Ed 422 Curriculum Construction in Elementary Schools
Total Required Semester Hours Section 2.41 6

2.42 Secondary School Administration
... **Ed Adm** 434 Secondary School Administration
Sec Ed 415 The Secondary School Curriculum
OR
Sec Ed 416 Curriculum Construction for Secondary Schools
Total Required Semester Hours Section 2.42 6

TOTAL Master of Education--Community Education **33**

*Exit Requirement--Taken within the last 9 semester hours of the M.Ed. program.
**Students take either section 2.41 or section 2.42, not both sections.

Course Descriptions

Educational Administration (Ed Adm)

Prerequisites may be waived by consent of the department.

411 Foundations of School Administration I (1)
Prerequisites: Admission to the masters, doctoral, and/or certification programs in education administration. This course is (1) an introduction to the sources of knowledge and information about education administration, (2) a review of written and oral communications standards in education administration, and (3) the uses of technology in education administration. Each student will be assigned to a Collegium (5-10 students under the direction of a faculty adviser) and begin the construction of a portfolio of academic work. Students will remain in their assigned collegium until they complete their programs of study.

412 Foundations of School Administration II (1)
Prerequisites: Ed Adm 411. This course must be taken during the middle third of the thirty-three (33) semester hour M.Ed. program or any administrator certification program. The course is designed to engage students in activities that relate the academic study of education administration to practice in the schools and to continue the construction of their individual portfolios.

413 Foundations of School Administration III (1)
Prerequisites: Ed Adm 412. This course must be taken during the last semester of the thirty-three (33) semester hour M.Ed. program or any administrator certification program. The course engages the student in an assessment simulation that parallels that of the Interstate School Leaders Licensure Consortium Council (ISLLC) of the Council of Chief State School Officers (CCSSO). Students will complete their individual portfolios by the end of this course.

421 Knowledge Contexts of Education Administration and Policy (3)
Prerequisites: Completed or enrolled in Ed Adm 411 or consent of instructor. This course is a survey of the various views of knowledge that have influenced the nature of the organizational structures and policies of American educational institutions. The course is framed both by the purposes of American education and the scientific management movement of the first quarter of the 20th Century.

422 Social Contexts of Education (3)
Prerequisites: Ed Adm 411, Ed Adm 421 or consent of instructor. This course is a critical examination of different perspectives on the social structures within which education policies are constituted and their concomitant practices implemented.

423 Political Contexts of Education (3)
Prerequisites: Ed Adm 411, Ed Adm 421or consent of instructor. This course is a critical examination of those aspects of local, state, and federal politics which significantly influence the political contexts within which education policies are constituted and their concomitant practices implemented.

424 Economic Contexts of Education (3)
Prerequisites: This course is a critical examination of those aspects of local, state, and national economic structures which influence the nature of education policies and their concomitant practices.

425 Legal Contexts of Education (3)
Prerequisites: Ed Adm 411, Ed Adm 421, or consent of instructor. This course is a critical examination of both (1) local, state, and federal laws and (2) Western notions of justice within which education policies are const tuted and their concomitant practices implemented.

431 Education Administration Policy Research (3)
Prerequisites: Ed Adm 412 (may be taken concurrently) or consent of instructor. A study of issues and trends in basic, applied, and action research in educational policy making.

432 Elementary School Administration (3)
Prerequisite: Ed Adm 412 (may be taken concurrently) or consent of instructor. This course is a comprehensive, systematic study of the elementary school principalship. Emphasis is placed on relating theories of learning, teaching, and organization to effective administration of elementary schools.

433 Middle School Administration (3)
Prerequisites: Ed Adm 412 (may be taken concurrently) or consent of instructor. This course is a comprehensive, systematic study of the middle school principalship. Emphasis is placed on relating theories of learning, teaching, and organization to effective administration of middle schools.

434 Secondary School Administration (3)
Prerequisite: Ed Adm 412 (may be taken concurrently) or consent of instructor. This course is a comprehensive, systematic study of the secondary school principalship. Emphasis is placed on relating theories of learning, teaching, and organization to effective administration of secondary schools.

435 School District Administration (3)
Prerequisite: Enrolled in Advanced Certification Program and/or consent of instructor. Course focuses on current research about school district administration; also deals with major central office issues including: board/ superintendent relations, central office organization, the function and authority of assistant superintendents and program directors, and the administrative team approach to school district administration.

441 School Staff Development and Supervision (3)
Prerequisite: Ed Adm 412 (may be taken concurrently) and/or consent of instructor. This course provides an examination of the conceptual bases and practical applications of staff development and supervision in educational settings. It explores relevant conceptual models presented as heuristic devices to consider a variety of administrative techniques to assess needs, plan, deliver, and evaluate staff development and supervision programs in schooling.

442 School Personnel Administration (3)
Prerequisite: Advanced standing and/or consent of instructor. This course is a comprehensive, systematic study of problems in planning, recruitment, selection, induction, and retention relative to school personnel.

443 Problems in School Public Relations (3)
Prerequisites: Advanced standing and/or consent of instructor. This course is an examination of a range of both traditional and critical perspectives relevant to home-school-community relations.

444 Collective Negotiations in Educational Organizations (3)
Prerequisites: Advanced graduate standing and/or consent of instructor. This course focuses on the concepts, issues, and processes involved with collective negotiations (bargaining) in American educational organizations. The major issues addressed in the course include recognition procedures, bargaining unit determination, the scope of negotiations, the proposal and counterproposal, compromise, impasse procedures, and master contract management.

445 Extracurricular Activities (3)
Prerequisites: Graduate standing and consent of instructor. Activities related to the extracurricular program of secondary schools will be studied in depth. Analyses of appropriate activities will include the nature and purposes of these activities.

446 Leadership in Educational Administration (3)
Prerequisites: Advanced standing and/or consent of instructor. This course is designed to acquaint the administrator with the factors of groups and interpersonal relationships directly affecting job performance. The consequences of various types of group relationships upon the institution will be studied in detail. The administrator will study various rationales for and methods of improving interpersonal relationships within the institution.

451 Principles of Public School Finance in Missouri (3)
Advanced graduate standing and/or consent of instructor. Course is designed to analyze and study critical areas of public school finance at the local and state levels, highlighting the role of such factors as legislative procedures, principles of local and state support, budgeting and accounting procedures, assessment of property, etc.

452 School Buildings and Sites (3)
Prerequisites: Advanced graduate standing and/or consent of instructor. This course deals with methods and procedures for (1) projecting the future building and facility needs of a public school district, (2) supervising actual planning and construction of educational facilities, (3) optimizing the use of current facilities, and (4) maintenance of buildings, grounds, and equipment.

453 Organizational Change in Education (3)
Prerequisite: Advanced graduate standing and/or consent of instructor. This course deals with (1) developing strategies for assessing educational needs, (2) methods of assessing the school's organizational health, (3) the designing of educational change strategies involving theory-based models, (4) using systems-analysis techniques to implement educational change, and (5) methods of involving students and staff in incorporating meaningful organizational change strategies in educational institutions.

461 Administration of Adult and Community Education (3)
Prerequisites: Graduate standing and consent of instructor. A course designed to familiarize the student with the structure, purpose, and processes of community education with particular emphasis being placed on the administrative theories and functions of adult education.

462 Programming in Community and Adult Education (3)
Prerequisite: Ed Adm 461 and/or consent of instructor. Study and analysis of basic situations in which community and adult educational programming take place. Within this framework, application will be made of a fundamental series of steps essential to sound educational programming.

463 Financing of Community Education (3)
Prerequisites: Graduate standing and consent of instructor. The student will develop the necessary skills needed to construct an operational budget for the administration of community education programs. Emphasis will be placed on developing a support base from federal, state, and local funding resources. The student will be exposed to proposal writing and funding procedures.

481 Education Administration Doctoral Seminar (1-6)
Prerequisites: Admission to doctoral program and consent of instructor. Intensive directed study of selected issues related to the administration of educational institutions.

482 Education Policy Studies Seminar (1-6)
Prerequisites: Admission to doctoral program and consent of instructor. Intensive directed study of selected education policy issues.

490 Internship (1-10)
Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

497 Problems (1-10)

Higher Education (HIRED)

401 Current Issues in Higher Education (3)
Prerequisites: Graduate admission. Familiarizes student with nature and characteristics of American higher education--structure of higher education, roles played by various constituencies, and current issues.

402 Student Affairs Administration (3)
Prerequisites: Graduate admission. Survey course in student personnel administration with emphasis on understanding college student and on learning ways to meet his/her academic and nonacademic needs.

404 Seminar (1-10)

406 Governance of Higher Education (3)
Prerequisites: Graduate admission. Concentrates on study of unique system of governance in higher education, including faculty, institutional system, and state governing mechanisms.

420 Legal Aspects of Higher Education (3)
Prerequisites: Graduate admission. Examines legal rights and responsibilities of faculty, students, staff, and administrators. Includes fair employment, due process, affirmative action, and liability.

421 Legal Aspects of Postsecondary Teaching (3)
Prerequisites: Graduate admission. Examines legal issues of interest to faculty. Areas include faculty issues (contracts, grievances/appeals/affirmative action, free speech, classroom incivility, student behavioral standards, grades).

430 The Community College (3)
Prerequisites: Graduate admission. Develops an understanding of the two-year college--its past, present, and future. Examines history, operations, funding, internal constituents, curricular mission, societal role, and current issues.

473 Curriculum in Higher Education (3)
Prerequisites: Graduate standing and consent of instructor. The development, implementation, and assessment of curriculum in higher education as well as historical and philosophical perspectives; major figures and emerging trends are included.

474 The College Student (3)
Prerequisites: Graduate standing and consent of instructor. A comprehensive overview of the theories and research
related to college and university student development. Particular attention is given to student demographics, patterns of growth and development, and attitudinal changes.

476 Organization and Administration of Higher Education (3)
Prerequisites: Graduate standing and consent of instructor. This course includes the study of the missions, governance, and organizational structures of American higher education institutions. Within this contexts, particular attention is given to administrative roles and responsibilities and issues of leadership.

477 History and Philosophy of American Higher Education (3)
Prerequisites: Graduate standing and consent of instructor. This course is a systematic study of the historical and philosophical contexts that have conditioned the evolution of American higher education. Particular attention is given to significant events, trends, and movements within American higher education.

Adult Education (Adu Ed)

311 Teaching Basic Reading Skills to Adults (3)
A study of the reading process and of the characteristics of adult learners with a focus on instructional techniques and materials useful in upgrading the performance of adults with deficient reading skills.

404 Seminar in Adult Education Research (1-10)
Prerequisites: Adu Ed 410 or consent of instructor. A review of current research on various topics in the field of adult education. An in-depth study of these research topics will be conducted. Application to the field of adult education will be considered. Special focus will be placed on assessing and improving competency in educational, corporate and community settings.

410 The Adult Learner (3)
This course is designed for those who help adults learn in a variety of settings. A study will be made of the characteristics of Adult Learners and various theories of how they learn, as well as the implications of these characteristics and theories for Adult education Research Programming, Curriculum, Planning, and Instructional Practice.

411 History of Adult Education (3)
Prerequisites: Adu Ed 410.Study of the historical foundation of adult education in America. Will include the major theorists and their contributions and the continuing education of the adult in a progressive social contest.

412 Philosophical Foundations of Adult Education (3)
Prerequisites: Adu Ed 410 or consent of instructor. A comprehensive, systematic philosophical foundation for adult education. Exploration of philosophical underpinnings of various approaches to education of adults--role of learner, teacher, and objectives within each philosophy.

413 Improvement of Instruction in Adult Education (3)
Prerequisites: Adu Ed 410 or consent of instructor. A study of selected methods and instructional techniques appropriate for the teaching of adults. An examination of current research will be made as it relates to the problems of instructing adults.

414 Curriculum Theory and Development in Adult Education (3)
Prerequisites: Adu Ed 410 or consent of instructor. A study of curriculum theory and its application to adult education. Particular emphasis will be placed on the development of model curricula for various programs in adult education.

416 Survey of Adult Distance Education (3)
Prerequisites: Adu Ed 410. Survey of distance education covers concept, theories, history, present practice, delivery systems, major issues and directions of distance learning. Emphasis on research and practice in U.S.; however, course will explore topics and issues in distance education from international perspective, identifying similarities and differences among countries.

417 Multicultural Issues in Adult Education (3)
Prerequisites: Adu Ed 410. Discussion of cultural diversity from adult education perspective. Topics include cultural self-awareness, challenges/issues in intercultural educational settings, theoretical perspectives of multicultural education, and practitioner concerns and strategies for implementing multiculturalism in adult education settings.

419 Adult Learning and Development (3)
Prerequisites: Ed Psy 410 or Ed Psy 411, or Adu Ed 410. (Same as Ed Psy 419.) Study of how life stage theories and theories of learning pertain to adult learner. Research bases of these theories explored in relationship to instructional practice with adult learners.

420 Survey of Human Resource Development and Adult (3)
Prerequisites: Graduate standing and permission of instructor. Overview of fields of human resource development and adult education. Examines societal contexts within which training of adults and organization development occur. Explores systems theory that frames a discussion of adult education, training, and organization development. Represents unique characteristics of each field as well as ways in which two fields come together, along with general concepts: definitions, philosophies, goals, sponsoring agencies, professional roles, processes, participants, and resources.

425 Principles of Business Education (3)
Prerequisites: Business education certification and consent of instructor. Designed for the business education teacher, this course examines in depth the principles, practices, and problems of business education programs. It emphasizes research into historical and philosophical implications, the influence of contemporary attitudes on business education, evaluation of current programs, and development of innovative approaches. It may be applied toward Missouri Vocational Business Education certification.

426 Coordination of Cooperative Vocational Programs (3)
This course deals with student selection procedures. Coordinating vocational instruction and planned employment experiences; research techniques for collecting and analyzing data for process and product evaluation; procedures for implementing new ideas and innovations in cooperative vocational education programs. The course is designed for vocational teachers and for teachers who wish to qualify as coordinators of cooperative vocational programs. This course may be applied toward Missouri Vocational Certification.

427 Improvement of Instruction in Teaching Business Subjects (3)
Prerequisites: Business education certification and consent of instructor. Designed for business education teachers, this course examines current trends in planning, organizing, developing, and evaluating instructional materials relevant to business education classes. Emphasis is placed on research techniques and strategies for selecting and utilizing appropriate curriculum materials, resources, and media to match learning needs. This course may be applied toward Missouri Vocational Certification.

432 Teaching in the Community College (3)
This course is designed for students considering a teaching career in the community college. The main emphasis of the course will be to expose students to the unique features of the community college with respect to the special goals of the institution, variety of degree and nondegree programs, and diversity of community college students. A second objective will be to offer a brief review of teaching techniques that will be useful in the community college classroom.

435 Problems in Teaching College Biology (3)
(Same as Biology 485.) Prerequisites: Teaching experience, 30 semester hours in biology, and consent of the 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.

490 Internship (1-10)
Prerequisites: Adu Ed 410 or consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

497 Problems in Adult Education (1-10)
Prerequisites: ADU ED 410 or consent of instructor. Independent study on topics in adult education.

Educational Psychology, Research, and Evaluation

Faculty

Margaret W. Cohen, Associate Professor**,
Chairperson
Ph.D., Washington University
Marvin W. Berkowitz, Sanford N. McDonnell Professor of Character Education**
Ph.D., Wayne State University
William L. Franzen, Professor *, Dean Emeritus
Ph.D., University of Wisconsin
Thomas E. Jordan, Curator's Professor* of Child Development, Professor Emeritus
Ed.D., Indiana University
W. Ray Rhine, Professor Emeritus*
Ph.D.
Steven D. Spaner, Associate Professor**
Ph.D., Southern Illinois University-Carbondale
Clark J. Hickman, Assistant Professor and Associate Dean of Continuing Education and Outreach*
Ed.D., University of Missouri-St. Louis
Matthew W. Keefer, Assistant Professor**
Ph.D., University of Toronto
Virginia L. Navarro, Affiliate Assistant Professor*
Ph.D., Washington University
Stephen A. Sherblom, Assistant Professor*
ED.D., Harvard University
* members of Graduate Faculty
** members of Doctoral Faculty

General Information

Faculty in the Division of Educational Psychology, Research, and Evaluation are housed on the fourth floor of Marillac Hall. Information about course offerings may be obtained in the division office, 402 Marillac Hall.

At the undergraduate level, the division coordinates educational psychology and measurement courses required in the various B.S. in education degree programs.

At the graduate level, the division offers courses in educational psychology and in educational research and evaluation methods required in the various M.Ed. degree programs and in the doctoral programs. Students choosing to pursue a Ph.D. in education may elect an emphasis in educational psychology. The Missouri certificate in school psychology is coordinated through this division.

Course Descriptions

Courses in this section are grouped as follows: **Educational Psychology (Ed Psy) and Educational Research and Evaluation Methods (Ed Rem)**

Educational Psychology (Ed Psy)

212 Introduction to Learners and Learning (3)
Prerequisite: Psych 3. (Same as Tch Ed 212) Foundational study of development of infants, children and adolescents focusing on role of appropriate educational environments in fostering positive physical, cognitive, social, and moral outcomes. Reading relevant research will be combined with experiences in the field and technology-based assignments to investigate influences that shape development processes.

312 The Psychology of Teaching and Learning (3)
Prerequisites: Tch Ed 210, Tch 211, Tch Ed 212 or equivalents and admission to Teacher Education program. (Same as Tch Ed 312.) Application of the principles of psychology to an understanding of the dynamics of teaching behavior and learning behavior. Involves both theoretical and practical approaches to analysis of the learning environment of the school. Required of all who are preparing to teach. Includes a field experience.

325 Education and the Psychology of Human Sexuality (3)
(Same as Nursing 325). The course is designed to provide educators and other human services personnel with knowledge and understanding of various personal and social dimensions of human sexuality.

404 Seminar (1-10)

410 Life-Span: Individual and Family Development (3)
Prerequisites: Graduate standing. Critical analysis of theories of human development including readings from empirical research and cross-cultural comparisons focusing on strategies to enhance developmental outcomes through relationship and environmental opportunity.

411 Psychology of Education (3)
Current psychological theories and research that guide inquiry and decision making in education. Topics surveyed include behavior, development, learning, instruction.

412 Psychology of Learning Processes (3)
Prerequisite: Ed Psy 411. Advanced study of learning and instructional theories. The historical and theoretical bases of instructional practice are examined.

413 Personality Development and Adjustment (3)
A course in personality development, personality structure, and the dynamics of adjustment. Course materials are oriented to the applied problems of counselors, teachers, administrators, and others in the helping professions.

416 Psychology of Early Childhood Development (3)
Prerequisite: Ed Psy 411 or consent of instructor. A survey of the theories, concepts, and research which inform the field of early childhood development to help caregivers and teachers understand the cognitive, social, and emotional changes that take place from birth through the primary years of schooling.

417 Psychology of the Elementary School Child (3)
Prerequisite: Ed Psy 411 or consent of instructor. Current research on the psychological changes which occur during the school age years of childhood. Includes attention to how development proceeds and to the processes that may alter its progress.

418 The Psychology of Adolescence (3)
Prerequisite: Ed Psy 411 or consent of instructor. Current research on the psychological changes which occur during adolescence. Attention is paid to the family, school, peer groups, and contemporary settings that practitioners must understand to help young people meet the psychosocial challenges of adolescence.

419 Adult Learning and Development (3)
Prerequisites: Ed Psy 410 or Ed Psy 411, or Adu Ed 410. (Same as Adu Ed 419.) Study of how life stage theories and theories of learning pertain to adult learners. Research bases of these theories will be explored in relationship to instructional practice with adult learners.

420 Behavioral Analysis of Human Learning (3)
Prerequisite: Graduate standing. A course in the principles of human learning and the technology of behavior modification, from the perspective of the teaching and counseling professions. Emphasis is placed on its application to school learning and behavior problems and to social behavioral patterns in a variety of appropriate counseling settings.

421 Biological Factors Influencing Human Behavior (3)
Prerequisite: Ed Psy 411 or Ed Psy 412 or consent of instructor. Examination of biological factors affecting human behavior. Includes an overview of neuroscience, developmental psychophysiology, and basic psychopharmacology. Implications for psychological and educational interventions are considered.

430 Foundations in School Psychology (3)
Prerequisites: Graduate standing and consent of instructor. Examination of history and foundations of school psychology, standards of practice, and legal and ethical practice considerations.

432 Psycho-Educational Differences in Childhood (3)
Prerequisite: EP 410 or EP 417 or EP 418 or consent of instructor. Examination of educational and mental health challenges first seen in childhood, with an emphasis on understanding both educational and mental health classification systems.

433 Psycho-Educational Interventions in Childhood (3)
Prerequisites: Ed Psy 430 and Ed Psy 432 or Cns Ed 410 or consent of instructor. Examination and evaluation of educational and mental health interventions delivered in schools and related settings, with emphases on primary prevention and systems perspectives.

434 Consultation in Schools and Related Settings (3)
Prerequisite: Ed Psy 430 or Cns Ed 410 or consent of instructor. An examination of theoretical principles, research, and legal and ethical issues as applied to consultation practices in schools and related settings.

441 Character Education and Development (3)
Prerequisites: Ed Psy 411 and Ed Psy 417 or Ed Psy 418. Critical survey of theories of character development and models for character education in childhood and adolescence. Includes empirical and conceptual study of the nature of moral character, how it develops, and how it can be fostered in schools.

442 Sociocultural Perspectives in Education (3)
Prerequisites: Doctoral standing or consent of instructor. Investigation of sociocultural theory with a focus on educational applications. Topics include the social formation of mind, language as cultural tool, methodological issues in social science research, and dialogic inquiry as pedagogy.

443 Motivation Theory in Education (3)
Prerequisites: Ed Psy 411 and doctoral standing or consent of instructor. Focuses on the social and cognitive aspects of contemporary theories of motivation and examines supporting research. Participants will apply theory to settings of teaching and learning, training, and counseling relevant to their interests.

445 Changing Perspectives in Educational Psychology (3)
Prerequisite: Doctoral standing or consent of instructor. The advanced exploration of foundational issues in educational psychology. Topics include theoretical perspectives of modes of analysis used in the investigation of psychological theories and concepts in education.

490 Internship (1-10)
Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

497 Problems (1-10)

Educational Research and Evaluation Methods (Ed Rem)

320 Classroom Testing and Measurement (3)
Basic measurement principles for the classroom teacher: test planning; construction and use of selection, supply, and performance type test items; item analysis for test improvement; methods of summarizing test scores; derived scores for interpretation of performance; development and use of norms in evaluation.

321 Interpretation of Educational Tests and Measurements (3)
Prerequisite: Meet the university standard for proficiency in basic mathematical skills. A study of the principles of test theory with emphasis on standardized aptitude, behavioral, and achievement tests; the interpretation of individual and group performance; and application within classroom settings. Required of all majors in special education.

330 Educational Statistics (3)
Prerequisite: Meet the university standard for proficiency in basic mathematical skills. Statistical methods for advanced undergraduate and beginning graduate students: descriptive statistics, probability and sampling, and introduction to hypothesis testing and inferential statistics

404 Seminar (1-10)
Prerequisite: Consent of instructor. Educational research and evaluation methods seminar addressing special issues and topics not normally included in the regular statistics, research methods, evaluation, and measurement courses.

412 Evaluation of Data Analysis Programs (3)
Prerequisite: Graduate admission and an introductory statistics course or consent of instructor. Principles and procedures for assessing the quality and effectiveness of data analysis computer programs and packages in educational research. Review and evaluation of various computer programs and packages used in educational research.

420 Classroom Measurement and Evaluation (3)
Prerequisites: Graduate admission or consent of instructor. An introductory graduate course to classroom testing and evaluation. Topic areas include comparison of criterion-and norm-referenced theory and technique; classical test theory, reliability, validity and associated descriptive statistics; derived and transformed scores; preparation of instructional objectives for use in developing the classroom test; performance evaluations, and portfolio rubrics.

421 Educational and Psychological Measurement (3)
Prerequisite: Graduate admission or consent of instructor. An introductory graduate course in testing and measurement theory: reliability, validity, and associated descriptive statistics; correlation and simple regression; derived and transformed scores; interpretation of test scores; measurement of aptitude, vocational interests, and personal-social adjustment.

422 Individual Assessment of Cognitive Abilities (3)
Prerequisite: Ed Rem 420, or 421, or consent of instructor. A course to develop administrative, interpretive, and reporting skills in the use of individually administered cognitive ability tests such as the Wechsler scales, the Stanford-Binet, and similar instruments.

423 Psycho-Educational Assessment of Children (3)
Prerequisites: Ed Psy 430 or Cns Ed 410 and Ed Rem 422 or consent of instructor. Develops administrative, interpretive, and reporting skills in educational and psychological assessment of children in schools and related settings, including standardized testing, interviewing, observation, and functional assessment.

431 Educational Research Methods and Design (3)
Prerequisite: An introductory statistics course or Ed Rem 420, or 421, or consent of instructor. An introductory course in educational research methodology: comparison of various types of qualitative and quantitative educational research, threats to internal/external validity, sampling methods, data analysis, and components of research reports.

432 Survey Research Methods in Education (3)
Prerequisite: An introductory statistics course and Ed Rem 431 or consent of instructor. (Same as Political Science 406 and Soc 432). A course on the principles and procedures for conducting survey research. Topics include forming questions and scales, survey design, sampling methods, data preparation and analysis, and presentation of results.

441 Action Research in Education (3)
Prerequisite: Ed Rem 431 or consent of instructor. A course that engages the participants in systematic qualitative inquiry into their own practice: framing appropriate questions; gathering and interpreting data; analyzing culture, subjectivity and multiple perspectives; and reporting the results ("telling the story"). Readings will address the methods, politics, and ethics of action research. Enrollment requires access to a field setting.

442 Nonparametric Statistics in Education (3)
Prerequisite: Ed Rem 431 or consent of instructor. An advanced educational research methods course in alternative analysis procedures to classical parametric statistics. Nonparametric methods are surveyed and their data requirements compared to their parametric counterparts. Educational research problems appropriate to or adaptable to these methods are studied.

451 Educational Program Evaluation (3)
Prerequisites: Admission to doctoral education and Ed Rem 431 or consent of instructor. A course on the principles and procedures for assessing the quality and effectiveness of programs, projects, and materials related to planned interventions and system changes in educational settings.

460 Advanced Test Theory in Education (3)
Prerequisite: Admission to doctoral education and Ed Rem 420, or Ed Rem 421, or consent of instructor. An advanced course in measurement theory and practice: issues of reliability, validity, and item analysis for both criterion and norm referenced tests; introduction to factor analysis in the development and analysis of test structure and validity; introduction to item response theory for the improvement of educational testing and research.

471 Quantitative Research Methods I (3)
Prerequisites: Admission to doctoral education and Ed Rem 431 or consent of instructor. An advanced educational research methods course: hypothesis testing using factorial analysis of variance; analysis of covariance; and the general linear model.

472 Quantitative Research Methods II (3)
Prerequisite: Ed Rem 471 or consent of instructor. An advanced educational research methods course: multivariate analysis of variance; canonical correlation, discriminant function analysis, factor analysis; cluster analysis; advanced topics in multiple linear regression; and associated research design issues.

473 Quantitative Research Methods III (3)
Prerequisite: Ed Rem 472. An advanced educational research methods course using multiple linear regression models, path analysis, and structural equation modeling. Focus is on the theory, issues, and application of these advanced data analysis techniques.

481 Qualitative Methods in Educational Research I (3)
Prerequisites: Admission to doctoral education and Ed Rem 431 or consent of instructor. An introductory qualitative research methods course in education to develop skill in forming research questions, writing field notes, and collecting, organizing, and analyzing a variety of data. Philosophical and ethical issues in qualitative research are presented.

482 Qualitative Methods in Educational Research II (3)
Prerequisite: Ed Rem 481 or consent of instructor. An advanced qualitative educational research methods course to address the issues of sampling strategies, observational and interview techniques, and data analysis. Requires access to a field setting to conduct a qualitative research study.

490 Internship (1-10)
Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

497 Problems (1-10)
Prerequisites: At least one previous Ed Rem course and consent of course supervisor. Individual study on topics pertaining to educational measurement, evaluation, statistics, and research design.

Teaching and Learning

Faculty

Helene J. Sherman, Associate Professor**, Associate Dean, Chairperson
Ed.D., University of Missouri-St. Louis
Judith Cochran, Des Lee Professor in Tutorial Education
Ph.D., Arizona State University
Carl Hoagland, Emerson Electric Company Professor in Technology and Learning
Ed.D., University of Massachusetts
Ric Hovda, E. Desmond Lee Professor in Urban Education
Ph.D., Ohio State University
Patricia Simmons, E. Desmond Lee Professor in Life-Long Learning for the Sciences
Ph.D., University of Iowa
Douglas Turpin, E. Desmond Lee and Family Fund Endowed Professor in Music Education
Ed.D., Washington University
Richard W. Burnett, Professor Emeritus*
Ed.D., Indiana University
Charles Granger, Professor**
Ph.D., University of Iowa
Kathleen M. Haywood, Professor**, Associate Dean for Academic Affairs
Ph.D., University of Illinois-Urbana-Champaign
William C. Kyle, Professor**
Ph.D., University of Iowa
Louis Lankford, Professor*
Ph.D., Florida State University
Wallace Z. Ramsey, Professor Emeritus*
Ed.D., University of Missouri-Columbia
Lloyd I. Richardson Jr., Professor**
Ph.D., George Peabody College
Arthur H. Shaffer, Professor**
Ph.D., University of California-Los Angeles
James Shymansky, Professor
Ph.D., Florida State University
Blanche M. Touhill, Professor*; Chancellor
Ph.D., Saint Louis University
Paul D. Travers, Professor Emeritus**,
Ed.D., George Peabody College
Doris A. Trojcak, Professor Emerita*
Ed.D., Indiana University
Harold E. Turner, Professor Emeritus*
Ed.D., George Peabody College
Huber M. Walsh, Professor Emeritus*
Ed.D., University of California-Los Angeles
Fred Willman, Professor*
Ph.D., University of North Dakota
Bruce A. Clark, Associate Professor Emeritus*
Ph.D., University of Illinois
Richard J. Friedlander, Professor**
Ph.D., University of California-Los Angeles
Harold Harris, Associate Professor*
Ph.D., Michigan State University
Allison K. Hoewisch, Associate Professor*
Ph.D., University of Southern Mississippi
Thomas J. Loughrey, Associate Professor*
Ph.D., University of Iowa
Thomas R. Schnell, Associate Professor*
Ph.D., Southern Illinois University-Carbondale
Charles G. Smith, Associate Professor; Athletic Director Emeritus, M.S., Washington University
Gwendolyn Turner, Associate Professor**
Ed.D., University of Arkansas
Cathy Vatterott, Associate Professor*
Ph.D., Saint Louis University
Gayle Wilkinson, Associate Professor**
Ed.D., University of Illinois
George J. Yard, Associate Professor Emeritus*
Ph.D., Saint Louis University
Jane Zeni, Associate Professor**
Ed.D., University of Missouri-St. Louis
Pamela C. Ashmore, Assistant Professor
Ph.D., Washington University
Susan Catapano, Assistant Professor
Ed.D., Nova Soea University
Scot Danforth, Assistant Professor **
Ph.D., University of South Florida-Tampa
Joseph L. Polman, Assistant Professor
Ph.D., Northwestern University
Laura Westhoff, Assistant Professor
Ph.D., Washington University
Linda Cason, Lecturer; Director, Gateway Writing Project;
M.Ed. Webster University
Linda Gagen, Lecturer
M.Ed., Kent State University
Jacquelyn A. Lewis-Harris, Lecturer
M.A., Washington University
Lynn Navin, Lecturer; Director, University Child Development Center
M.Ed., Michigan State University

* members of Graduate Faculty
** members of Doctoral Faculty

General Information

The faculty of the Division of Teaching and Learning have their offices on the 2nd and 3rd floors in Marillac Hall and in the Mark Twain Building. Information about course offerings and related matters on all programs except physical education may be obtained in 369 Marillac Hall. The physical education offices are located at 234 Mark Twain Building.

The division coordinates programs leading to a B.S. in education degree in:

Early childhood education
Elementary education
Physical education
Secondary education
Special education

Programs leading to the M.Ed. In elementary education, secondary education, and special education also are coordinated in the Division of Teaching and Learning.

The **early childhood** undergraduate program is designed for students wishing to teach and direct programs for children from pre-kindergarten through grade three. Students electing this program will work directly with young children as a part of their professional courses.

The graduate program is designed to develop master-level educators through a common core of essential knowledge and experiences drawn from current research and practice in the field of early childhood education. Through this program, candidates are able to further their competencies as educators, directors, program planners, and curriculum developers in various early childhood settings. Students can complete additional course work to receive certification.

The **elementary education** program prepares students to teach in grades one through six. Students may also tailor a program leading to a middle school/junior high teaching certificate. A special feature of these programs is the many opportunities to work with children in schools as part of the professional course work.

The graduate program strives to develop and refine the concept of the "teacher as researcher" or the "teacher as reflective decision maker or problem solver." It is based on the premise that as professionals, teachers must understand both the products or findings of research and the underlying processes that influence their professional practice.

Students may choose a program leading to the M.Ed. In education, generalized or specialized elementary education or elementary education with Missouri certification in reading.

The **physical education** program coordinates work in physical education which leads to a B.S. in education degree with certification to teach either PK-9 or K-12.

The elementary education and secondary education graduate programs provide courses for graduate students who choose physical education as their teaching field.

The **secondary education** program prepares students for teaching these subjects in secondary schools (grade 9-12): biology, business, chemistry, English, French, German, history, mathematics, music, physics, psychology, social studies, speech and Spanish. A special feature of these programs is the close interdisciplinary cooperation between the professional school and other university departments.

Students may also choose to pursue the bachelor's degree in the College of Arts and Sciences plus certification, or the B.S. in education degree which includes Missouri certification. Business education students have only the College of Education option.

At the graduate level, the division provides a program leading to a M.Ed in secondary education with emphasis in: adult education, certification studies with adult basic education, secondary education with emphasis in reading, and secondary education and certification. It offers graduate degree work and advanced certification studies in elementary and secondary school administration, special education administration, and the school superintendency.

The **special education** program prepares students to teach learners with developmental disabilities, emotional/ behavioral disorders, learning disabilities, or in early childhood special education settings. Students also receive certification as regular elementary school teachers upon completion of the curriculum. Missouri certification standards require a student teaching experience in each area of special education.

At the graduate level, requisite course work for Missouri certification in special education is available, as is the M.Ed. Degree.

Note The State Board of education developed standards for renewable professional certificates, based on specific requirements for training and experience. Details regarding these standards are available in the office of undergraduate studies in education.

Bachelor of Educational Studies

General Education Requirements

Communicative Skills (2 requirements)

- All students must complete a freshman English composition course with a grade of C- or better.
- All students must complete English 210--Advanced Expository Writing, or its equivalent, with a grade of C- or better.

Mathematical Skills

- A grade of C- or better in a college-credit mathematics course having at least intermediate algebra as a prerequisite, or
- A satisfactory score on the university's Mathematics Proficiency Test.

Breadth of Study (minimum 42 hours in the following three areas with at least three courses in each area)

- Humanities
- Natural sciences and mathematics
- Social sciences

Other Requirements

- American History or Government (course taken at the University of Missouri or at other colleges or universities in Missouri)

Degree Requirements

2 **Cultural Diversity Requirement** (3 hours)

- **Ed Psy 312** The Psychology of Teaching and Learning (3 hours)
- **Communication 40** Introduction to Public Speaking (3 hours)
- **6 hours in Psychology or Educational Psychology numbered 200 or higher**
- **Ed 290** Internship (6 hours)
- **Ed 291** Internship (6 hours)

At least one of the following:

- **Phy Ed 282** Physical Growth and Motor Development (3 hours)
- **Ed Psy 211** Growth and Development, **Ed Psy/Tch Ed 212,** (3 hours), Introduction to learners and Learning (3 hours), or equivalent
- **Psy 272** Adult Development and Aging (3 hours; same as Gerontology 272)

Emphasis in Early Childhood

One of the following two:

- **Ed Fnd 111** The School in Contemporary Society (3 hours or equivalent
- **Phy Ed 282** Physical Growth and Motor Development (3 hours)

All of the following:

- **Spc Ed 313** The Psychology and Education of Esceptional Individuals (3 hours) or equivalent
- **Ech Ed 303** Curriculum and Practice Laboratory: Infant/Toddler (1 hour)
- **Ech Ed 304** Curriculum and Practice Laboratory: Preschool (1 hour)
- **Ech Ed 312** Introduction to Early Childhood Education (3 hours)
- **Ech Ed 313** Curriculum and Practice: Infant/Toddler (2 hours)
- **Ech Ed 314** Curriculum Curriculum and Practice: Preschool (2 hours)
- **Ech Ed 317** Assessing Individual Needs for Early Childhood Instruction (3 hours)
- **Ech Ed 331** Language Acquisition and Development in Early Childhood (3 hours)
- **Ech Ed 332** Early Literacy (3 hours)
- Ech Ed 346 The Acquisition of Mathematical Concepts (3 hours)

Total: 27 hours

Second Concentration: Electives to toal 12 hours to be chosen from Ech Ed, Ele Ed, Spc Ed, Ed Tec, Ed Rem, or an area chosen in consultation with the adviser.

Emphasis in Exercise Science

All of the following:

- **Bio 113** Human Physiology and Anatomy I (4 hours)
- **Bio 114** Human Physiology and Anatomy I (4 hours)
- **Phy Ed 204** Special Topics in Physical Education (1-3 hours)
- **Phy Ed 283** Kinesiology (3 hours)
- **Phy Ed 284** Physiology of Human Exercise (3 hours)
- **Phy 285** Sports Medicine (3 hours)
- **Phy Ed 287** Seminar in Exercise Science (3 hours)

At least 6 credits from the following:

- **Phy Ed 261** Physical Activity for the Exceptional Learner (2 hours)
- **Phy Ed 275** Psychological Aspects of Physical Education
- **Phy Ed 330** Prescribing Physical Activity (3 hours)
- **Phy Ed 331** Adult Exercise Leadership (3 hours)
- **Phy Ed 380** Nutrition for Human Performance (3 hours)

Total 27-29 hours

Second concentration: Electives to total 12 hours to be chosen from Bio, Chem, Phys, Psy, Geron, or an area chosen in consultation with the adviser.

Emphasis in Professional Education Studies

27 hours in one of the following, numbered 200 or above: Ele Ed, Spc Ed, Sec Ed.

Candidates for the Bachelor of Educational Studies degree must achieve a cumulative grade point average of at least. 2.750, complete 24 or the last 30 hours in residence at UM-St. Louis, and be recommended by the faculty of the College of Education.

Admission Requirements

To be admitted to the Bachelor of Educational Studies Program an applicant must:

- Be regularly admitted to the College of Education.
- Have a UM and overall cumulative grade point average of 2.5 on a 4.0 scale.
- Have a 20 on the ACT or 800 on the SAT
- Have a 235 on each subtest of the CBASE.
- Complete English 10 with a C or better.
- Complete Mathematics 30 with a C or better
- Have at least 45 hours of college credit.
- Complete an application for the Bachelor of Educational Studies and secure appropriate signatures.

Early Childhood Education (Ech Ed)

Undergraduate Studies

Bachelor of Science in Education: Early Childhood

This program is designed for students wishing to teach and direct programs for children from birth through grade three.

General Education Requirements:
English and Communication (9 hours)
English 10, Composition
English 210 or 212, Advanced Expository Writing
Communication: 3 hours
Mathematics (3 hours)
Math 50, Structure of Mathematical Systems I
Biological Science: includes lab (5 hours)
General Biology 001/Lab 003
Physical Science: includes lab (4 hours)
Humanities (8 hours)
Three courses from two of the following fields: art, music, philosophy, and literature.
Social Science (15 hours)
Psych 3, General Psychology
PolSci 11, Introduction to American Politics, or equivalent
and one of the following history courses
Hist 3, American Civilization
Hist 4, American Civilization
and the following courses:
Pol Sci 85, Global Ecology
Soc 10, Introduction to Sociology, **or**
any anthropology course.

Degree Requirements
Students are required to take the general education requirements as indicated for early childhood education above.

Level I: Exploring Education as a Profession
Tch Ed 210, Introduction to Teaching
Tch Ed 211, Introduction to American Schools

Tch Ed 212, Introduction to Learners and Learning
Level II: Analyzing the Nature and Process of Education
Tch Ed 310 Introduction to Instructional Materials
Tch Ed 312, Psychology of Teaching and Learning
Tch Ed 313, The Psychology and Education of Exceptional Individuals
Tch Ed 315, Literacy Learning and Instruction
Phy Ed 130 Elements of Health Education
Phy Ed 282, Physical Growth and Motor Development
Level III: Synthesizing Theory and Practice in Education
Ele Ed 330 Children's Literature and Reading

Ele Ed 336, Teaching Language Arts and Reading, N-9

plus these Early Childhood Education (Ech Ed) courses:

Note Ech Ed 290 and Ech Ed 291 must be taken during the same semester.
312, Introduction to Early Childhood Education
317, Assessing Individual Needs for Early Childhood
331, Language Acquisition and Development in Early Childhood
332, Early Literacy
346, The Acquisition of Mathematical Concepts
313, Curriculum and Practice: Infant/Toddler
314, Curriculum and Practice: Preschool
315, Curriculum and Practice: Primary
303, Curriculum and Practice Laboratory: Infant/Toddler
304, Curriculum and Practice Laboratory: Preschool
305, Curriculum and Practice Laboratory: Primary
290, Student Teaching in Early Childhood Education I (6 hrs)
291, Student Teaching in Early Childhood Education II (6 hrs)

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).

Total: A minimum of 120 hours

Graduate Studies

Master of Education: Elementary Education, Concentration in Early Childhood Education

This program is designed to develop a master teacher through a common core of essential knowledge and experiences drawn from current research and practice in early childhood education. **Teaching and Learning (continued)**

Core Competencies (12 hours):

Ele Ed 410, Current Research in Elementary School Curriculum (required as the entry course in the program).
Ele Ed 411, Curricular Issues in the Elementary School

Students may select **two** of the following courses:
Ech Ed 410, Foundations of Preschool Education (strongly suggested)
Ed Psy 412, Psychology of Learning Processes
Ed Psy 416, Psychology of Early Childhood Development
Ech Ed 490, Internship
Ech Ed 497, Problems

Content Competencies (minimum of 12 hours of course work from the following areas):

Early Childhood Certification Courses
Early Childhood Electives
Other courses approved by adviser

Curricular Application Competencies (9 hours):

A measurement course is required before admission to the exit course Ele Ed 423 and one of the following is suggested:

Ed Rem 420, Classroom Measurement and Evaluation **or**
Ed Rem 421, Educational and Psychological Measurement **or**
Ed Rem 431, Educational Research Methods (an option if a prerequisite measurement course was completed at the undergraduate level)
Ele Ed 422, Curriculum Construction in Elementary School **and**
Ele Ed 423, Curriculum Implementation in Elementary School

Career Outlook

The field of early childhood education has experienced a marked increase in the demand for highly qualified and professional prepared educators. As research continues to focus on the crucial early years of development, the need for trained professionals in early care and education will continue to rise. Early childhood graduates at all degree levels are attractive candidates for employment in a variety of educational positions. The downward extension of Aages of schooling@ opens employment opportunities in the public and private sector. Future expansions of opportunities in schools are tied to population growth, increased specialization of services, and reduction in ratios between professional staff and children served. Additional career opportunities exist for early childhood educators in specialized child care, private family care, instruction and training, corporations, self-owned businesses, and family- focused public and private agencies. Qualified early childhood educators can and do make a powerful difference in the lives of families and children.

Elementary Education (Ele Ed)

Undergraduate Studies

Bachelor of Science in Education: Elementary Education

The elementary education program prepares students to teach in grades one through six.

General Education Requirements:
English and Communication (9 hours)
English 10, Freshman Composition
English 210, Advanced Expository Writing
***Communication 40** Introduction to Public Speaking
Mathematics (6 hours)
Math 50, Structure of Mathematical Systems I
Mathematics 151 Structure of Mathematical Systems II
Biological Science: includes lab (5 hours)
***General Biology 001/Lab 003**
Physical Science: includes lab (4 hours)
Humanities (8 hours)
Three courses from two of the following fields: art, music, philosophy, and literature.
Social Science (18 hours)
Psych 3, General Psychology
Pol Sci 11, introduction to American Politics, OR equivalent
And one of the following history courses:
Hist 3, American Civilization
Hist 4, American Civilization
Pol Sci 85, Global Ecology
Soc 10, Introduction to Sociology, or
Any anthropology course.
Econ 306, Microeconomics for the School Curriculum

Program Requirements
Level I: Exploring Education as a Profession
Tch Ed 210, Introduction to Teaching
Tch Ed 211, Introduction to American Schools
Tch Ed 212, Introduction to Learners and Learning;

Level II:
Tch Ed 310, Introduction to Instructional Methods
Tch Ed 312, Psychology of Teaching and Learning;
Tch Ed 313 The Psychology and Education of Exceptional Individuals
Tch Ed 315, Literacy Learning and Instruction

Level III: Synthesizing Theory and Practice in Education
*Internship hours are met through special methods courses in Level III.
246, Teaching Mathematics in the Elementary School
253, Teaching Social Studies in the Elementary School
330, Children's Literature and Reading
336, Teaching Language Arts and Reading N-9
341, Teaching of Science in the Elementary School
389, The Analysis and Correction of Reading Problems in the Classroom
***291**, Elementary School Student Teaching

Attention education majors: Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C-.

Middle School/Junior High (5-9)
General education requirements are the same as for elementary education, except that Psychology 271, Adolescent Psychology, is taken in lieu of Psychology 270, Child Psychology.

Related Area Requirements
Phy Ed 130, Elements of Health Education
Phy Ed 165, Physical Education Activities for the Elementary School
Ele Ed 177, Elementary School Music
Ele Ed 179, (Art 139), Art Activities for Elementary School

Program Requirements
Educ 101, Introduction to Classroom Teaching
Ed Fnd 111, The School in Contemporary Society
Ed Psy 312, Psychology of Teaching and Learning
Spc Ed 313, The Psychology and Education of Exceptional Individuals

and these **Elementary Education (Ele Ed)** courses:
246, Teaching Mathematics in the Elementary School
253, Teaching of Social Studies in the Elementary School
***290**, Elementary School Student Teaching I
***291**, Elementary School Student Teaching II
330, Children=s Literature and Reading
336, Teaching Language Arts and Reading, N-9
341, Teaching of Science in the Elementary School
385, Teaching Reading in the Elementary School
389, The Analysis and Correction of Reading Problems in the Classroom

***Note** Ele Ed 290 and Ele Ed 291 must be taken during the same semester.

Attention education majors: Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C (2.0). A C- grade is not acceptable.

Postdegree certification students may take Ed Fnd 330, History of American Education, or Ed Fnd 421, Philosophy of Education, in lieu of Ed Fnd 111.

Changes in teacher certification requirements in this area are upcoming. To obtain the latest information on requirement changes or to find out whether the new requirements will

apply to you, contact the office of undergraduate teacher education, 155 Marillac Hall.
Total: 120 hours

Bachelor of Science in Education: Elementary Education (Middle School Certification)
This area of specialization in elementary education prepares students to teach in grades 5-9.

General Education Requirements
General education requirements are the same as for elementary education.

Related Area Requirement
Phy Ed 130, Teaching Health in the Elementary School

Program Requirements
Level I: Exploring Education as a Profession
Tch Ed 210, Introduction to Teaching
Tch Ed 211, Introduction to American Schools
Tch Ed 212, Introduction to Learners and Learning

Level II: Analyzing the Nature and Process of Education
Sec Ed 315, The Middle Level School
Ele Ed 316, Middle Level Curriculum and Instruction
Tch Ed 310, Introduction to Instructional Methods
Tch Ed 312, The Psychology of Teaching and Learning
Tch Ed 313 The Psychology and Education of Exceptional Individuals
Tch Ed 386, Teaching Reading in the Secondary School Content Area

Level III: Synthesizing Theory and Practice in Education
Ele Ed 389, The Analysis and Correction of Reading Problems in the Classroom
Sec Ed 305, Writing for Teachers
Ele Ed 317, The Middle level Child
Spc Ed 320, Behavior Management

Special Methods
Along with education courses in Level III, students must take the appropriate special methods course congruent with the certification area(s) listed below:
Ele Ed 336, Teaching Language Arts and Reading, N-9
Ele Ed 253, Teaching of Social Studies in the Elementary School
Ele Ed 246, Teaching Mathematics in the Middle School
Ele Ed 341, Teaching of Science in the Elementary School
Ele Ed 291, Student Teaching

Area of Concentration for State Certification
Middle School certification 5-9 requires a minimum of 21 hours for certification in the specific content of language arts, social studies, math, or science. Contact the office of undergraduate teacher education, 155 Marillac Hall, for specific content area courses.

Attention education majors: Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C- is acceptable.

Minimum of 120 hours.

Graduate Studies

Master of Education: Elementary Education

General Curricular Program or Specialization in Selected Curricular Areas
The M.Ed. student in elementary education may elect a general program or the emphasis in reading. Please note, however, that in either case the degree is the master of education in elementary education. Diplomas and transcripts do not show areas of specialization, nor are special certificates awarded.

1) Core Competencies (12 hours)
To include Ele Ed 410, Current Research in the Elementary School Curriculum; Ele Ed 411, Curricular Issues in the Elementary School; and 6 hours selected, in consultation with advisers, from among cognate fields or professional education.

2) Content Competencies (12 hours)
Students desiring to specialize through a sequence of courses should select at least 9 hours in one of the following areas: children's literature, early childhood, language arts, mathematics education, reading, science education, social studies education, or special education. Students who elect a general sequence should take no more than 6 hours in any one area.

3) Curricular Applications Competencies (9 hours)
Students must select, in consultation with their advisers, a measurement course, and complete the following: Ele Ed 422, Curriculum Construction in Elementary Schools, and Ele Ed 423, Curriculum Implementation in the Elementary School.

Upon completion of Ele Ed 410 and Ele Ed 411 in phase one, each candidate selects a curricular area or areas, identifies an adviser from the elementary and early childhood education faculty, and plans appropriate course sequences. A candidate enrolling in the specialist program should select an adviser in the area of specialization.

The sequence of courses, Ele Ed 410 and Ele Ed 411, should be taken at the beginning of the program; Ele Ed 422 and Ele Ed 423 constitute the final two program courses. Students should note that Ele Ed 411 is typically offered only during the winter and summer semesters, Ele Ed 422 is offered only during the fall semester and Ele Ed 423 only during the winter semester.

Electives should be selected according to candidates' needs and/or interests.

Emphasis in Reading
The M.Ed. program with emphasis in reading is designed to enable candidates to further their competencies as reading teachers and prepares them for positions as remedial reading specialists, reading consultants, and/or for further graduate study. The minimum required and recommended courses are as follows:

1) Core Requirements
At least one graduate-level course in each of the following areas: learning psychology; research, statistics, and measurements; and elementary curriculum.
2) Courses in Reading
The following required courses in reading should be taken in sequence. Courses denoted by asterisks are required for certification in remedial reading by Missouri teacher certification regulations. Students, with their advisers' permission, may substitute other courses for any requirement if they have had a recent upper-class undergraduate course covering the same material.

Required are:
***Ele Ed 385,** Teaching Reading in the Elementary School
***Sec Ed 386,** Teaching Reading in Secondary School Content Areas
these **elementary education (Ele Ed)** courses:
***486,** Clinical Diagnosis and Treatment of Reading Disabilities
***493,** Clinical Methods in Child Study I
***494,** Clinical Methods in Child Study II

Note Ele Ed 493 is offered in Fall and Summer Semesters; Ele Ed 494 is offered in the Winter and Summer.
and also:
Ele Ed 482, Problems and Research in Teaching Elementary School Reading (offered only in the winter semester).
***Ed Rem 420,** Classroom Measurement and Evaluation
***Spc Ed 315,** Speech and Language Problems, or
***Ech Ed 331,** Language Acquisition and Development
***Spc Ed 320,** Behavioral Management
***Cns Ed 310,** Introduction to the Counseling Profession
***Ed Psy 417,** Psychology of the Elementary School Child
***Ed Psy 418,** Psychology of Adolescence

Note Spc Ed 412, Psychology of Exceptional Children, is required for certification if it has not been taken previously at the undergraduate or graduate level. It is not a degree requirement.

3) Electives
Following is a list of possible elective courses. Other courses may be selected from cognate fields after conferring with an adviser in reading.

English 220, Development of the English Language
Ed Fnd 421, Philosophy of Education
Adu Ed 311, Teaching Basic Reading Skills to Adults
Ele Ed 484, Developmental Reading (K-13)
Ele Ed 488, Supervision of School Reading Programs

Certification Options
A combined M.Ed. and certification option exists. Options include elementary education (1-8), early childhood education (PK-3), and middle school/junior high (4-9). Students should consult certification advisers. Graduate credit will not be given for courses at the 100 or 200 level.

Career Outlook

Undergraduate and graduate degrees in elementary education are most directly applicable to teaching at the level appropriate to the program emphasis. Increasing specialization of teaching assignments and downward extensions of Aages of schooling== continue to open employment opportunities. As in the past, elementary education graduates at all degree levels also continue to be attractive candidates for employment in many positions which require (or are well suited to) training in social and behavioral sciences. Positions in constant contact with and service to the general public such as sales, service, public relations, and general business are most common examples. Future expansions of opportunities in schools are tied to population growth, increased specialization of services, and reduction in ratios between professional staff and children served. Many currently employed teachers will retire within the next 5-10 years; consequently, a shortage of teachers is anticipated.

Physical Education (Phy Ed)

Undergraduate Studies

Bachelor of Science in Education: Physical Education

This program prepares students to teach physical education. Individuals can be certified for grades PK to 9 only or for grades PK to 12.

Communication Skills (9 hours)
English 10, Freshman Composition
English 210, Advanced Expository Writing or equivalent
Communication 30 or 40

General Education Requirements (42 hours required):

Humanities (8 hours)
Three courses from two curricular designations in the humanities (Symbol H).

Social Science (9 hours)
One course in American history
One course in American government
Psych 3, General Psychology

Natural Science (8 hours)
One course in a physical or earth science
One course in a biological science.
At least one of these courses must have a **laboratory component.**

Mathematics (3 hours)
One college-level mathematics course

Note: All of the courses above must be a minimum of two semester hours.

Electives 11-14 hours
PK-9 Emphasis

The following theory of physical education (Phy Ed) courses are required, 31 hours, to be taken with Level I professional education courses:

234, Teaching of Wellness and Health Related Fitness (4 hrs)
261, Physical Activity for the Exceptional Learner (2 hrs)
267, Performance Analysis in Physical Education (3 hrs)
275, Psychological Aspects of Physical Education (3 hrs)
277, Historical/Philosophical Foundations of Physical Education and Sport (2 hrs)
280, Human Anatomy and Physiology, (5 hrs)
282, Physical Growth and Motor Development (3 hrs)
283, Kinesiology (3 hrs)
284, Physiology of Human Exercise (3 hrs)
285, Sports Medicine (3 hrs)

The following courses in teaching of skills are required in **physical education (Phy Ed),** 14 hours, to be taken with Level II professional education courses. These courses are required:
220, Teaching of Skills: Movement and Rhythms (3 hrs)
221, Teaching of Skills: Dance (3 hrs)
222, Teaching of Skills: Grades PK-4 (4 hrs)
223, Teaching of Skills: Grades 5-9 (4 hrs)

The following **professional education** courses are required (31 hours):

Level I: Exploring Education as a Profession

Tch Ed 210, Introduction to Teaching
Tch Ed 211, Introduction to Schools
Tch Ed 212, Introduction to Learners

Level II: Analyzing the Nature and Process of Education

Tch Ed 312, Psychology of Teaching and Learning
Tch Ed 313, Psychology and Education of Exceptional Individuals
Tch Ed 386, Teaching Reading in Secondary School Content Areas
Phy Ed 268, The Curriculum and Methods of Teaching Physical Education

Level III: Synthesizing Theory and Practice in Education

Internship hours are met through the teaching of skills courses
Phy Ed 290, Student Teaching in Physical Education PK-5
Phy Ed 291, Student Teaching in Physical Education 5-9

Total: 127 hours

Attention education majors: Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C- .

Grades PK through 12 Emphasis

The following theory of physical education (**Phy Ed**) courses are required, 33 hours, to be taken with Level I professional education courses:

234, Teaching of Wellness and Health Related Fitness (4 hrs)
261, Physical Activity for the Exceptional Learner (2 hrs)
267, Performance Analysis in Physical Education (3 hrs)
275, Psychological Aspects of Physical Education (3 hrs)
276, Sociological Foundations of Physical Education and Sport (2 hrs)
277, Historical/Philosophical Foundations of Physical Education and Sport (2 hrs)
280, Human Anatomy and Physiology, (5 hrs)

282, Physical Growth and Motor Development (3 hrs)
283, Kinesiology (3 hrs)
284, Physiology of Human Exercise (3 hrs)
285, Sports Medicine (3 hrs)

The following courses in teaching of skills are required in **physical education (Phy Ed)**, 14 hours, to be taken with Level II professional education courses. These courses are required:
220, Teaching of Skills: Movement and Rhythms (3 hrs)
221, Teaching of Skills: Dance (3 hrs)
222, Teaching of Skills: Grades PK-4 (4 hrs)
223, Teaching of Skills: Grades 5-9 (4 hrs)
224, Teaching of Skills: Grades 9-12)4 hrs)

The following **professional education** courses are required (31 hours):

Level I: Exploring Education as a Profession

Tch Ed 210, Introduction to Teaching
Tch Ed 211, Introduction to Schools
Tch Ed 212, Introduction to Learners

Level II: Analyzing the Nature and Process of Education

Tch Ed 312, Psychology of Teaching and Learning
Tch Ed 313, Psychology and Education of Exceptional Individuals
Tch Ed 386, Teaching Reading in Secondary School Content Areas
Phy Ed 268, The Curriculum and Methods of Teaching Physical Education

Level III: Synthesizing Theory and Practice in Education

Internship hours are met through the teaching of skills Courses. Two of the following three:
Phy Ed 290, Student Teaching in Physical Education PK-5
Phy Ed 291, Student Teaching in Physical Education 5-9
Phy Ed 292, Student Teaching in Physical Education 9-12

Minimum: 133 hours

Attention education majors: Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C- .

Athletic Coaching Minor
An athletic coaching minor is available (minimum of 20 hours). The following courses are required:

Phy Ed 283, Kinesiology
Phy Ed 284, Physiology of Human Exercise
Phy Ed 284, Physiology of Human Exercise
Phy Ed 224, Teaching of Skills: Grades 9-12
Phy Ed 312, Management of Sports Programs
Phy Ed 330, Prescribing Physical Activity

All courses apply to, but do not complete, teaching certification in Missouri.

Health Certification
For those with a valid teaching certificate in physical, courses are available to obtain an additional endorsement in health education.

Master of Education: Elementary or Secondary Education with Physical Education as Teaching Field

A significant number of graduate students choose physical education as the teaching field within one of the master of education degree options. Most are currently employed as teachers of health and/or physical education. Certification requirements in Missouri mandate the completion of a master's degree to professionalize the certificate. Therefore, a full complement of graduate courses relating to teaching in physical education is available to meet this need. For many who need to pursue teacher certification in physical education while pursuing the master's degree, most course work needed to meet state certification requirements can be taken in the master's program. For those employed outside education, an emphasis in exercise science is also available, providing a foundation of course work designed to prepare a person in this area. Specific information is available regarding each of these degree programs. Please consult with your graduate adviser to discuss the specific options and requirements.

Career Outlook

The employment outlook for physical educators in the schools continues to be positive, especially in the elementary and middle school levels. Recent placement years have yielded full employment opportunities to UM-St. Louis graduates. Rising school enrollments and the expected retirement of a significant portion of currently employed teachers signal optimistic outlooks for the next few years. In addition to elementary, middle school, and high school physical education teaching, more limited opportunities exist in athletic training, dance, research, sports management, and exercise leadership fields serving persons of all age categories.

Secondary Education (Sec Ed)

Undergraduate Studies

Bachelor of Science in Education: Secondary Education
Two secondary education programs prepare students to teach in grades 9 through 12: Bachelor of Science in Secondary Education through the College of Education (B.S.Ed.) OR Bachelor of Arts in a department of the College of Arts and Sciences (B.A.) with certification in Secondary Education

General Education Requirements
B.S.Ed. degree candidates must complete the following general education courses required by the College of Education and the Missouri Department of Elementary and Secondary Education.

Humanities
Three courses required from two of the following fields: music (excluding applied music), art, foreign language, Western and non-Western cultures, philosophy, literature, classical studies, and theater and drama.

Communication Skills
At least **two** courses in **English composition** and **one** in **oral communications.**

Social Studies
One course in each--American history and American government, **and one** additional course selected from the following areas: geography, sociology, economics, anthropology, psychology.

Natural Science
One course in a physical or earth science; **one** course in a biological science. At least **one** of these courses must have a **laboratory component.**

Mathematics
One college-level mathematics course.

Note All of the courses above must be a minimum of 2 semester hours.

Program Requirements

B.S.Ed. and B.A. certification candidates must complete the following courses:

Level I: Exploring Education as a Profession

Tch Ed 210, Introduction to Teaching
Tch Ed 211, Introduction to Schools
Tch Ed 212, Introduction to Learners

Level II: Analyzing the Nature and Process of Education

Tch Ed 310, Introduction to Instructional Methods
Tch Ed 312, Psychology of Teaching and Learning
Tch Ed 313, Psychology and Education of Exceptional Individuals
Tch Ed 386, Teaching Reading in Secondary School Content Areas

Level III: Synthesizing Theory and Practice in Education

Sec Ed 2xx, Curriculum and Methods of Teaching (specific subject area)
Sec. Ed 290, Internship
Sec Ed 291, Student Teaching
Attention education majors: Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C- is acceptable.

Note: Music education students take the following courses instead of Sec Ed 291: Sec Ed 293, Student Teaching in Music Education K-6, and Sec Ed 294, Student Teaching in Music Education 7-12. These two courses must be taken during the same semester.

Emphasis Areas: B.S.Ed. candidates must complete 30 to 50 hours of specific subject requirements in one of the following fields: English, foreign language (French, German, or Spanish), mathematics, music, unified science (biology, chemistry, or physics endorsement), or social studies. For specific subject requirements see the appropriate department listing in the Arts and Science section of this bulletin: Social Studies requirements are listed below:

Social Studies certification students must complete a major or an equivalent in hours in one of the following disciplines: anthropology, economics, geography, history, political science, psychology, or sociology and meet these minimum social science requirements: American history, 12 hours including History/Sec Ed 257; European or world history, 9 hours including History/Sec Ed 258; United States and/or state government, 6 hours including Political Science/Sec Ed 209; economics, 3 hours; geography, 3 hours; and 2 hours of elective social studies credit. For emphasis area advising see the History Department.

Bachelor of Science in Education: Secondary Education with Emphasis in Business Education

General Education Requirements
B.S.Ed/ degree in Business Education candidates must complete the university general education requirements required by the College of Education and the Missouri Department of elementary and Secondary Education, the requirements for the program and the academic major

Program Requirements
Level I: Exploring Education as a Profession
Tch Ed 210 Introduction to Teaching
Tch Ed 211 Introduction to American Schools
Tch Ed 212 Introduction to Learners and Learning
Level II: Analyzing the Nature and Process of Education
Tch Ed 310, Introduction to Instructional Methods
Tch Ed 312 Psychology of Teaching and Learning
Tch Ed 313 Psychology and Education of Exceptional Individuals
Tch Ed 386 Teaching Reading in the Secondary School Content Area
Level III: Synthesizing Theory and Practice in Education
Sec Ed 2xx Curriculum and Methods of Teaching (specific subject area)
Sec Ed 290 Internship
Sec Ed 291 Student Teaching

Academic major (36 hours required)
These **secondary education (Sec Ed)** courses:
162, Computer Keyboarding and Formatting
261, Methods of Teaching Keyboarding and Formatting
263, Methods of Teaching Accounting
264, Methods of Teaching Basic Business Subjects
***265,** Secretarial Practice
267, The Secondary Business Curriculum
361, Information Processing: Applications and Techniques of Teaching
367, Methods of Teaching Desktop Publishing Concepts and Procedures
plus these **Business Administration** courses:
103, Computers and Information Systems
140, Fundamentals of Financial Accounting
145, Managerial
156, Legal Environment of Business
256, Business Law I
206, Basic Marketing **and**
Econ 51, Principles of Microeconomics
* Majors working toward shorthand certification must take this additional course, and are not required to take BA 206

Attention education majors: Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C-. Grades of C or better are required in all courses in the academic major.
Minimum of 120 hours

Electives
Electives are to be selected only after consulting with a faculty adviser.
Total: 120 hours

B.S. degree in Secondary Education with an Emphasis in Science-Physics

All candidates must enroll in a program that includes levels I, II, and III course work in the College of Education. In addition, students must complete the following Science Core Courses and the courses listed under Physics Endorsement:

Science core courses:
Philosophy 280, Philosophy of Science
Biology
11, Introductory Biology I
12, Introductory Biology II
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
280, or Education 240, Methods of Teaching Science in Secondary Schools
Physics 283, Teaching Intern Seminar
Graduate Studies

Master of Education: Secondary Education

The M.Ed. program in secondary education is flexibly designed to allow for the special interests of teachers, department chairpersons, curriculum workers, instructional supervisors, reading specialists, and those working in adult education. Programs must be planned with advisers and meet the approval of the department, school, and Graduate School.

Degree Requirements for All Secondary Education M. Ed. Students
The minimum 32-hour program for all secondary education majors includes the following requirements:

Core Requirements (9 hours)
Ed Fnd 421, Philosophy of Education
Sec Ed 415, The Secondary School Curriculum
Sec Ed 420, The Improvement of Secondary School Teaching

Exit Requirement (3 hours)
One of the following courses must be taken as part of the last 9 hours in the M.Ed. program in secondary education:

Ed Fnd 422, Analysis of Educational Issues
Sec Ed 416, Curriculum Construction for Secondary Schools

In addition to the above courses, the following is a third exit course option, limited solely to those in the adult education emphasis or business education teaching field:

Adu Ed 490, Internship (in adult education)

Any of the above courses, when not used to meet the exit requirement, may be included as an elective in the program.

Master of Education: Secondary Education with Emphasis in Curriculum and Instruction

The M.Ed. with an emphasis in curriculum and instruction is designed to enable candidates to further their competencies as teachers or curriculum/instructional leaders.

Degree Requirements (32 hours)

1) Core requirements (9 hours as specified above)

2) Curriculum/instruction core (8 hours) Courses are to be selected in consultation with an adviser in the curriculum/instruction field from among the following:

Sec Ed 315, The Middle Level School
Sec Ed 386, Teaching Reading in Secondary School Content Areas
Sec Ed 414, Teaching the Gifted and Talented in Secondary School

Sec Ed 416, Curriculum Construction for Secondary Schools
Sec Ed 422, Individualizing Instruction in Secondary Schools
Phy Ed 462, The Physical Education Curriculum

3) Teaching field core (8 hours)
Courses approved by the Graduate School for M.Ed. programs are to be selected in consultation with an adviser in secondary education.

4) Electives
Additional courses may be taken in the College of Education and/or curriculum and instruction areas to provide a consistent program upon the recommendation of the adviser.

Master of Education: Secondary Education with Emphasis in Adult Education

The M.Ed. with an emphasis in adult education is designed to enable candidates to further their competencies as teachers, administrators, and program planners in various adult education settings through the study of core courses in adult education, plus a minimum of 8 hours of elective work appropriate to the candidates= particular needs. Adult basic education practitioners can complete course requirements for certification within the scope of or independent from the master's degree program.

Degree Requirements (32 hours)

1) Core requirements (9 hours)
A course in educational foundations (3 hours)
A course in curriculum (3 hours)

A course in improvement of instruction (3 hours)

2) Adult education core (8 hours)
Courses are to be selected in consultation with an adviser in the adult education teaching field including but not limited to:
Adu Ed 404, Seminar in Adult Education Research
Adu Ed 410, The Adult Learner
***Ed Adm 480**, Administration of Adult and Community Education
Adu Ed 490, Internship, **or**
Adu Ed 497, Problems in Adult Education

3) Electives
Following is a list of possible elective courses. Other courses may be selected after conferring with an adviser in adult education.

Ed Fnd 421, Philosophy of Education
Sec Ed 415, The Secondary School Curriculum
Sec Ed 420, The Improvement of Secondary School Teaching

4) Exit Requirement (3 hours as specified above)

Total: 32 hours

Adult Basic Education Certification
***Adu Ed 311**, Teaching Basic Reading Skills to Adults
***Ele Ed 445**, Problems of Teaching Arithmetic in the Elementary School, or **Ele Ed 346**, Advanced Methods in Elementary School Mathematics

*Eight semester hours from these six courses, and 3 hours of adult education electives, in addition to Spc Ed 313, Psychology and Education of Exceptional Individuals, are required for five-year certification from the Missouri Department of Elementary and Secondary Education.

Adult Basic Education (ABE) Certification
1) Requirements for two-year teacher's certificate in ABE:
a. A holder of a bachelor's degree from a four-year college or university.
b. Annual attendance at Department of Elementary and Secondary Education (DESE) approved adult basic education teacher certification workshops.

(The two-year ABE certificate may be renewed twice. Requirements for a five-year certificate must be completed by the end of the sixth year.)

2) Requirements for a five-year teacher's certificate in ABE:
a. Hold a bachelor's degree from a four-year college or university.
b. Earn eight semester hours in DESE-approved adult education classes, institutes, or workshops.

(The five-year ABE certificate may be renewed an unlimited number of times by repeating the requirements during the previous five years.)

Note This would provide certification for (1) AEE teachers who are teaching less than half time and/or without a contract and/or not in a public school or an accredited private school and (2) ABE teachers with bachelor's degrees who have experience teaching adult, buts do not have regular teacher certification. Information is available for professional certificates for full-time ABE teachers.

Master of Education: Secondary Education with Emphasis in Reading

The M.Ed. with an emphasis in secondary reading is designed to enable candidates to further their competencies as teachers of reading and to prepare for positions as reading specialists, reading consultants, and/or further graduate study.

Degree requirements (32 hours)

1) Core requirements (9 hours as specified above)

2) Reading core
Required courses in reading should be taken in the following sequence:
Sec Ed 386, Teaching Reading in Secondary School Content Areas
Ele Ed 486, Clinical Diagnosis and Treatment of Reading Disabilities
Ed Rem 422, Individual Assessment of Cognitive Abilities
Ele Ed 493, Clinical Methods in Child Study I
Ele Ed 494, Clinical Methods in Child Study II
Ele Ed 482, Problems and Research in Teaching Elementary School Reading

To complete Missouri reading certification for grades K-12, the following must be taken or have been completed at the undergraduate level. Students should see an adviser.

Spc Ed 315, Speech and Language Problems of Exceptional Children, **or**
Ech Ed 331, Language Acquisition and Development in Early Childhood
Spc Ed 320, Behavior Management
Cns Ed 327, Personal and Professional Development in Counseling
Ed Psy 417, Psychology of the Elementary School Child
Ed Psy 418, The Psychology of Adolescence
3)The same exit requirement exists as outlined above for all students in the master of education degree program in secondary education.

Master of Education: Secondary Education and Certification

The M.Ed. in secondary education requires a minimum of 32 hours of graduate credit. Depending upon the area of secondary school specialization, certification may require from 28 to 36 semester hours of undergraduate course work, making a total of over 60 semester hours of graduate and undergraduate work. Under the combined program up to 15 hours of graduate courses may be substituted for the same number of undergraduate courses. Students seeking such certification must obtain advisement from the office of teacher education, the Department of Educational Studies, and from the appropriate faculty joint appointee in the Department of Educational Studies and respective Arts and Sciences department.

Degree Requirements

Required and recommended courses
1)Professional requirements
Sec Ed 2XX, Curriculum and Methods of Teaching
Sec Ed 213, Techniques of Secondary School Teaching and Field Experience
Sec Ed 290, Secondary School Student Teaching
Sec Ed/A and S Dept., 2XX or 3XX Teaching Intern Seminar (1-3)

2)Certification and M.Ed. requirements
Ed Psy 312, The Psychology of Teaching and Learning
Sec Ed 386, Teaching Reading in Secondary School Content Areas
Ed Psy 418, The Psychology of Adolescence
Spc Ed 412, Psychology of Exceptional Children
Ed Fnd 421, Philosophy of Education
Sec Ed 415, The Secondary School Curriculum

Electives
Selected graduate courses, including at least eight hours in the teaching specialty or in curriculum/instruction.

Career Outlook

Secondary school teaching positions are more plentiful than in the recent past. Most certificated teachers can find jobs if they are willing to go where there are openings.

Teachers of mathematics and the sciences are in extremely high demand. The fields of humanities and social sciences have somewhat better immediate prospects than in the past. The preparation that teacher education graduates receive enables them to do well in service and sales positions. Job opportunities in the educational and training facets of these fields are good.

People with preparation in secondary education, educational technology, adult education, and educational administration find positions in education/training units in businesses, industries, health care organizations, governmental units, community agencies, and service institutions.

School administration opportunities are available to qualified individuals, particularly those who have completed advanced graduate programs. Community education is an expanding field and will need increasing numbers of people with preparation in that specialty.

Special Education (Spc Ed)

Undergraduate Studies

Bachelor of Science in Education: Special Education

General education requirements (46 hours required):

English and Communication (9 hours)
English 10, Composition
Communication 30 or Communication 40
English 210
Mathematics (3 hours)
50, Structure of Mathematical Systems I
Science (8-9 hours)
Biology (Laboratory)
Physical Science (Laboratory)
Humanities (8 hours)
Music 177, An Introduction to Music for the Elementary School Teacher (Recommended) plus two courses from art, music, philosophy, or literature
Social Science (18 hours)
Psych 3, General Psychology
History 3, American Civilization, or
History 4, American Civilization
PolSci 11, Introduction to American Politics
Econ 306, Microeconomics for the School Curriculum
Sociology 10, Introduction to Sociology, or any Anthropology course
Geography 101 or 102

Related Area Requirements (6 hours)
Phy Ed 130, Elements of Health Education
Phy Ed 261, Physical Activity of the Exceptional Learner

Program Requirements (24 hours)

Level I: Exploring Education as a Profession

Tch Ed 210, Introduction to Teaching
Tch Ed 211, Introduction to Schools
Tch Ed 212, Introduction to Learners

Level II: Analyzing the Nature and Process of Education
Tch Ed 310, Introduction to Instructional Methods
Tch Ed 312, Psychology of Teaching and Learning
Tch Ed 313, Psychology and Education of Exceptional Individuals
Tch Ed 315, Literacy Learning and Instruction
Ed Rem 321, Interpretation of Educational Tests and Measurements
Cns Ed 331, Counseling Individuals with Special Needs
Spc Ed 315, Speech and Language Problems of Exceptional Children
Spc Ed 342, Career Education for the Special Needs Individual
Spc Ed 345, Introduction to Mild/Moderate Disabilities

Level III: Synthesizing Theory and Practice in Education

Ele Ed 246, Teaching Mathematics in the Elementary School
Ele Ed 330, Children's Literature and Reading
Ele Ed 336, Teaching Language Arts and Reading, N-9
Ele Ed 342, Teaching Remedial Mathematics
Spc Ed 320, Behavior Management
Ele Ed 389, The Analysis and Correction of Reading
Ele Ed 341, Teaching Science in the Elementary School
Ele Ed 253, Teaching Social Studies in the Elementary School

Must take one or more of following three courses (depending on certification area desired):

Spc Ed 347, Teaching Learners with Learning Disabilities
Spc Ed 350, Teaching Learners with Emotional-Behavioral Disorders
Spc Ed 332, Educating Learners with Developmental Disabilities, Physical or Other Health Impairments

Internship hours are met through special methods courses in Level 3.

Student Teaching
Ele Ed 290, Student Teaching in Elementary Education
Ele Ed 291, Student Teaching in Special Education

Note: Ele Ed 290 and Spc Ed 291 must be taken during the same semester.

Attention education majors: Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C-.

Total: Minimum of 120 hours

Graduate Studies

Master of Education: Special Education

Graduate students should understand that completion of the M.Ed. program in special education does not assure teaching certification. Students seeking the degree and certification should consult with their advisers.

Following is the recommended curriculum for students enrolled in the learning disabilities, mental retardation, behavioral disorders, or early childhood-special education options.

Area of specialization Students are required to complete 9-18 hours from the following areas:

Knowledge base (3-6 hours) **(Spc Ed)**
497, Problems
431, Problems in Mental Retardation
443, Learning Disabilities
450, Introduction to Behavioral Disorders
462, Introduction to Early Childhood-Special Education

Curriculum (3-6 hours) **(Spc Ed)**
415, The Secondary School Curriculum
416, Curriculum Construction for Secondary Schools
Ele Ed 410, Current Research in the Elementary School Curriculum
413, Organizational Foundations for Special Education
421, Prescriptive Teaching of Exceptional Children
430, Education of the Mentally Retarded
444, Education of Children with Learning Disabilities
452, Education of Behaviorally Disordered Children
463, Curriculum, Methods and Materials for Early Childhood-Special Education

Practicum (3-6 hours)
At least **3 hours** must be taken in Spc Ed 492, Practicum in Special Education.

Psychological foundations and human development (3-6 hours) (Ed Psy)
411, Psychology of Education
417, Psychology of the Elementary School Child
Ed Psy 418, The Psychology of Adolescence
412, Psychology of Exceptional Children
416, Current Research in Psychology of Exceptional Children

Educational Research and Evaluation Methods (3-6 hours) (Ed Rem)
330, Educational Statistics
420, Classroom Measurement and Evaluation
421, Educational and Psychological Measurement
422, Individual Assessment of Cognitive Abilities

Electives may be chosen from the courses listed here and from other courses with approval of the adviser and department chairperson.

Career Outlook

The employment outlook for special education teachers continues to be favorable, especially in certain positions. In addition to special classroom teaching, graduates of the area have been employed as resource-room teachers, clinical diagnostic personnel, itinerant teachers, educational resource teachers, consultants, educational therapists, and sheltered workshop evaluators, and in various supervisory and administrative positions in agencies and schools.

In combination with counseling, educational psychology, physical education, or other areas, careers can be planned in such occupations as vocational evaluator, counselor for special-needs individuals, and special physical educators.

Course Descriptions

Courses in this section are grouped as follows: Early Childhood Education (Ech Ed), Educational Foundations (Ed Fnd), Educational Technology (Ed Tec), Elementary Education (Ele Ed), Physical Education (Phy Ed), Secondary Education (Sec Ed), and Special Education (Spc Ed).

Prerequisites may be waived by consent of the department.

Early Childhood Education (Ech Ed)

290 Student Teaching in Early Childhood Education I (6)
Prerequisites: Ed Fnd 111, Psychology 270, Ech Ed 312, Ech Ed 333, Ele Ed 385, Ele Ed 336, Communication 40, English 210, Ed Psy 312, Ele Ed 330, Ele Ed 389, Ech Ed 314; and admission to student teaching. Must be taken with Ech Ed 291, and must immediately precede Ech Ed 291 in the semester. Clinical teaching experience in early childhood education classrooms in the schools under university and school supervision. Required for all majors in early childhood education.

291 Student Teaching in Early Childhood Education II (6)
Prerequisite: Ech Ed 290. Must be taken concurrently with Ech Ed 205 and must follow Ech Ed 290 in the semester. Clinical teaching experience in early childhood education classrooms in the schools under university and school supervision. Assignments will be in different school districts, buildings serving families of different socio-economic and cultural backgrounds, and at different age/grade levels from those of the Ech Ed 290 assignments. Required of all majors in early childhood education.

303 Curriculum and Practice Laboratory: Infant/Toddler (1)
Classroom experience in infant or toddler classrooms under direction of university personnel. Must be taken concurrently with Ech Ed 313, Curriculum and Practice: Infant/Toddler.

304 Curriculum and Practice Laboratory: Preschool (1)
Classroom experience in preschool classrooms under direction of university personnel. Must be taken concurrently with Ech Ed 314, Curriculum and Practice: Preschool.

305 Curriculum and Practice Laboratory: Primary (1)
Classroom experience in primary classrooms under direction of university personnel. Must be taken concurrently with Ech Ed 315, Curriculum and Practice: Primary.

312 Introduction to Early Childhood Education (3)
Prerequisites: Ed Fnd 111 and Ed Psy 312. Study of basic principles underlying good schools for young children. Students will use theoretical base as well as on-site observations to develop an awareness of teaching-learning strategies appropriate for the developmental needs of children from birth through age eight. Scheduling, classroom arrangement, and child management practices will be considered. Throughout the course, students will be expected to begin developing their own philosophy of early childhood education.

313 Curriculum and Practice: Infant/Toddler (2)
Prerequisite: Ech Ed 312. Focuses on planning integrated curriculum for child from birth to 30 months. Includes working with parents and community resources Lab required.

314 Curriculum and Practice: Preschool Education (2)
Prerequisite: Ech Ed 312. Focuses on planning integrated curriculum for the preschool classroom with emphasis on science, social studies, creative activities and technology. Working with parents and parent education emphasized. Lab required.

315 Curriculum and Practice: Primary Education (2)
Prerequisite: Ech Ed 312. Focuses on planning integrated curriculum for the primary classroom with emphasis on science, social studies, creative activities and technology. Working with parents and parent education emphasized. Lab required.

317 Assessing Individual Needs for Early Childhood Instruction (3)
Prerequisites: Ech Ed 312. Techniques of observing children and using assessment instruments to plan an individualized program for early childhood. Practicum experience required.

321 Parent and Community Resources in Early Childhood Education (3)
Prerequisite: Admission to the College of Education or graduate status. Competencies for working with parents and community agencies will be developed through a study of community and community resources. Procedures for parent participation and use of service agencies in the education of all young children, including those with special needs, will be examined.

331 Language Acquisition and Development in Early Childhood (3)
Prerequisite: Ed Psy 312. Development of language and the effects environmental and cultural factors have on the acquisition process. Identification of language problems for purpose of referral. Includes preschool classroom practices to support language development. Practicum experiences included.

332 Early Literacy (3)
Prerequisites: Ech Ed 312 and Ech Ed 331. Study of children as they construct literacy knowledge from birth to early elementary. Development of meaningful and developmentally appropriate activities in which reading and writing are used to support children's skills. Criteria for choosing and assessing literature as a vehicle for literacy for
children from birth to eight will be addressed.

346 The Acquisition of Mathematical Concepts (3)
Prerequisites: Formal admission to the Teacher Education Program, Ed Psy 312, and Math 50. Applications of the major theorists to mathematics reasoning. Content is appropriate for pre-k to third grad learners. Research and its implications for practice in the areas of logical thinking, pre-number ideas, geometry, topology, problem solving and arithmetical operations are considered.

412 Foundations of Early Childhood Education (3)
Prerequisite: A course in child psychology or equivalent. A study of the various types of early childhood programs and the philosophy upon which they are based. Attention will also be directed to the implementation of such programs, problems of parent involvement, and the social environment of the children.

413 The Educational Role of Play (3)
Prerequisite: Ech Ed 312 or equivalent. Emphasizes play as a constructive process with applications to cognitive and social development. Special attention to facilitating play in early childhood classrooms.

415 Organization and Development of Early Childhood Programs (3)
Prerequisites: Ech Ed 312 or equivalent. Strategies for the effective organization and development of programs for children from diverse cultures, ages birth through eight years, will be studied. Research and theory in funding and budgeting, staffing and professional development, selection, development, and assessment of program curriculum will be emphasized. Long-range planning for program stability and involvement in advocacy issues will be covered.

490 Internship (1-10)
Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

497 Problems (1-10)
Prerequisite: Graduate standing. Individual study on topics pertaining to early childhood education.

Educational Foundations (Ed Fnd)

111 The School in Contemporary Society (3)
The introductory course in teacher education. An examination of the organization and purpose of the school in its social setting. Selected representative educational themes and issues will be studied. Required of students admitted to the College of Education. Prerequisite to other professional courses.

330 History of American Education (3)
Prerequisite: A course in American history or consent of instructor. An overview of the evolutionary development of American educational theory and practice from the early colonial period to the present. Attention is also given to selected issues in professional education.

421 Philosophy of Education (3)
A study of the fundamentals of education in the light of modern science and philosophy.

422 Analysis of Educational Issues (3)
Prerequisite: A course in philosophy of education or a course in history of education, or consent of instructor. A critical examination of issues about the elementary and secondary schools. This is done through the analysis of the procedures, resources, and goals that guide school policies and practices.

435 History of Western Education (3)
A course designed to survey the educational development of Western civilization from approximately the eighth century BC until the present. Salient educational theory and practice will be considered in their appropriate social context.

Educational Technology (Ed Tec)

245 Audiovisual Equipment Operation for Classroom Teachers (1)
An entry-level course for all teacher education students. May be taken concurrently with Ed Tec 246. A self-paced, modularized, and criterion referenced course. Students will demonstrate competence in operating standard audiovisual equipment normally found in the schools.

246 Preparation of Inexpensive Materials for the Classroom (1)
An entry-level course for teacher education students. May be taken concurrently with Ed Tec 245. A lecture-demonstration laboratory course in material preparation for classroom use.

247 Integration of Media and Materials in Instructional Planning (1)
Prerequisites: Ed Tec 246, and for secondary Education students, Sec Ed 213. Course concentrates on the integration of media and materials in lesson planning. Through lecture, demonstration, and individualized instruction, the student designs an instructional unit and prepares appropriate material for that unit. Ed Tec 246 must be taken prior to, or concurrently with, this course.

248 Utilization of Computer-Based Materials in Instruction (1)
Utilizing a series of computer-based education modules, the instructional uses of the computer are explained and demonstrated. Students develop practical experience in using and evaluating computer materials for classroom use.

340 Selection and Utilization of Educational Media (3)
Introduction to the selection, use, and evaluation of audiovisual materials and equipment including films, slides, transparencies, projectors, globes, charts, maps, bulletin boards, plus programmed materials, information retrieval systems, and instructional television.

345 Preparation of Graphic Materials for Audiovisual Education (3)
Prerequisite: Ed Tec 340 or consent of instructor. Not open to lower-division students. A lecture-demonstration-laboratory course that emphasizes the graphic arts component of audiovisual material production. Theories of learning and communication are used in the design and production of materials used for classroom settings.

346 Instructional Television (3)
Prerequisite: Ed Tec 340 or consent of instructor. Not open to lower-division students. A lecture-demonstration laboratory course designed to concentrate on the use of instructional television in formal and informal learning situations. Basic script writing, management of ITV systems, and design and production of low-budget programs will be emphasized.

404 Seminar in Educational Technology Research (3)
Prerequisites: Ed Tec 340 and twelve hours of graduate work in educational technology. A review of research in educational technology with individual in-depth study. The student selects a research problem in conjunction with the instructor and completes a review project. Open to graduate students who have completed twelve hours of work in educational technology.

410 Computer-Based Graphics and Text Design and Production (3)
Prerequisite: Education 301 or permission of the instructor. A lecture-demonstration-laboratory course that emphasizes the theoretical and practical design of graphic and textual material through the use of computer-based graphics programs. Emphasis will be placed on the utilization of commercial software to produce graphic designs and desktop publishing projects such as newsletters, workbooks, and other textual materials.

412 Applications of Computers in Education (3)
Prerequisite: Educ 301 or permission of instructor. Uses and capabilities of computers in the teaching, administration, and counseling areas of Education. Familiarization with computing facilities and package programs.

415 Computer-Based Education: Authoring Software I (3)
Prerequisite: Education 301 or permission of the instructor. A lecture-demonstration-laboratory course that emphasizes the theoretical and practical design of computer-based Educational materials. Students will develop practical experience in utilizing programming shells and authoring languages in the development of curricular-based CBE programs.

433 Educational Technology Systems Management (3)
Prerequisite: Ed Tec 340. Basic principles of management in design and operation of media programs and systems in various educational settings. Emphasis on strategies and alternative structures for achieving and evaluating functions of media centers.

435 Diffusion and Adoption of Innovations in Educational Technology (3)
Prerequisite: Ed Tec 340. A lecture course designed to provide an overview of the diffusion and adoption of technical innovations in the Educational system. This course will include the technological, sociological, psychological, and political aspects of the process of diffusion and adoption. Various models, techniques, and applications of the diffusion and adoption process are emphasized.

446 Advanced Instructional Television Production (3)
Prerequisite: Ed Tec 340 and Ed Tec 346. Advanced management, script writing, and production of ITV programs. Laboratory activities in production of systematically designed instruction. Each student will produce ITV programs involving writing, production of graphics, directing, editing, and validating the programs.

452 Educational Multimedia Design (3)
Prerequisite: Ed Tec 340 or consent of instructor. Examines principles and techniques for design of visually and functionally effective multimedia educational resources. Emphasis on techniques for computer-based production of materials incorporating text, graphics, and video. Rapid prototyping and evaluation techniques incorporated.

490 Internship (1-10)
Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

497 Problems (1-10)
Prerequisite: Ed Tec 340 or consent of instructor. Individual study on topics pertaining to educational technology.

Elementary Education (Ele Ed)

82 Effective Reading and Study Skills (2)
Designed to increase reading rate and comprehension and to develop study techniques appropriate to the purpose and difficulty of materials. Use is made of mechanical pacer, comprehension tests, vocabulary materials, and lecture demonstrations. No credit toward a degree.

177 Elementary School Music (2)
Prerequisite: Consent of department. The role of the classroom teacher in the development of the elementary school general music program; selection of music, demonstration and practice of methods, and study of resources. This course will not apply toward requirements for a music major.

179 Art Activities for Elementary Schools (3)
(Same as Art 134.) A study of art principles; provides laboratory experiences with various media and materials. Stresses curriculum planning and developments 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

192 Educational Laboratory/Field Experience (1-3)
A laboratory/field experience requiring systematic observation and/or participation in appropriate educational settings. To precede student teaching. May be repeated to maximum of three hours.

246 Teaching Mathematics in the Elementary School (3)
Prerequisites: Ed Fnd 111, junior standing, and completion of mathematics requirements in general education. Organization and implementation of a modern elementary school mathematics program. A field experience involving several visits to local elementary schools is a required assignment of the course.

253 Teaching of Social Studies in the Elementary School (3)
Prerequisites: Ed Fnd 111, junior standing, and completion of social science requirements in general education. Study of elementary school social studies emphasizing the current social studies curricular content, methods of teaching, and instructional materials. Analysis of forces affecting objectives, materials, and teaching techniques.

277 Curriculum and Methods of Teaching Elementary School Music (3)
(Same as Music Education 257.) 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.

290 Elementary School Student Teaching I (5)
Prerequisites: Ed Fnd 111, Ele Ed 101, Psych 270, Ele Ed 336, Ele Ed 385, Comm 40, English 210, Ed Psy 312, Ele Ed 230, Ele Ed 341, Ele Ed 253, Ele Ed 246, Ele Ed 389, and admission to student teaching. Must be taken with Ele Ed 291, and must immediately precede Ele Ed 291 in the semester. Clinical teaching experience in elementary school classrooms under university and school supervision. Required for all majors in elementary education.

291 Elementary School Student Teaching II (5)
Prerequisite: Ele Ed 290. Must be taken "in block" with Ele Ed 205 and Ele Ed 290, and must immediately follow Ele Ed 290 in the semester. Clinical teaching experience in elementary school classrooms under university and school supervision. Assignments will be in different school districts, buildings serving families of different socio-economic and cultural backgrounds, and at different grade levels from those of the Ele Ed 290 assignments. Required for all majors in elementary education.

310 Elementary School Curriculum (3)
Prerequisites: Ed Fnd 111 and junior standing. Study of modern education with regard to objectives, content, and methods in elementary school curriculum.

316 Middle Level Curriculum and Instruction (3)
Prerequisites: Sec Ed 315. Preparation for teaching and learning in a middle school, grades 5B9. Content focuses on curriculum development, methods, techniques, materials, planning, organization, and assessment in middle level education for early adolescents.

317 The Middle-Level Child(3)
Prerequisite: Sec Ed 315 and Ed Psy 312. Developmental characteristics and needs of early adolescents are studies through field experience in middle school classrooms. The relationship between needs and behavior is explored and skills for effective student teacher relationship are highlighted.

330 Children's Literature and Reading (3)
Prerequisite: Junior standing. A course designed to provide a knowledge of the various types of literature for young people, including books, magazines, comics, television, and films; criteria for evaluating and selecting material; uses of material in the classroom and home; and motivating reading for enjoyment and information, bibliotherapy, and communication.

336 Teaching Language Arts and Reading N-9 (3)
Prerequisites: Six hours of English/Communication; Ed Psy 312. Involves study of methods and materials for implementing a total language arts program, including reading in the elementary school. Emphasis is placed on using the language experience approach in teaching listening, reading, spelling, handwriting, grammar, and spoken or written composition as basic skills.

341 Teaching Science in the Elementary School (3)
Prerequisites: Completion of science requirements in general education, Ed Fnd 111, and upper-level standing. An analysis of teaching science to elementary school children with emphasis on current science education trends, science curricular materials, and strategies of instruction.

342 Teaching Remedial Mathematics (3)
Prerequisite: Ele Ed 246. Methods for diagnosing and remediating mathematical skills and concepts of the special needs learner. Course requires testing and tutoring assignments in area school districts outside of scheduled university class time.

346 Advanced Methods in Elementary School Mathematics (3)
Prerequisites: Ele Ed 246 and consent of instructor. Review, evaluate, develop, and provide classroom trial of instructional components prepared for teaching mathematics. Course will develop greater depth of preparation in: elementary program content; programs for exceptional children; and curricular extensions such as transformational geometry, rational numbers, and intuitive algebra.

387 Language and Literacy Needs of Culturally and Linguistically Diverse Children (3)
Prerequisites: Ed Psy 312 and Reading Methods or equivalent. Analysis of the community and cultural influences on children's language and literacy development, particularly children from culturally diverse settings. Attention to the sociolinquistic and constructivist practices in the teaching of language and literacy. Study of strategies to focus on the efforts of school administrators, faculty, parents, students, and the community on developing language and literacy competence as a primary tool for supporting academic achievement.

389 The Analysis and Correction of Reading Problems in the Classroom (3)
Prerequisites: Ele Ed 385 or Sec Ed 386, or equivalent. Study of causes of reading difficulties and procedures that may be used to analyze and correct them in the group setting. Ten hours of diagnostic tutoring is required.

390 Elementary School Student Teaching III (5)
Prerequisites: Ele Ed 291 or equivalent and admission to student teaching. Clinical teaching experience in elementary school classrooms under university and school supervision with seminar included. For students who wish an additional student teaching experience.

405 Seminar (1-10)

410 Current Research in the Elementary School Curriculum (3)
A systematic examination of research related to elementary school curriculum. Students will be expected to become effective consumers of educational research and to utilize appropriate research findings in their decision-making processes when planning instruction.

411 Curricular Issues in the Elementary School (3)
Prerequisite: Ele Ed 410. Selected contemporary problems which affect elementary classroom decisions. Computer literacy values, meeting individual needs, and dealing with discipline are studied through investigative discussions, reading, and a research paper.

412 Microcomputers in Elementary Education (3)
Focuses on principles and procedures for using microcomputers for instructional and classroom management activities in the elementary classroom.

422 Curriculum Construction in Elementary Schools (3)
Prerequisite: Ele Ed 410. A study of the elementary curriculum with regard to selection of objectives and content and to provisions for curricular change.

423 Curricular Implementation in the Elementary School (3)
Prerequisite: Ele Ed 422. Culminating experience for curricular project in Ele Ed 422. Course will include procedures and techniques for curricular design implementation in the field.

425 Elementary School Supervision (3)
Organized to study such problems in field of supervision as will meet needs of superintendents, principals, and special supervisors.

427 Supervision of Clinical Experiences in Teacher Education (3)
Prerequisite: Teaching experience and consent of instructor. A consideration of the clinical phase of the teacher Education program, with special emphasis on student teaching. Examination of role responsibilities and supervisory practices. Study of professional literature for research findings, theoretical formulation, and recent developments in the field.

430 Problems of Teaching the Language Arts (3)
Procedures used in teaching integrated language arts in elementary schools.

432 Problems and Research in Elementary School Language Arts (3)
Prerequisites: Ele Ed 430, Ed Rem 431, and six hours of English. A systematic study of research in teaching speaking, listening, written composition, handwriting, spelling, and linguistics as it focuses on the problems of teaching these skills in the elementary school. Attention is given to innovations in the field.

436 Children's Literature I: Survey and Analysis (3)
Prerequisite: Ele Ed 330 or equivalent. A survey of children's literature published in the last ten years. Special emphasis will be placed on the relationship between children's literature and contemporary issues of society. Students will experience the materials themselves rather than reading about books. In addition, students will begin to study the literary elements that make literature interesting and meaningful for children.

437 Children's Literature II: Selection and Functions (3)
Prerequisite: Ele Ed 330 or equivalent. A study of literary elements that make literature interesting and meaningful for children will be completed. Further emphasis will focus on the application of trade books for children as resources in school curriculum planning. Children's Literature II may be taken either before or after Children's Literature I.

441 Problems and Research in Teaching Elementary School Science (3)
Prerequisites: Eight hours of science, Ele Ed 341, and Ed Psy 411. A thorough examination of research related to elementary school science instruction with particular emphasis on innovative programs. Includes methods of investigation and techniques for interpreting the professional literature.

443 Teaching Physical Science in the Elementary School (3)
Activity-oriented experiences with basic physical science concepts, laboratory skills, and techniques that are appropriate for elementary school teachers. The physical science concepts in elementary school curricula will be analyzed in depth.

444 Environmental Studies for Elementary Teachers (3)
Activity-oriented training in developing environmental awareness, field and/or laboratory skills and techniques, and the use of elementary environmental curricula. Materials and activities appropriate for one's students and locale will be developed.

445 Problems of Teaching Mathematics in the Elementary School (3)
A study of the mathematics program in the elementary school from the viewpoint of goals, content, techniques, and evaluation.

446 Curriculum and Methods of Teaching Measurement in Mathematics: Metric and Standard Systems (3)
Prerequisite: Ech Ed 346 or Ele Ed 246. Curricular development and implementation on reflecting recent research findings. Content, materials, methods of teaching the general topic: measurement. Applications in both the metric and standard systems.

447 Problems and Research in Teaching Elementary School Mathematics (3)
Prerequisite: Ele Ed 445. A thorough examination of research related to recurrent problems in elementary school mathematics instruction, as well as current problems arising within modern programs. Includes methodology appropriate to investigation of such problems and techniques for assessment of the literature.

448 Diagnosis and Remediation of Disabilities in Learning Mathematics (3)
Prerequisite: Ele Ed 445. Causes of mathematical disabilities. Materials and techniques for diagnoses and corrective programs for children and youth.

450 Problems of Teaching Social Studies in the Elementary School (3)
A classroom-oriented study of curricular and instructional problems encountered in social studies. Emphasis is placed upon development of materials, techniques, and resources.

452 Problems and Research in Teaching Elementary School Social Studies (3)
Prerequisite: Ele Ed 450. An advanced study of pedagogical problems germane to social studies education with particular emphasis on application of research findings to the solution of classroom problems.

482 Problems and Research in Teaching Elementary School Reading (3)
Prerequisite: Ele Ed 385 or equivalent. Systematic study of research as it focuses on the problems of teaching reading in the elementary school. Attention is given to innovations in the field.

484 Developmental Reading (K-13) (3)
Prerequisite: Ele Ed 385 or Sec Ed 386, or equivalent. Designed to update classroom teachers' skills in reading instruction. Study of basic reading instruction at all grade levels with special emphasis on current instruction programs, innovative approaches to reading instruction, basic techniques, commercial reading materials, and recent research findings which have a bearing on methodology.

486 Clinical Diagnosis and Treatment of Reading Disabilities (3)
Prerequisites: A graduate course in reading and in measurement or statistics. Etiology of specific reading disability; procedures that are used to diagnose and treat in the clinical setting.

488 Supervision of School Reading Programs (3)
Prerequisite: Ele Ed 385 or Sec Ed 386. Processes and techniques of developing, evaluating, and/or modifying the reading program in a school or district. The course would enable those seeking positions as consultants, coordinators, and directors of reading to conform with standards specified by the International Reading Association.

490 Internship (1-10)
Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

493 Clinical Methods in Child Study I (3)
Prerequisites: Ele Ed 486 and Ed Rem 422. Clinical experience in diagnosing learning problems, especially reading disability, in school children.

494 Clinical Methods in Child Study II (3)
Prerequisite: Ele Ed 493. Clinical experience in applying remedial procedures to school children with learning problems, especially reading disability.

495 Supervision of Practicum in Clinical Reading (3)
Prerequisites: Ele Ed 385 or Sec Ed 385; Ele Ed 486, Ele Ed 493, Ele Ed 494; and Ed Rem 422. Supervising graduate students in diagnosis and remedial process within the reading clinic.

497 Problems (1-10)
Selected problems to meet the needs of individual students.

Physical Education (Phy Ed)

Prerequisites may be waived by consent of the department or the instructor.

124 Principles and Practice in First Aid and Cardiopulmonary Resuscitation (1)
The course provides theory and supervised practice in first aid and cardiopulmonary resuscitation leading to American Red Cross certification in those areas.

130 Teaching Health in the Elementary School (3)
Prerequisites: Ed Fnd 111 and admission to the College of Education. A study of health programs in the elementary school. Emphasis is given to the teacher's responsibilities in the areas of health services, healthful school environment, and instruction in a comprehensive school health program.

132 Personal Health (3)
A study of factors that contribute to physical and mental well-being at all stages of the life cycle. Particular attention will be given to the identification and analysis of individual health behaviors.

134 Personal Physical Fitness (3)
A study of the relationship between vigorous physical activity and individual well-being. Emphasis will be placed on an individualized analysis of health fitness, resulting in a prescribed program to develop optimal levels of physical fitness, including aerobic fitness, strength, muscular endurance, flexibility, body composition, and lifetime sports considerations.

165 Physical Education Activities in the Elementary School (3)
Objectives of physical education for the elementary school child with applications of choice of activities, organization of program, theory, and practices.

190 Clinical Experience in Physical Gerontology (3)
(Same as Gerontology 190.) Early supervised experience in gerontological physical activity programming. Seminar precedes and accompanies clinical experience.

193 Clinical Experience in Youth Sport Programs (3)
Supervised clinical experience in youth sport programs. Seminar precedes and accompanies clinical experience.

204 Special Topics in Physical Education (1-3)
Prerequisite: Consent of instructor. Independent study through readings, reports, field study, or research.

220 Teaching of Skills: Movement and Rhythms (3)
Prerequisite: Junior Standing and Phy Ed 283. Study of skill analysis and techniques of teaching fundamental movement skills and rhythmical activities. Emphasis will be given to biomechanical analysis of movement ,application of motor learning concepts, and design and preparation of appropriate instructional experience and materials.

221 Teaching of Skills: Dance (3)
Prerequisite: Junior Standing. Study of skill analysis and techniques of teaching dance in school physical education programs. Emphasis will be given to biomechanical analysis of movement, application of motor learning concepts, and design and preparation of appropriate instructional experience and materials. Dance forms studied will be folk, square, ballroom, modern, jazz and creative.

222 Teaching of Skills: Grades PK-4 (4)
Prerequisite: Phy Ed 282 and admission to Teacher Education Program. Study of skill analysis and techniques of teaching developmental games, education gymnastics and perceptual-motor activities. Emphasis will be given to biomechanical analysis of movement, application of motor learning concepts, and design and preparation of appropriate instructional experience and materials.

223 Teaching of Skills: Grades 5-9 (4)
Prerequisite: Junior Standing. Study of skill analysis and techniques of teaching track and field, outdoor education, soccer, softball, flag football, basketball, and volleyball. Emphasis will be given to biomechanical analysis of movement , application of motor learning concepts, and design and preparation of appropriate instructional experience and materials.

224 Teaching of Skills: Grades 9-12 (4)
Prerequisite: Junior Standing. Study of skill analysis and techniques of teaching racquet sports, aquatics, bowling, golf, archery and team handball. Emphasis will be given to biomechanical analysis of movement , application of motor learning concepts, and design and preparation of appropriate instructional experience and materials.

234 Teaching Wellness and Health-Related Fitness (4)
Prerequisite: PHY ED 280 or the equivalent, or consent of the instructor. Study and techniques of teaching wellness and health-related physical fitness concepts across the life span. Evaluation, interpretation, and application of wellness concepts to the individual and groups.

261 Physical Activity for the Exceptional Learner (2)
Prerequisites: Spc Ed 311 and Spc Ed 313. A study of the special physical activity and exercise needs, interests, and problems of the exceptional learner, with considerable emphasis on the development of methods and competencies in modifying physical activities.

267 Performance Analysis in Physical Education (3)
Prerequisite: College-Level Mathematics. A study of quantitative and qualitative approaches, processes and instruments used in assessing student progress in physical education activities. Emphasis will be given to the application of statistical methods to the results of evaluations of human motor performance and the interpretation of those results, as well as to the construction and administration of measurement instruments.

268 Curriculum and Methods of Teaching Physical Education (3)
Prerequisite: Phy Ed 101 or Sec Ed 213. Study of the scope and sequence of the school program in physical education with emphasis on planning processes, content selection, management procedures, instructional strategies, and program assessment.

275 Psychological Aspects of Physical Education (3)
Prerequisites: Psychology 3. A study of the following aspects of psychology as they influence performance in sport and physical activity: learning, retention, transfer, practice, feedback, motivation, anxiety, perception, motor control, social facilitation, cohesion, leadership, and reinforcement.

276 Sociocultural Aspects of Physical Education and Sport (2)
Prerequisite: Junior standing. Study of the theoretical, methodological, experimental, and applied foundations of sport and physical activity programs in society and the schools. Applied issues included cultural, political, economical, legal, and educational aspects of sport and physical activity programs.

277 Historical and Philosophical Foundations of Physical Education and Sport (2)
Prerequisite: Junior Standing. A study of the history of physical education and sport programs, philosophical influences and issues related to the programs and applications of the knowledge base to current programs.

280 Human Anatomy and Physiology (5)
Prerequisite: Phy Ed 280 and Math proficiency. Study of the basic aspects of human anatomy and physiology and their relationship to concepts in sport and physical activity. Two hours of laboratory per week.

282 Physical Growth and Motor Development (3)
Prerequisite: Psychology 270 or Psychology 271. An examination of the physical growth and aging, and motor development of the human being over the life span. Emphasis on evaluative tools, techniques, and studies of research findings. Laboratory field experience for observing individuals. Attention is directed toward acquisition of basic skills, perceptual-motor development, fitness development, and age-related changes in information processing. A required course for physical education majors; an elective course for early childhood, special, and elementary education majors.

283 Kinesiology (3)
Prerequisite: Phy Ed 280. Study of the biomechanics of human motion with particular application to performance in sport activities.

284 Physiology of Human Exercise (3)
Prerequisite: Phy Ed 280. Study of the physiological effects of human exercise, training, and sport activities upon the human body; understanding and evaluation of physical fitness components, with consideration given also to areas including work, fatigue, nutrition, age, sex, and environment.

285 Sports Medicine (3)
Prerequisite: Phy Ed 280 or equivalent. A study of the prevention and care of athletic/sport participation injuries. Emphasis is given to proper conditioning and training of the sport participant and on emergency responses, including CPR certification.

287 Seminar in Exercise Science (3)
Prerequisites: Phy Ed 283, 284, or 285. A review of current topics in the area of exercise science. Focus is on research and practice in various subdisciplines in the field. An emphasis will be placed on application of research to professional situations. Some field experience may be required.

290 Student Teaching in Physical Education: PK-5 (5)
Prerequisites: Admission to Student Teaching. Clinical teaching experience in physical education settings in the schools under university and school supervision. Required for all majors in physical education receiving certification in physical education, Grades PK-5.

291 Student Teaching in Physical Education 5-9 (5)
Prerequisite: Admission to Student Teaching. Clinical teaching experience in physical education settings in the schools under university and school supervision. Required for all majors in physical education, Grades 5-9.

292 Student Teaching in Physical Education: 9-12 (5)
Prerequisite: Admission to Student Teaching. Clinical teaching experience in physical education settings in the schools under university and school supervision. Required for all majors in physical education receiving certification in physical education, Grades 9-12.

312 Management of Sports Programs (3)
Prerequisite: Consent of instructor. A study of administrative theory, roles, responsibilities, and functions in the management of sports programs.

330 Prescribing Physical Activity (3)
(Same as Gerontology 330.) Prerequisite: Phy Ed 280 or consent of instructor. Prescription of physical activity for individualized and group programming based upon physical fitness assessment. Health, nutrition, age, physical fitness, and testing aspects are considered in developing specialized exercise programming based upon current physiological and biomechanical research.

331 Adult Exercise Leadership (3)
Prerequisites: Phy Ed 284 or equivalent. A study of the roles, functions, and skills necessary to become certified as an American College of Sports Medicine Health/Fitness Instructor for adult exercise programs.

340 Community Health Education (3)
Prerequisites: Tch Ed 211 or equivalent, junior or graduate standing, or permission of instructor. Study of community health issues and programs, within the school and the community, including spread and control of communicable diseases. Treatment and prevention programs, community resources, and educational issues for both communicable and chronic diseases will be examined.

348 Teaching Health in the Secondary School: Grades 9-12 (3)
Prerequisites: Tch Ed 211 or equivalent, junior or graduate standing, or permission of instructor. Study of methods of health education in the secondary school. Class will examine instructional program, ways to provide healthful environment in the school, and health services for high school student.

380 Nutrition for Human Performance (3)
A study of human nutrition and its relationship to human performance. Consideration is given to nutrients--function, food source, health concerns and implications, and energy intake and expenditure. Special consideration is given to the following: body composition including weight gain and loss, ergogenic aids, competitive athletes, older adults, children and teens, pregnant women, disease risk, fluid and electrolyte balance, and specific sport activities.

390 Student Teaching in Physical Education III (5)
Prerequisites: Phy Ed 291 or equivalent and admission to student teaching. Clinical teaching experience in physical education settings in the school under university and school supervision with seminar included. For students who wish an additional student teaching experience.

392 Internship in Physical Gerontology (1-10)
Prerequisites: Phy Ed 190 or consent of instructor. (Same as Gerontology 392) Supervised clinical experience in selected gerontological settings as a physical education practitioner under the supervision of university and program professionals. Internship may include two or more separate experiences completed concurrently or sequentially and involve planning of instruction, participant and program evaluation, research, and related activities.

462 The Physical Education Curriculum (3)
Prerequisite: Consent of instructor. A study of current practices, problems, trends, and research involved in the analysis and development of the physical education curriculum. **Teaching and Learning (continued)**

464 Analysis of Teaching in Physical Education (3)
Prerequisite: Consent of instructor. A study of trends and research relating to teaching methodology, teacher effectiveness, and supervision of instruction in physical education. Emphasis will be given to the application of research on teacher effectiveness in the instructional process in physical education.

474 Psychological Dynamics of Sport Performance (3)
Prerequisite: Phy Ed 275 or consent of instructor. Application of specific principles of social psychology to the teaching of physical education and sport and of mental aspects of peak physical performance. Explores the techniques of improving team and individual performance in interscholastic and elite competition through sport psychology. Attention is given to motivation, competitive anxiety, attitude, aggression, team cohesion and leadership, exercise adherence, personality, individual differences, and gender roles as they pertain to sport performance.

475 Motor Learning and Control (3)
Prerequisite: Phy Ed 275 or consent of instructor. Application of specific principles of learning and the control of movement to the teaching of motor skills in physical education and sport. Surveys neurologic systems involved in perception and motor performance. Explores theoretical perspectives, including open versus closed loop control, schema theory, information processing, and dynamical systems theory. Attention is given to efficiency of learning skills by accommodating transfer of training, utilizing feedback, manipulating practice schedules, and promoting retention.

476 Social Inquiry of Sport (3)
Prerequisite: Phy Ed 276 or consent of instructor. A study of basic social processes in sport, such as socialization, social facilitation, and assimilation.

478 Problems and Research in Physical Education (3)
A study of potential research problems and research processes in specific physical education subdisciplines. A research project will be completed in the student's physical education subdiscipline interest area.

482 Life Span Perceptual and Motor Development (3)
Prerequisite: Phy Ed 282 or consent of instructor. A study of sensory and perceptual development and change, and the age-related qualitative and quantitative changes in motor skill. Both current theory and current empirical findings are stressed. Attention is given to methods of structuring learning environments to maximize development. Study is from a life span perspective.

483 Biomechanics of Sport Techniques (3)
Prerequisite: Phy Ed 283 or consent of instructor. A study of the biomechanical concepts important to analysis of techniques used in selected sports. Explores recent research findings on efficient sports techniques. Provides experience in the analysis of skill performance.

484 Physiological Bases of Physical Performance (3)
Prerequisites: Phy Ed 280 and Phy Ed 284 or consent of instructor. Physiological bases and contemporary trends in the study of human performance and exercise stress; will analyze research literature and study experimental strategies with the focus upon application to teaching and coaching.

485 Theory of Exercise and Cardiovascular Disease Risk Factor Management (3)
Prerequisite: Completion of Phy Ed 484 or equivalent. A study of the effects of exercise on the basic epidemiology, physiology, and management of unavoidable and avoidable cardiovascular risk factors. Special attention will be given to the examination of the effect of exercise in the management of cardiovascular disease risk.

490 Internship (1-10)
Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

492 Directed Readings in Curriculum and Instruction (1-6)
Prerequisites: Graduate standing, one graduate course in curriculum and instruction, and consent of instructor. Independent study into the current research, literature, and issues I the areas of physical education and curriculum and instruction.

494 Directed Readings in Motor Behavior (1-6)
Prerequisites: Graduate standing, one graduate course in motor behavior, and consent of instructor. Independent study into the current research, literature, and issues in the area of motor behavior.

497 Problems (1-10)
Prerequisite: Consent of instructor. Selected problems to meet the needs of individual students.

Secondary Education (Sec Ed)

162 Computer Keyboarding and Formatting (3)
Prerequisite: Intermediate typewriting or equivalent. Review of keyboarding techniques and skills; development of speed and accuracy; instruction in the preparation of business and professional papers and forms with emphasis on formatting and information processing skills.

204 Seminar: Business Education Student Teaching (1)
Prerequisites: Completion of all required courses in major and/or certification emphasis area. To be taken concurrently with student teaching. Application of theory, methods, and techniques to the teaching of business subjects in grades 7-12.

208 Mathematics Teaching Intern Seminar (1)
Prerequisite: Concurrent enrollment in Sec Ed 290. A seminar in the integration of mathematics curricula, educational philosophy, teaching strategies, and instructional technology in the classroom setting. To be taken concurrently with Secondary Student Teaching, Sec Ed 290.

209 American Government for the Secondary Classroom (3)
Same as POL SCI 209. Prerequisites: Sec Ed 213 and POL SCI 11, graduate standing or consent of instructor. Adapts the themes and subject matter of American government to the secondary classroom and trains teachers in techniques particularly designed to maximize the use of primary sources, foster critical inquiry, and encourage knowledge of subject matter. Particular emphasis will be placed on defining the broad and connecting themes of American government, on expanding bibliography, and on choosing methods of inquiry for use in an interactive classroom. Either History/Sec Ed 257 or 258 or Political Science/Sec. Ed. 209 must be taken the same semester as History/Sec Ed 255 except with special consent of the Social Studies Coordinator. Can be counted towards the Political Science major requirement, but not the American Politics subgroup. Counts towards Social Studies Certification.

213 Techniques of Secondary School Teaching and Field Experience (4)
Prerequisites: Ed Fnd 111 and admission to the teacher education program. Activities and interaction of teachers and students in secondary schools. Included also is an analysis of teaching, learning, and field observations in secondary classrooms. Recommended that Sec Ed 213 be taken during the first semester of the junior year prior to special methods courses.

232 The Curriculum and Methods of Teaching English (3)
(Same as English 262.) 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.

240 Curriculum and Methods of Teaching Physical Sciences (3)
(Same as Chemistry 280 and Physics 280.) Prerequisite: 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.

246 The Curriculum and Methods of Teaching Mathematics (3)
Prerequisites: Sec Ed 213 and a near major in the subject matter. A study of the scope and sequence of the mathematics 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 mathematics. To be taken prior to student teaching. This course must be completed in residence.

255 The Curriculum and Methods of Teaching History and Social Studies (3)
(Same as History 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 History 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)
(Same as History 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. Cannot be counted towards the 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 Classroom (3)
Prerequisite: (Same as History 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. 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.

261 Methods of Teaching Keyboarding and Formatting (3)
Prerequisite: Intermediate Typewriting or equivalent. Instruction in the methods and techniques used to teach keyboarding and document formatting.

263 Methods of Teaching Accounting (3)
Prerequisites: BA 140, BA 145, or equivalent. Methods and techniques of teaching data processing and accounting in the secondary schools.

264 Methods of Teaching Basic Business Subjects (3)
Prerequisites: Econ 51 or equivalent, BA 206 and/or BA 256. Methods and techniques of teaching basic business, business law, economics, consumer economics, and business principles and management in the secondary school curriculum.

267 The Secondary Business Curriculum (3)
Prerequisite: Ed Fnd 111 or equivalent or consent of instructor. Study of the scope and sequence of business education courses in the high school curriculum. Attention is directed toward the history of business education, curricular change, standards, evaluation, and research in the field of business education.

270 English Student Teaching Seminar (1)
(Same as English 270.) Prerequisite: 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 291.

273 The Curriculum and Methods of Teaching Art (3)
Prerequisites: Sec Ed 213 and a near major in the subject matter. A study of the scope and sequence of art 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 art. To be taken concurrently with student teaching.

274 Curriculum and Methods of Teaching Foreign Language (3)
(Same as FLL 264.) Prerequisites: Sec Ed 213 and passing the departmental language skill 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 language. To be taken prior to student teaching. This course must be completed in residence.

275 Philosophic and Practical Foundations of the Secondary Music Education Curriculum (1)
(Same as Music 267.) Prerequisites: Music 131, Music 257/Ele Ed 277,and Ed Fnd 111; concurrent registration in Music 261, Music 268/Sec Ed 276 or Music 269/Sec Ed 277 and Music 270/Sec 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.

276 Curriculum and Methods of Teaching Instrumental Music I (2)
(Same as Music 268.) 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.

277 Curriculum and Methods of Teaching Middle School/Junior High School General Music (2) Prerequisites: Music 131, Music 257/Ele Ed 277, and Ed Fnd 111. (Same as Music 269.) 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.

278 Curriculum and Methods of Teaching Instrumental Music II (2)
Prerequisites: Music 131, 152a, 162, Music 257/Ele Ed 277, Music 268/Sec Ed 276, Ed Fnd 111, three of the following: Music 25, 26, 27, 28. (Same as Music 270.) 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.

279 Curriculum and Methods of Teaching Secondary Choral Music (2)
(Same as Music 271.) Prerequisites: Music 131, Music 257/Ele Ed 277,and Ed Fnd 111; concurrent registration in Music 261, Music 267/Sec Ed 275, 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 residence.

285 Curriculum and Methods of Teaching Life Sciences (4)
(Same as Biology 285.) Prerequisites: Sec Ed 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.

286 Laboratory in Teaching Life Sciences (2)
(Same as Biology 286.) Prerequisite: Sec Ed 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/Sec Ed 285.

290 Secondary School Student Teaching (12)
Prerequisites: Sec Ed 213 and admission to student teaching. Clinical teaching experience in secondary school classrooms under university and school supervision. To be taken after appropriate curriculum and methods course.

293 Student Teaching in Music Education, K-6 (5)
Prerequisites: Ele Ed 210, Sec Ed 213, Music 257/Ele Ed 277, Music 267/Sec Ed 275, Music 118, Music 268/Sec Ed 276, Music 270/Sec Ed 278 (instrumental emphasis majors); Music 120, Music 269/Sec Ed 277, Music 271/Sec Ed 279 (Choral/vocal emphasis majors); and admission to student teaching. Must be taken "in block" with Sec Ed 294 and must immediately precede it in the semester. Clinical teaching experience in music education settings in the schools under university and school supervision with seminar included. Required of all majors in music education.

294 Student Teaching in Music Education, 7-12 (5)
Prerequisite: Sec Ed 293. Must be taken "in block" with Sec Ed 293 and must immediately follow it in the semester. Clinical teaching experience in music education settings in the schools under university and school supervision with seminar included. Assignments will be in different settings from those of Sec Ed 293. Required of all majors in music education.

305 Writing for Teachers (3)
(Same as English 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.

315 The Middle Level School (3)
Prerequisites: Ed Fnd 111 or equivalent and admission to teacher education program. An in-depth study of the philosophical and historical bases of the goals and organization of middle level schools, including a review of research as the bases for current trends and practices.

360 Administration and Supervision of Office Personnel (3)
Prerequisite: Consent of instructor. An advanced course in office administration and supervision designed to meet the needs of business personnel involved in administrative office management work; emphasis on updating leadership and human relations skills, organizing, planning, controlling office services, and business data processing systems.

361 Information Processing: Applications and Techniques of Teaching (3)
Prerequisite: Sec Ed 162, Sec Ed 261, or equivalent, or consent of instructor. The course will focus on the needs of preservice and in-service teachers who instruct courses in information processing. Special emphasis placed on organizing and managing an information processing lab, software applications, integration of information processing concepts into existing courses, teaching strategies, and current information processing research.

362 Teaching Alpha Writing Systems: Theory and Application (3)
Prerequisite: Consent of instructor. A study of alphabetic shorthand writing systems. Instruction in the theory and application of alpha writing systems. Emphasis on teaching techniques, learning activities, evaluation, testing, and current research.

367 Methods of Teaching Desktop Publishing Concepts and Procedures (3)
Prerequisite: Sec Ed 162; Sec Ed 261 or consent of instructor. This course will focus on the integration of text and graphics using graphic design and electronic page assembly with a microcomputer-based system. Special emphasis placed on Desktop Publishing concepts, methods, and techniques. Attention is directed toward teaching techniques, learning activities, evaluation and current research.

374 Foreign Language Teaching Seminar (2)
(Same as FLL 364.) 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 Sec Ed 274, Curriculum and Methods, with an emphasis on specific practical skills. To be taken concurrently with Sec Ed 290, Student Teaching.

386 Teaching Reading in Secondary School Content Areas (3)
Prerequisite: Ed Fnd 111 or equivalent. Methods and materials for improving reading and study strategies in content area classes in upper grades.

391 Field Study in Secondary Education (1-10)
Identification of specific problems in the area of secondary education. Course is conducted as a field study in the public schools. A maximum of 8 credit hours may be applied toward an advanced degree contingent upon adviser approval.

393 Student Teaching in Music Education, K-12 (5)
Prerequisite: Sec Ed 294 or equivalent and admission to student teaching. Clinical teaching experience in music Education settings in the schools under university and school supervision with seminar included. For students who wish an additional student teaching experience.

399 Science Teaching Intern Seminar (3)
(Same as Biology 399.) Prerequisites: Sec Ed 285 and Sec Ed 286. Addresses the application of educational philosophy, science curriculum, teaching strategies, and instructional technology in the classroom setting. Offered concurrently with Secondary School Student Teaching, Sec Ed 290.

404 Seminar (1-10)

413 Secondary Teaching with Microcomputers (3)
Prerequisite: Educ 301 or consent of instructor. A course designed for teachers, department heads, and school administrators. Research and theory on microcomputer-assisted instruction as a teaching method in the secondary schools will be presented. Both hardware and software suitable for microcomputers will be used and analyzed.

414 Teaching the Gifted/Talented Student in Secondary School (3)
A survey of research and theory on teaching the gifted/talented student in secondary school. Ways to identify the gifted/talented with emphasis on teaching the gifted/talented in both heterogenous and homogenous secondary classrooms. Models of gifted/talented programs in a school setting.

415 The Secondary School Curriculum (3)
For secondary school principals, teachers, and superintendents. Present methods in curricular change and methods of curricular investigation.

416 Curriculum Construction for Secondary Schools (3)
Prerequisite: Sec Ed 415 or consent of instructor. Designed for those engaged in curriculum revision work and construction of new secondary school courses.

420 The Improvement of Secondary School Teaching (3)
For secondary school teachers, principals, and superintendents with considerable training in education and experience in teaching. Recent developments in secondary school teaching.

422 Individualizing Instruction in Secondary Schools (3)
This course surveys a variety of theoretical models and research findings related to individualized instruction in the secondary school and is designed for teaching and administrative personnel.

427 Supervision of Clinical Experiences in Teacher Education (3)
Prerequisites: Teaching experience and consent of instructor. A consideration of the clinical phase of the teacher education program, with special emphasis on student teaching. Examination of role responsibilities and supervisory practices. Study of professional literature for research findings, theoretical formulations, and recent developments in the field.

429 The Department Head (3)
This course emphasizes the role of the department chairperson as an educational leader. Theoretical concepts are related to sound practice. The potential for the job is discussed, as well as the roadblocks to successful execution. Appropriate for practicing department chairpersons, school administrators, or classroom teachers interested in acquainting themselves with this position.

430 Problems of Teaching English in the Secondary School (3)
A review of recent developments in the teaching of secondary English. Special attention is given to research involving instructional problems in urban and suburban schools. The course is designed for teachers, department heads, and supervisors in secondary English programs.

436 Gateway Writing Project (1-6)
(Same as English 490.) 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' experience 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.

452 Problems of Teaching Social Studies in the Secondary Schools (3)
A review of recent developments in the teaching of secondary school social studies. Special attention is given to research and scholarship involving instructional and curricular problems, especially in the metropolitan St. Louis area. Emphasis is placed upon development of effective materials, techniques, and resources. The course is designed primarily for teachers and supervisors in secondary school social studies programs.

486 Techniques in Teaching Biology for Graduate Students (2)
(Same as Biology 486.) Prerequisites: 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 interactions. Recommended for all graduate students with teaching assistantships.

490 Internship (1-10)
Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

497 Problems (1-10)

Special Education (Spc Ed)

192 Field Experience in Special Education (3)
Intensive early field experience involving on-site observation and limited participation with exceptional individuals in schools and/or other Educational agencies. This course is open to all students.

242 Characteristics of Learning Disabilities (3)
A study of the divergent characteristics of childrer with perceptual impairments. This course consists of fifteen half-hour tapes, designed to offer instruction at an undergraduate level on the nature of children with learning disabilities, and the roles of educators, parents, and auxiliary personnel in diagnosis and remediation. Historical perspectives and future trends will be explored. The tapes are followed by student contact with the instructor, for discussion, work evaluation, and testing.

290 Student Teaching in Special Education I (5)
Prerequisites: Spc Ed 313, Spc Ed 320, Spc Ed 332 and admission to student teaching. Must be taken with Spc Ed 291 and must immediately precede Spc Ed 291 in the semester. Clinical teaching experience in special education classrooms in schools under university and school supervision. Required of all majors in special education.

291 Student Teaching in Special Education II (5)
Prerequisite: Spc Ed 290. Must be taken with Spc Ed 290, and must immediately follow Spc Ed 290 in the semester. Clinical teaching in special education classrooms in schools under university and school supervision. Assignments will be in different school districts, buildings, serving families of different socioeconomic and cultural backgrounds, and at different grade levels from those of the Spc Ed 290 assignments. Required of all majors in special education.

311 Sex Education for Exceptional Individuals (3)
Prerequisite: Consent of instructor. Course is designed to give teachers a thorough knowledge and understanding of the issues, problems, teaching techniques, and the current curricular resources of teaching sex education to handicapped individuals.

313 The Psychology and Education of Exceptional Individuals (3)
Prerequisite: Psychology 270 or Psychology 271 or equivalent. The psychology and education of individuals with special problems and/or abilities. Survey of theories and strategies for the learning- teaching process and of sources of assistance to educators and parents. Required in certification programs.

315 Speech and Language Problems of Exceptional Children (3)
Prerequisites: Ed Fnd 111, Spc Ed 313, and admission to the College of Education. Study of the problems associated with speech and language development and the techniques employed by classroom teachers to lessen these problems for children. Required for all majors in special education.

320 Behavior Management (3)
Prerequisites: Spc Ed 313 and an appropriate introductory course in the special education area of concentration. An in-depth exploration of various behavior control techniques that are particularly applicable to exceptional children. Students will be required to conduct at least one behavior modification project with exceptional children.

322 Inclusive Education: Theory and Practice (3)
Prerequisite: Spc Ed/Tch Ed 313 or Spc Ed 416, or equivalent. This course for general and special educators focuses on current theory, research, and practice of inclusion of students with disabilities in general education classrooms. Topics include instructional strategies, adaptations of curriculum, facilitation of friendship development and social support, consultation and collaboration with other professionals, and working with parents.

330 Introduction to Mental Retardation and Severe Handicapped (3)
Prerequisite: Spc Ed 313. An introductory course describing characteristics, classification, and causes of mental retardation and severe handicapped.

332 Educating Learners with Developmental Disabilities, Physical or other Health Impairments (3)
Prerequisites: Tch Ed 211, Spc Ed 313, and Spc Ed 345. Methods and techniques for educating learners with developmental disabilities, physical or other health impairments. Required of all who are preparing for certification in special education with endorsement in Developmental Disabilities or Cross-Categorical.

342 Career Education for the Special Needs Individual (3)
Prerequisite: Consent of instructor. This course is intended to provide information to teachers and other personnel charged with the responsibility of delivering career development services to special needs clientele. Topics including designing a K-12 career education curricula, techniques of improving job readiness for the unemployed and underemployed, and ways to utilize community employment resources for the handicapped.

345 Introduction to Emotional Disturbances and Learning Disabilities (3)
Prerequisite: Spc Ed 313. A comparative approach to these two areas of specialization regarding their history, etiologies, definition, prevalence, and service delivery systems.

347 Teaching Learners with Learning Disabilities (3)
Prerequisites: Spc Ed 313 and Spc Ed 345. Application of instructional techniques for learners with learning disabilities, including assessment for instruction, interdisciplinary teamwork, parental involvement, individualized education plans, and classroom techniques. Required for certification in special education of learners with learning disabilities or cross-categorical.

350 Teaching Learners with Emotional/Behavioral Disorders (3)
Prerequisites: Spc Ed 313 and Spc Ed 345. A course designed to instruct students in the management and instructional strategies necessary to the education of learners with emotional/behavioral disorders or cross-categorical.

370 Sensory-Motor Development of the Severely Handicapped (3)
Prerequisite: Spc Ed 330 or equivalent or consent of instructor. An examination of basic sensory-motor development and associated disorders to enable teachers to work more effectively with occupational and physical therapists. Basic techniques used by therapists are presented together with an exploration of the teacher's role regarding sensory-motor programming. Required for certification for teaching individuals with severe handicaps.

371 Methods and Curricula for Severely Handicapped (3)
Prerequisite: Spc Ed 370 or consent of instructor. This course begins with the application of the clinical teaching model to the severely handicapped population regarding objectives, training methods, and program process monitoring. It also includes critical analysis of existing curricula and methods of classroom or living unit organization. Required for certification in Severe Handicapped.

372 Screening and Diagnosis of the Developmentally Delayed (3)
Prerequisites: Ed Rem 310 or equivalent and Spc Ed 313. This course addresses the content, techniques, and special problems related to the assessment of handicapped individuals in the birth-to-five developmental range. Students gain experience in construction, administration, and interpretation of assessment tools used with low functioning handicapped individuals. Required for certification in Severe Handicapped and Early Childhood-Special Education.

382 An Introduction to Gifted Children (3)
Prerequisite: Spc Ed 313. This course provides an introduction to gifted children. Their characteristics, cognitive abilities, special abilities, and creativity will be reviewed. Current problems, research, and issues concerning the gifted are covered.

384 The Education of Gifted Children (3)
Prerequisite: Spc Ed 313. This course deals with methods, techniques, and curricular modifications necessary for the effective education of gifted children.

390 Student Teaching in Special Education III (5)
Prerequisites: Spc Ed 291 or equivalent and admission to student teaching. Clinical teaching experience in special education classrooms in schools under university and school supervision with seminar included. For students who wish an additional student teaching experience.

405 Introduction to Braille (4)
Braille reading and writing of standard English Grade 2 braille and braille mathematics will be introduced. Information on transcribing printed matter into braille and the use of writing devices and technical aids will be presented. The objectives of this class will be met over two semesters due to the large amount of information and high level of proficiency required. A literary braille test and transcription test must be passed at the end of the course.

412 Psychology of Exceptional Children (3)
An in-depth analysis of the unique psychological problems of exceptional children and youth. Current psychological theories and research emphasized.

413 Organizational Foundations for Special Education (3)
Prerequisite: Spc Ed 313 or equivalent. A study of organizational issues in special education and implications for practices and procedures. Specific attention will be given to special education delivery systems, compliance standards, funding sources, and regulatory standards.

416 Current Research in Psychology of Learners with Disabilities (3)
Prerequisite: Consent of instructor/adviser. Study of current trends, issues, and research in special education. Areas of investigation focus on major developments in disabilities, situations related to programming for projected needs, and considerations and utilization techniques with learners with disabilities. Students should have experience or an undergraduate background in the education of learners with disabilities prior to enrolling in this course.

421 Prescriptive Teaching of Learners with Disabilities (3)
Prerequisite: Spc Ed 313 or equivalent. Course will instruct students on how to develop and implement prescriptive educational programs for learners with disabilities. Students will become familiar with prescriptive systems which will enable them to use various sources of information in response to learner remedial and developmental needs.

430 Introduction to Developmental Disabilities (3)
Prerequisite: Spc Ed 313 or equivalent. An advanced study of the theoretical and methodological problems related to developmental disabilities. Particular emphasis on the application of current research findings to the problems confronting learners with developmental disabilities.

431 Education of Learners with Developmental Disabilities (3)
Prerequisite: Spc Ed 430. A systematic study of current educational practices and procedures for the education of learners with developmental disabilities. Methods and materials are stressed.

443 Introduction to Learning Disabilities (3)
Prerequisite: Spc Ed 313 or equivalent. Advanced study of the theoretical and methodological problems related to learning disabilities. Particular emphasis on the application of current research findings to the problems confronting learners with disabilities.

444 Education of Learners with Learning Disabilities (3)
Prerequisite: Spc Ed 443. Systematic study of current educational practices and procedures for the education of learners with learning disabilities. Methods and materials are stressed.

450 Introduction to Emotional/Behavioral Disorders (3)
Prerequisite: Spc Ed 313 or equivalent. Advanced study of the problems and characteristics of learners with emotional/behavioral disorders. Particular emphasis on the application of current research findings to problems confronting learners with emotional/behavioral disorders.

452 Education of Learners with Emotional/Behavioral Disorders (3)
Prerequisite: Spc Ed 450. Systematic study of current educational practices for learners with emotional/behavioral disorders. Methods and materials are stressed.

462 Introduction to Early Childhood Special Education (3)
Prerequisite: Spc Ed 313 or equivalent. A study of issues and concepts central to special Education of young children with disabilities, and at-risk for disabilities, and their families. Focus on program models, screening and assessment procedures, and curriculum concepts. An ecological perspective is emphasized.

463 Curriculum, Methods, and Materials for Early Childhood Special Education (3)
Prerequisites: Spc Ed 462. In-depth study of integrated assessment-based curriculum development for learners in early childhood special education. Emphasis on individualized educational planning and implementation for learners and their families.

481 Introduction to Orientation and Mobility (3)
Prerequisites: Spc Ed 366. This course is an introduction to the principles of orientation and mobility and is designed to acquaint the student with the effects of visual impairment on spatial orientation and movement within the environment. Topics will include instructional strategies for developing prerequisite concepts, basic travel techniques, structuring the classroom environment, low vision orientation and mobility, and orientation and mobility devices for individuals who are visually impaired.

483 Instructional Strategies and Technology for Students with Visual Impairment (4)
Prerequisites: Spc Ed 366. This course focuses on meeting the instructional needs of visually impaired and blind elementary and secondary students through the use of curricula adaptations and technology. Topics include designing and implementing instructional plans to teach keyboarding skill, math, science, and social studies; listening and recording devices; transition; and the use of computers with students who are visually impaired. The objectives of this class will be met through in class, lab, and out of class activities. Students will be expected to have an ongoing interaction with students who are visually impaired through directed experiences.

490 Internship (1-10)
Prerequisite: Consent of instructor/adviser. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship includes planning, research, evaluation, and related professional activities.

492 Practicum in Special Education (3-6)
Prerequisite: Two courses in area of concentration (developmental disabilities, early childhood special education, emotional/behavioral disorders, or learning disabilities). Supervised experience in the education of learners with disabilities in a school or other appropriate setting.

493 Practicum with Students with Visual Impairment (6)
Prerequisites: Spc Ed 366, 405, 481, 482, 483 and all required course work for certification for Teachers of Blind and Partially Sighted Students. This practicum focuses on the techniques and materials necessary to education students who are visually impaired and on procedures for evaluating their effectiveness. This supervised practicum involves both field placement and classroom instruction. It is limited to advanced students in the area of Blind and Partially Sighted.

497 Problems (1-10)
Prerequisite: Spc Ed 313 or equivalent and consent of instructor. Investigation of a selected problem related to the education of learners with disabilities. To be conducted under the direction of a graduate faculty member.

Teacher Education (Tch Ed)

210 Introduction to Teaching (3)
Explores the multiple roles and functions of professional teaching including: communication, leadership, management skills, use of technology, and identification of needs of diverse populations. Portfolio preparation will be introduced. Fourteen clock hours of classroom observation are required.

211 Introduction to American Schools (3)
One of three introductory, prerequisite courses to the Teacher Education Program. An examination of selected concepts and principles underlying American public education. Required field experience of eight clock hours complements class assignments.

212 Introduction to Learners and Learning (3)
Prerequisites: Psych 3. (Same as Ed Psy 212.) Foundational study of the development of infants, children and adolescents focusing o the role of appropriate educational environments in fostering positive physical, cognitive, social and moral outcomes. Reading relevant research will be combined with experiences in the field and technology-based assignments to investigate both biological and sociocultural forces that shape the development process.

310 Introduction to Instructional Methods (3)
Prerequisites: Tch Ed 210, 211, 212, or equivalent and admission to Teacher Education Program. Beginning methods course for K-12 teachers. Skill development in planning instruction, selecting content, use of various teaching methods, designing assessment, developing classroom climate and management strategies. Participation in professional development through observing students in a school setting, micro-teaching, using educational technology, and portfolio development. Ten hours per semester of field experiences required.

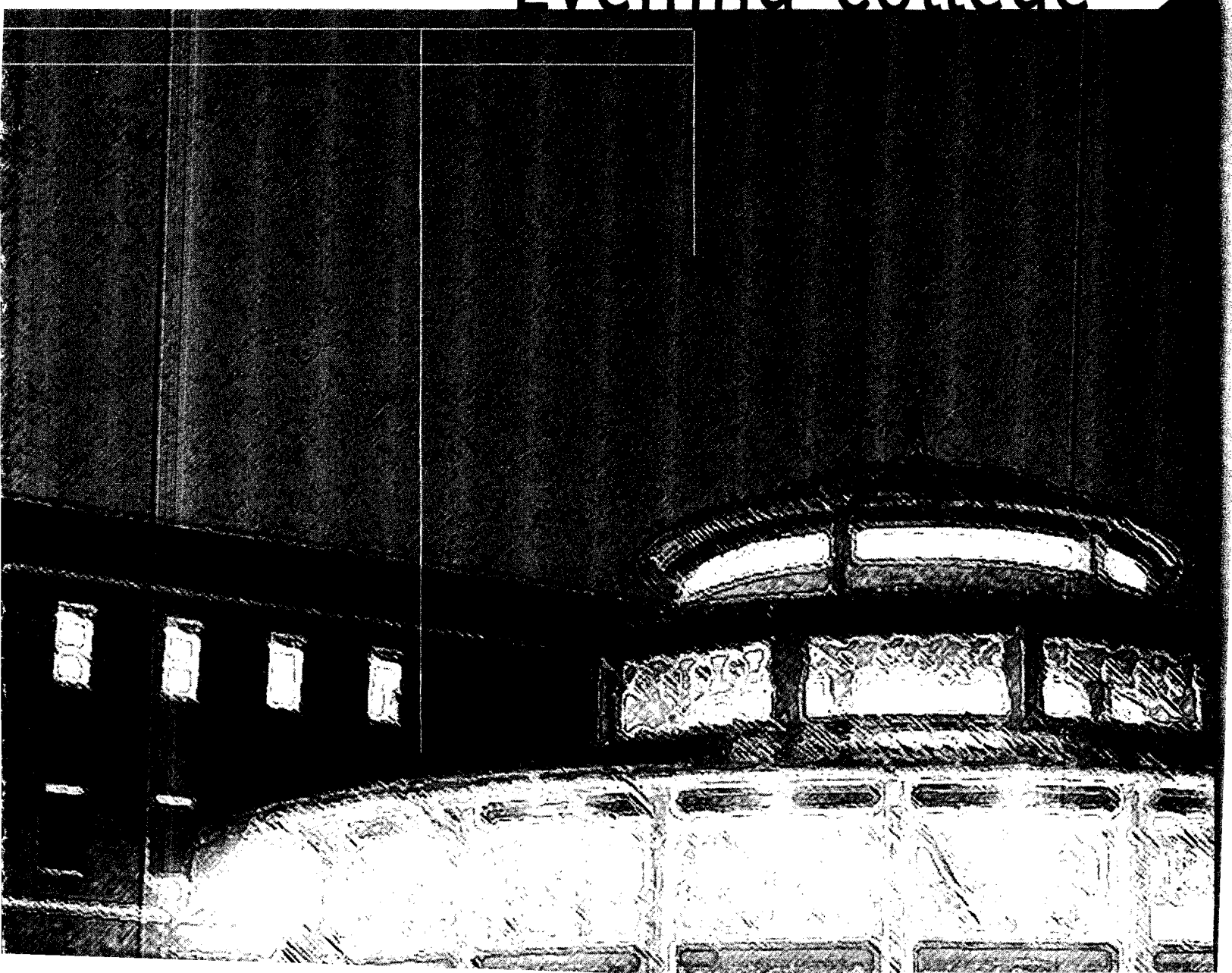
312 The Psychology of Teaching and Learning (3)
Prerequisites: Tch Ed 210, Tch Ed 211, Tch Ed 212 or equivalents and admission to Teacher Education program. (Same as Ed Psy 312.) Application of the principles of psychology to an understanding of the dynamics of teaching behavior and learning behavior. Involves both theoretical and practical approaches to analysis of the learning environment of the school. Required of all who are preparing to teach.

313 The Psychology and Education of Exceptional Individuals (3)
Prerequisites: Tch Ed 210, 211, 212 or equivalent, and admission to Teacher Education program. (Same as Spc Ed 313.) Provides overview of special education, including terminology, educational definitions, characteristics of students with special needs, and legislation related to exceptional individuals. Issues related to education of these students, including early intervention, inclusion, multicultural influences, and transition services. Required in certification process.

315 Literacy Learning and Instruction (3)
Prerequisites: Admission to the Teacher Educatior program. May take concurrently with Tch Ed 312 and Tch Ed 313 or equivalents; may not be taken before Tch Ed 312 and Tch Ed 313 or equivalents. .Methods, materials, frameworks, and technology for the effective teaching of literacy to young children, children with special needs, and children in elementary education settings. Emphasis on role of language experience, phonics, semantics, syntactics, pragmatics, schema theory, and metacognition in literacy development. Observation, assessing children's literacy interests and development, and teaching lessons in a school classroom setting are required.

454 Cultural Diversity in Teaching (3)
Prerequisite: Graduate standing. An advanced study, application, and discussion of pedagogical issues associated with cultural diversity and human origin. The course will emphasize application of research in order to help teachers develop effective strategies for preparing teachers to integrate.

Evening College



Administration

Everette E. Nance, Associate Professor, Dean
Ed.D., Western Michigan University
Lawrence D. Friedman, Associate Professor, Associate Dean
Ph.D., University of Wisconsin

General Information

The Evening College provides undergraduate degree programs for students who, for various reasons, choose to attend evening classes. Thirty-one degree programs are offered through the Evening College. Courses needed as prerequisites for graduate programs are available. In addition, persons who want to maintain their professional competence or broaden their educational background without pursuing degree work will find a broad array of courses which may be taken for credit or on an audit basis.

Recognizing the value of continuing education and career advancement, many St. Louis institutions, businesses, and industries encourage their employees to avail themselves of the educational opportunities offered by the Evening College. The Veterans Administration has approved either full-time or part-time study for educational benefits.

Since most Evening College students are employed full time, they normally carry less than a full academic load. To enable students to carry as many courses as they wish, the Evening College schedules classes after 5 p.m. and limited offerings on Saturday mornings. Classes and degree programs are conducted according to the same standards as the day program.

Course Areas The Evening College offers courses in the following areas: anthropology, art, astronomy, biology, business administration, chemistry, communication, computer science, criminology and criminal justice, economics, education, English, French, geography, geology, German, history, mathematics, music, philosophy, physics, political science, psychology, sociology, social work, and Spanish.

Academic Advising and Program Planning
New students are encouraged to consult with an academic adviser to develop programs appropriate to their needs. Appointments may be made with an academic adviser by calling or stopping by the University Advising Center, 225 Millennium Student Center, (314)516-5161. All students may come to the University Advising Center for advising, see a faculty adviser in their departmen, or see a professional adviser in their college, school or professional school.

Facilities The facilities of the University of Missouri-St. Louis, including the computer center, library, laboratories, cafeteria, cashiers, bookstore, financial aid, health service, and admissions office, are open in the evening. Evening College students are also eligible to participate in any of the university sports programs that interest them. The athletic facilities of the Mark Twain Building are available.

Alpha Sigma Lambda The Beta Epsilon Chapter of Alpha Sigma Lambda is a national honorary scholastic society for Evening College students. To be eligible for membership, a student must have completed at least four semesters of college or university work, completed a minimum of 24 semester hours in the Evening College, have a cumulative grade point average of 3.2, and be enrolled in the Evening College.

Degree Programs

General Education Requirements All candidates for a degree through the Evening College must meet the university general education requirements.

Bachelor of Arts Majors available for the B.A. degree are biology, chemistry, communication, economics, English, history, mathematics, physics, political science, psychology, and sociology. For further information, consult the appropriate departmental section of the College of Arts and Sciences portion of this *Bulletin.*

Bachelor of Science The B.S. degree is available in applied mathematics, biology, chemistry, computer science, criminology and criminal justice, economics, mathematics, physics, and sociology. For further information, consult the appropriate departmental section of the College of Arts and Sciences portion of this *Bulletin.*

Specialized Bachelor's Degrees Also available are the bachelor of science in accounting (B.S.A.), bachelor of science in business administration (B.S.B.A.), the bachelor of science in management information systems (B.S.M.I.S.), the bachelor of science in education (B.S.Ed.), and the bachelor of science in public policy and administration (B.S.P.A.). The B.S. in education offers specialization in any of the following: early childhood education, elementary education, middle school/junior high school, special education, and secondary education. Students should consult the appropriate departmental section of the College of Arts and Sciences, the College of Business Administration, or the College of Education of this *Bulletin.*

Bachelor of Social Work The B.S.W. degree program is designed to prepare persons for employment in social welfare agencies, schools, hospitals, correctional institutions, or day care, geriatric, or rehabilitation centers. Individuals currently working in social welfare settings can improve their skills or increase their opportunities for job advancement. For further information, consult the Social Work section of this *Bulletin.*

The **Bachelor of General Studies** degree (B.G.S.) is also offered through the Evening College. It is designed to provide mature students with a meaningful alternative to traditional degree programs. It appeals to a variety of students whose circumstances, goals, and aspirations are different from those of the "typical" college student. The B.G.S. program provides the flexibility needed to enable students, with careful advisement, to develop individualized programs of study.

Admission Requirements for the B.G.S. Program
Candidates for the B.G.S. degree must be admitted to the Evening College and must complete an application for admission to the program. Applications must be approved by the General Studies Committee and the Evening College dean. The criteria for admission are:

- Students must have reasonable programs of study, and be in good academic standing.
- Students must have demonstrated the equivalent of academic proficiency required for any other undergraduate degree at UM-St. Louis.
- Study programs should be structured to meet students' unique educational goals and should not be readily available under any other UM-St. Louis degree program.

Degree Requirements for the B.G.S. Program

General Education Requirements
Students must complete the university's general education requirements. For details refer to the general education requirements section of this *Bulletin*.

Personal Emphasis Area In consultation with a faculty adviser, students shall develop a personal emphasis area of at least 30 advanced semester hours of graded credit that meets their educational goals. Graded credit consists of degree credit courses in which the student received a letter grade of A, A-, B+, B, B-, C+, C, C-, D+, D, D-. Regardless of the focus, theme, or purpose, the personal emphasis area should result from self-examination and contribute to self-realization and an advanced level of academic competence and achievement. The program must be approved by the faculty adviser, dean, and General Studies Committee. Students and advisers periodically review the program and make appropriate modifications where necessary, subject to the dean's approval.

Hour and Grade Requirements The degree requires completion of 120 semester hours with a 2.0 grade point average overall and in the personal emphasis area. No more than 30 hours may be taken in any one department. At least 45 hours must be earned in courses beyond the introductory level. A minimum of 24 hours of graded credit must be completed in residence at UM-St. Louis, of which 15 hours must be in the personal emphasis area and completed after admission to the B.G.S. program. No more than 18 hours may be taken on a satisfactory/unsatisfactory basis. Each candidate must be in residence for 24 of the last 30 hours of graded credit (exclusive of courses taken on a satisfactory/unsatisfactory basis).

Credit for Experience, Special Projects, Examinations, and Nontraditional Forms of Study Credit may be earned through the College Level Examination Program in accordance with university policy or through examinations proposed or approved by university departments. Credit also may be earned through correspondence study, supervised independent research study, and college-level courses offered by television or similar education media. Students are responsible for obtaining approval for credit applied under this option.

Students may receive credit for vocational experience, community service projects, or cultural activities after they have completed 24 hours of course work in residence.

Vocational Experience Credit may be granted for vocational experience when related to the personal emphasis area. Credit cannot exceed 3 semester hours for each year of experience with a maximum of 12 hours allowed only in exceptional circumstances. Petitions for vocational experience credit must be accompanied by a job description verified by the employer or similar appropriate evidence. Credit may be granted only upon recommendation of the faculty adviser and approvals of the dean and the General Studies Committee.

Community Service Projects/Cultural Activities Credit not exceeding 6 hours may be earned for participation in approved community service projects or cultural activities. The projects or activities must be formulated by the student and carried out under the supervision of a faculty member with the approval of the adviser, dean, and General Studies Committee. Students must submit a written report approved by the supervisor upon completion of the projects or activities. Credit for vocational experience or community service/cultural activities may be applied toward the elective credits required for the degree but may not be used to complete the personal emphasis area or general education requirements.

Students must file a degree application form in the Evening College at least one year before the expected graduation date.

Bachelor of Health Science
The bachelor of health science degree (B.H.S.) is designed to prepare students for two career areas: clinical laboratory science (CLS) and cytotechnology (CT). The B.H.S combines course work taken at UM-St. Louis with clinical experiences at Barnes Jewish Hospital and throughout the BJC Systems of member hospitals and clinics.

The clinical laboratory science program prepares students to perform analytical tests on body fluids cells and products. The students will learn to identify possible discrepancies in data, confirm abnormal results, and develop solutions to problems concerning the generation of laboratory data.

The cytotechnology program prepares students to be knowledgeable about all of the normal cells from numerous body sites, as well as those changes encountered due to neoplasia, infectious agents, viruses, and other causative agents. Graduates will be able to perform cytologic evaluations of body fluids, cells, and fine-needle aspirations.

The B.H.S. curricula was developed in collaboration with the Jewish Hospital College of Nursing and Allied Health. Consult the Biology Department section of this *Bulletin* for course descriptions and prerequisites.

Clinical Laboratory Science
Courses (specific course or distribution area and credits):
Humanities (9)
State Requirement (3)
Bio 11, Intro Biology I (5)
Bio 113, Human Phys and Anat I (4)
Bio 114, Human Phys and Anat II (4)
Bio 216, Microbiology (3)*
Bio 218, Microbiology Lab (2)*
Bio 317, Immunobiology (3)
Bus 103, Comp and Info Systems (3)
Chem 11, Intro Chemistry I (5)
Chem 12, Intro Chemistry II (5)
Chem 262, Organic Reactions (3)
Chem 263, Tech of Organic Chem (2)
Com 30 or 40, Interpersonal or Public Speaking (3)
Eng 10, Freshman Comp (3)
Eng 213, Technical Writing (3)
Math 30, College Algebra (3)
Nurs 115, Pathophysiology (3)
Psy 201, Psych Stats (4)
Soc 10, Intro to Soc (4)

*Bio 116 and 118 may also fulfill these requirements.

Clinical requirements:
Bio 303a, Fundamentals and Trends in Role Development (3)
Bio 303b, Clinical Bacteriology (3)
Bio 303c, Bacteriology Practicum (4)
Bio 303d, Parasitology and Mycology (2)

Bio 303e, Clinical Immunology (2)
Bio 303f, Immunology Practicum (1)
Bio 303g, Immunohematology (3)
Bio 303h, Immunohematology Practicum (3)
Bio 303i, Hematology (4)
Bio 303j, Hematology Practicum (3)
Bio 303k, Clinical Chemistry (3)
Bio 303l, Chemistry Practicum (4)
Bio 303n, Leadership and Mgnt CLS (3)
Bio 393, Res Methods Health Sci (3)

Free elective credits: 15 credit hours
(Bio 213 and 371 are recommended)

Cytotechnology
Courses (specific courses or distribution area and credits):
Humanities (9)
State requirement (3)
Bio 11, Intro Biology I (5)
Bio 113, Human Phys and Anat I (4)
Bio 114, Human Phys and Anat II (4)
Bio 216, Microbiology (3)*
Bio 218, Microbiology Lab (2)*
Bio 317, Immunobiology (3)
Bus 103, Comp and Info Systems (3)
Chem 1, Gen Chem I (3)
Chem 2, Gen Organic Chemistry (3)
Chem 3, Gen Chem Lab (2)
Com 30 or 40, Interpersonal or Public Speaking (3)
Eng 10, Freshman Comp (3)
Eng 213, Technical Writing (3)
Math 30, College Algebra (3)
Nurs 115, Pathyphysiology (3)
Psy 201, Psych Stats (4)
Soc 10, Intro to Sociology (3)

*Bio 116 and 118 may also fulfill these requirements.

Clinical requirements:
Bio 302a, Intro to CT (3)
Bio 302b, Female Genital Tract 1 (4)
Bio 302c, Female Genital Tract II (3)
Bio 302d, Processing Lab (2)
Bio 302e, Respiratory and Oral CT (3)
Bio 302f, Body Fluid Cytology (3)
Bio 302g, Gastro Genitournsiary CT (3)
Bio 302h, Fine Needle Aspriation (4)
Bio 302i, Adv Practices in CT (12)
Bio 302j, Leadership and Mngmt CT (4)
Bio 393, Res Methods Health Sci (3)

Free elective credits 17 credit hours
(Bio 210 and 212 are recommended).
Request for additional information concerning the B.H.S. degree and academic advising can be obtained through the Evening College.

Minors

Minor in Employee Training and Development The Evening College and the College of Business Administration offer a minor in employee training and development. The requirements are:

BA 318, or Psych 318, Industrial and Organizational Psychology
BA 319, Employee Training and Development
Ed Psy 312, Psychology of Teaching and Learning
Ed Tec 340, Selection and Utilization of Educational Media
Psych 219, Research Methods
One additional course selected from these approved electives:
BA 309, Human Resources Management
Comm 141, Business and Professional Speaking
Sociology 354, Occupations and Their Work Settings

Students should consult with an adviser when planning their programs. A 2.0 grade point average is required for the minor. No courses may be taken on a satisfactory/unsatisfactory basis. At least 12 credits of those required must be completed in residence at UM-St. Louis.

This minor is designed for human resources managers in small companies and training managers or human resources specialists in larger companies. The required 18 hours, including the approved elective course, enable the student to be exposed to different skills essential for the occupational area.

Other minors in business administration include accounting, finance, general business, logistics and operation management, management and organizational behavior, marketing, and management information systems.

Other Minors
Minors are also available in biology, black studies, chemistry, communication, computer science, criminology and criminal justice, economics, English, history, legal studies, mathematics, political science, philosophy, physics, psychology, public affairs journalism, social work, sociology, and urban studies. For currently offered minors, consult an adviser.

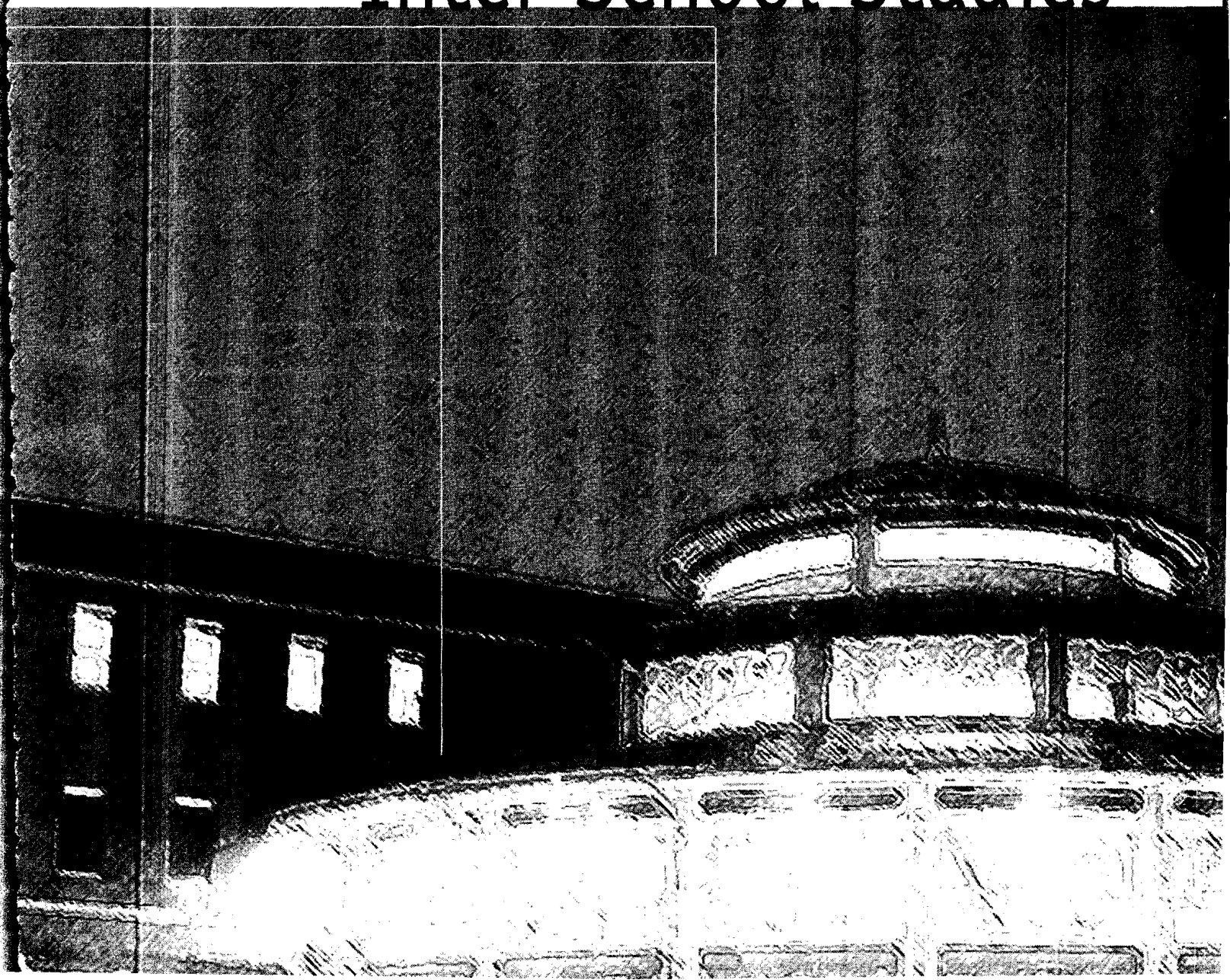
Certificates
Certificate programs are available in biochemistry, gerontology, nonprofit organization management and leadership, women's and gender studies, trauma studies, and writing. For more information consult the Certificate Programs section of this *Bulletin.*

Career Outlook

Many graduates of the Evening College have found their careers advanced upon obtaining their degree. Some have entered new careers in midlife, and others have found

personal satisfaction in the acquisition of knowledge for its own sake. The Evening College staff consists of advisers with extensive experience concerning adult students' needs. For an appointment, call the Evening College office, 516-5161.

Inter-School Studies



Gerontology

Faculty

Robert J. Calsyn, Director, Professor* of Psychology and Gerontology
Ph.D., Northwestern University
Carl J. Bassi, Associate Professor* of Optometry
Ph.D., Vanderbilt University
Margo-Lea Hurwicz, Associate Professor* of Anthropology and Gerontology
Ph.D., University of California-Los Angeles
W. Howard McAlister, Associate Professor* of Optometry
O.D., Ohio State University
Timothy D. McBride, Associate Professor* of Public Policy Administration, Economics, and Gerontology
Ph.D., University of Wisconsin-Madison
Chikako Usui, Associate Professor* of Sociology and Gerontology
Ph.D., Stanford University
Timothy A. Wingert, Associate Professor* of Optometry
O.D., Illinois College of Optometry
Ann M. Steffen, Assistant Professor* of Psychology
Ph.D., Indiana University
Nanora L. Sweet, Assistant Professor of English
Ph.D., University of Michigan
Terry Ettling, Senior Lecturer
M.A., Webster University
John Van Emden, Senior Lecturer
M.A., Washington University
Anna Biggs, Lecturer Barnes College of Nursing
Ph.D., University of Colorado Health Sciences Center
Richard P. Johnson, Adjunct Professor
Ph.D., University of Florida
Nina Tumosa, Adjunct Associate Professor* of Optometry
Ph.D., State University of New York at Albany (SUNYA)
Kelly Everard, Adjunct Assistant Professor
Ph.D., University of Kentucky
Myra Aud, Adjunct Lecturer
M.S.N., Saint Louis University
*members of Graduate Faculty

Faculty from 10 departments and schools are involved in the undergraduate and graduate programs in gerontology.

Master of Science in Gerontology
The master of science degree in gerontology program is a multidisciplinary program designed to prepare students for management or direct service positions working with the aged. The program of study includes courses from a variety of departments including anthropology, biology, nursing, political science, psychology, sociology, social work, physical education, English, public policy administration, and optometry. Courses are offered primarily in the evening to accommodate part-time, as well as full-time, students.

Admission Requirements
Program applicants must have the following:
- Baccalaureate degree.
- 3.0 or B average (students with exceptions should contact the director of the gerontology program).
- Official transcripts of all previous undergraduate/graduate work.
- Three letters of recommendation

In addition, students must meet the other general requirements for admission to the Graduate School as explained in the Graduate Study section of the *Bulletin*.

Degree Requirements
The students are required to complete 45 credit hours, including 27 hours in gerontology courses, a 3-hour research methods course, and a 15-hour specialization that is individually tailored to the student's career goals. Depending on the student's prior course work in gerontology, up to 15 hours of credit may be waived. The required courses are listed below.

Gerontology Distribution Requirements

A. Public Policy and Aging-3 credits
Gerontology (PPA, Political Science) 443, Health Care Policy
Gerontology (PPA, Political Science) 417, Income and Pension Policy for the Aged
Gerontology (Sociology) 449, Issues in Retirement

B. Health and Physical Aspects of Aging - 3 credits from the following:
Gerontology 300a (Soc. Wk. 381a) Mechanics of Aging I: The Aging Body (1 credit hour)
Gerontology 300b (Soc. Wk. 381b) Mechanics of Aging II: The Aging Brain (1 credit hour)
Gerontology 300c (Soc. Wk. 381c) Mechanics of Aging III: Diseases of Aging (1 credit hour)
Gerontology (Nursing) 401, Health and Wellness in the Aging
Gerontology 441, Aging and Health Behavior
Gerontology 458 (Opt. 558), Geriatric Optometry

C. Psychosocial Aspects of Aging-3 credits from the following:
Gerontology (Psyc.) 373, Psychology of Aging
Gerontology (Psych.) 376, Mental Health and Aging
Gerontology (Soc.) 361, Sociology of Aging
Gerontology (Anthro.) 440, Cultural Aspects of Aging

D. Practica in Gerontology, 6 credits
Gerontology 495, Practicum in Gerontology
Gerontology 496, Advanced Practicum in Gerontology

E. Gerontology 494, Integrative Research in Gerontology - 3 credits

F. Gerontology Electives - 9 credits

G. Graduate-level statistics course - 3 credits
Students should consult Director of Gerontology for approved courses.

H. Specialization Area - 15 credits
Students should consult Director of Gerontology for approved courses.

Graduate Certificate in Gerontology

The graduate certificate in gerontology is designed for students who wish to receive postbaccalaureate training in gerontology. The certificate can be taken by itself or in conjunction with pursuit of a graduate degree in another field. Eighteen credit hours are required.

Admission Requirements
Program applicants must have the following:
- Baccalaureate degree.
- 2.75 grade point average (students with exceptions should contact the director of the gerontology program).
- Official transcripts of all previous undergraduate/ graduate work.
- Two letters of recommendation.

Distribution Requirements

A. Public Policy-3 credits from the following:
Gerontology (PPA, Political Science) 443, Health Care Policy
Gerontology (PPA, Political Science) 417, Income and Pension Policy for the Aged
Gerontology (Sociology) 449, Issues in Retirement

B. Health and Physical Aspects of Aging-3 credits selected from the following:
Gerontology (Nursing) 401, Health and Wellness in the Elderly
Gerontology 441, Aging and Health Behavior
Gerontology 300a, (Soc.Wk.381b)Mechanics of Aging II: The Aging Brain (1 credit hour)
Gerontoloty 300b (Soc.Wk. 381b) Mechanics of Aging II: The Aging Brain (1 credit hour)
Gerontology 300c (Soc.Wk. 381c) Mechanics of Aging III: Diseases of Aging (1 credit hour)
Gerontology 458 (Optometry 558), Geriatric Optometry

C. Psychosocial Aspects of Aging - 3 credits selected from the following:

Gerontology (Psych) 373, Psychology of Aging
Gerontology (Psych) 376, Mental Health and Aging
Gerontology (Soc.) 361, Sociology of Aging

D. Gerontology 495, Practicum in Gerontology -3 credits

E. Electives in Gerontology - 6 credits

Graduate Certificate in Gerontological Social Work
The graduate certificate in gerontological social work is a program designed for students who wish to pursue advanced study in social work practice with the elderly. While the program draws from several disciplines, the focus is on practice and/or administration in gerontological settings. The program can be taken by itself or in conjunction with the pursuit of a graduate degree in another field.

Admission Requirements
Program applicants must have the following:
- Baccalaureate degree.
- 2.75 grade point average (students with exceptions should contact the director of the gerontology program)
- Official transcripts of all previous undergraduate/ graduate work.
- Two letters of recommendation.

Certificate Requirements
Eighteen credit hours are required to complete the certificate. Students must complete 15 hours of required core courses and 3 hours of gerontology electives at the 300-level or above.

Required Core Courses
Gerontology 316, Clinical Gerontology, **or**
Social Work 316, Clinical Gerontology
Gerontology 373, Psychology of Aging, **or**
Psych 373, Psychology of Aging
Gerontology 361, Social Gerontology, **or**
Sociology 361, Social Gerontology
Gerontology 444, Public Policy and Aging, **or**
Political Science 444 Public Policy and Aging
Social Work 412, Research Design in Social Work
Social Work 491, Professional Leadership Practice

Undergraduate Certificate in Gerontological Studies

A certificate in gerontological studies, a multidisciplinary course of study, is available at the University of Missouri-St. Louis. This program provides an opportunity for students to obtain a focused specialty in gerontology in addition to their majors. It utilizes offerings in the College of Arts and Sciences, the College of Business Administration, Barnes College of Nursing, and the College of Education. It is appropriate for students in any of the colleges of the University.

Certificate Requirements
A student may earn the certificate in gerontological studies by completing a total of 15 hours. Courses must be chosen from at least two of the following four topic areas. No more than 3 credit hours from Research/ Practicum Experience courses will be allowed. The student must have the approval of the director of the gerontology program before enrolling in the course. Courses taken to fulfill the requirements may not be taken on a satisfactory/unsatisfactory basis. New courses continually are added, so it is advisable to check with the director each term. Many courses are cross-listed and also have a gerontology designation.

Humanities
English 15, Images of Age in Film
English 16, Images of Age in Literature
Gerontology 156, Medical Ethics, **or**
Philosophy 156, Medical Ethics

Natural Sciences and Mathematics
Gerontology 111, Issues in Geriatric Health Care, or
Biology 111, Issues in Geriatric Health Care, or
Nursing 111, Issues in Geriatric Health Care
Biology 311, Physiology of Aging

Social Sciences
Gerontology 272, Adult Development and Aging, or
Psych 272, Adult Development and Aging
Gerontology 280, The Psychology of Death and Dying, or
Psych 280, The Psychology of Death and Dying
Gerontology 373, The Psychology of Aging, or
Psych 373, The Psychology of Aging
Gerontology 316, Clinical Gerontology, or
Social Work 316 Clinical Gerontology
Gerontology 361, Social Gerontology, or
Sociology 361, Social Gerontology

Education
Gerontology 190, Clinical Experience in Physical Gerontology, or
Phy Ed 190, Clinical Experience in Physical Gerontology
Gerontology 392, Internship in Physical Gerontology, or
Phy Ed 392, Internship in Physical Gerontology
Gerontology 330, Prescribing Physical Activity, or
Phy Ed 330, Prescribing Physical Activity

Career Outlook

The increasing number of elderly in the population has greatly expanded job opportunities in gerontology in the last decade, and job prospects for the future are equally bright. Career possibilities include nursing home administration, administration and planning of community-based programs for the elderly, recreational programming, and counseling of the elderly.

Course Descriptions

15 Images of the Elderly in Film (3)
(Same as Eng 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 Eng 16.) Reading and discussion of literature that portrays aging and old age in various settings. Discussion and short essays enable consideration of how literature helps in the study of aging and also how the process of aging can be a creative force within literature.

60 Aging in America (3)
(Same as ID 60.) An introduction to the major issues, research, problems, and current service approaches in the study of the aging process. An overview of information useful for students in the arts and sciences, business, education, and nursing schools.

120 Special Topics in Gerontology (1-3)
(Same as ID120.) Selected topics dealing with various aspects of gerontology. The specific contents of this course will vary from semester to semester. The course may be repeated for credit with permission of the Gerontology director.

156 Medical Ethics (3)
(Same as Phil 156.) An examination of ethical issues in health care practice and clinical research and in public policies affecting health care. Topics include abortion, euthanasia, health care, experimentation, informed consent, and the right to health care.

190 Clinical Experience in Physical Gerontology (3)
Prerequisite: Consent of instructor. (Same as Phy Ed 190.) Early supervised experience in gerontological physical activity programming. Seminar precedes and accompanies clinical experience.

215 Growing Old in Other Cultures (3)
(Same as Anthro 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.

272 Adult Development and Aging (3)
(Same as Psych 272.) Personality, social, and physiological development from the onset of early adulthood through maturity and old age.

300a Mechanisms of Aging I: The Aging Body (1)
Prerequisites: Bio 1 or Bio 110 or equivalent. (Same as SW 381a). (MSW students normally take all foundation courses prior to enrolling in this course). Introduces students with a social sciences/ humanities background to the normal changes in the biology and chemistry of the aging human body.

300b Mechanisms of Aging II: The Aging Brain (1)
Prerequisites: Ger 300a or SW 381a or equivalent or consent of instructor. (Same as SW 381b). (MSW students normally take all foundation courses prior to enrolling in this course) Provides students with a social sciences/humanities background a basic introduction to the biology and chemistry of the aging human brain and nervous system.

300c Mechanisms of Aging III: Diseases of Aging (1)
Prerequisites: Ger 300a and 300b or SW 381a and 381b or equivalents or consent of instructor. (Same as SW 381c). (MSW students normally take all foundation courses prior to enrolling in this course) Provides students with a social sciences/humanities background with information on how diseases associated with aging exacerbate the effects of aging on the human body and mind.

330 Prescribing Physical Activity (3)
Prerequisite: Phy Ed 280 or consent of instructor. (Same as Phy Ed 330.) Prescription of physical activity for individualized and group programming based upon physical fitness assessment. Health, nutrition, age, physical fitness, and testing aspects are considered in developing specialized exercise programming based upon current physiological and biomechanical research.

361 Social Gerontology (3)
Prerequisite: Soc 10 and junior standing or consent of instructor. (Same as Soc 361.) Topics include sociological theories of aging, technological and social change and its effects on the environment of older people, and prejudice and discrimination against the elderly.

373 Psychology of Aging (3)
Prerequisite: Nine hours of Psychology or consent of instructor. (Same as Psych 373.) This course focuses on the developmental changes associated with aging including sensation, memory, emotions, and attitudes.

376 Mental Health and Aging (3)
Prerequisites: Psych 272, 373, or graduate student status. (Same as Psych 376 and SW 376.) (MSW students normally take all foundation courses prior to enrolling in this course.) A survey of recent theory and research in mental health issues for older populations. The primary focus is on major psychological disorders prevalent among the elderly and in treatment approaches for elders.

380 Psychology of Death, Dying, and End-of-Life Concerns (3)
(Same as Psych 380.) Prerequisites: Nine hours of psychology. This course will address the psychological aspects of a variety of end of life issues, including death attitudes, funeral practices, ethics, grief theory, family communication practices, health care system approaches, and current research regarding these.

390 Directed Readings (1-3)
Prerequisite: Consent of instructor. Directed readings and research or field work. May be repeated for a maximum of three hours.

392 Internship in Physical Gerontology (1-10)
Prerequisite: Phys Ed/Ger 190 or consent of instructor. (Same as Phys Ed 392). Supervised clinical experience in selected gerontological settings as a physical education practitioner under the supervision of university and program professionals. Internship may include two or more separate experiences completed concurrently or sequentially and involve planning of instruction, participant and program evaluation, research, and related activities.

401 Health and Wellness in the Elderly (3)
Prerequisite: Graduate standing. (Same as Nurs 401). Factors contributing to longevity and health in old age, including genetic predisposition, lifestyle, culture, and environment are related to aspects of maintaining health and promoting wellness. Through a holistic approach, explores aspects of nutrition, exercise and activity, prevention of hazards to health, maintaining self-responsibility, managing stress, and meeting continued developmental, emotional and spiritual needs. Considers cross-disciplinary interventions to promote health and wellness in the elderly. Introduces the "Putting Prevention into Practice" model adapted to health promotion in the elderly.

417 Income and Pension Policy for the Aged (3)
Prerequisite: Graduate standing or consent of instructor. (Same as PPA 417, PolSci 417, and SW 417.) (MSW students normally take the social policy foundation course prior to enrolling in this course). Examination of federal, state, and local policies that affect the economic well-being of the elderly. The development of social security programs and pension programs is explored within a historical context. Emphasis is placed on the analysis of current policy problems and proposed solutions.

440 Cultural Aspects of Aging (3)
(Same as Anthro 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.

441 Aging and Health Behavior (3)
Prerequisite: Graduate standing. This course examines sociocultural influences on health care practices of older adults. The role of social support and other social resources in the health behavior of older adults is emphasized. Topics include self-care decisions, formal service utilization, family caregiving, and planned interventions for older adults.

442 Minority Aging (3)
Prerequisite: Sociology 361 or consent of instructor. (Same as Soc 442.) The experience of aging for racial and ethnic minority elderly will be examined in the context of their families, communities, and society. Key questions concerning minority elderly frame the course, such as the relative importance of culture versus social structure, and the applicability of gerontological theory to the minority aging experience.

443 Health Care Policy (3)
Prerequisites: Graduate standing and consent of instructor. (Same as PolSci 443, PPA 443 and SW 443.) (MSW students will normally take the social policy foundation course prior to enrolling in this course). Survey course examining current issues in health policy that face the nation. Policies are placed in a historical context to show how issues have been influenced by different political and economic conditions. Secondary consequences and limitations of current trends in health policy are explored.

444 Seminar in Public Policy and Aging (3)
Prerequisite: Consent of instructor. (Same as PPA 444 and PolSci 444.) The study of specialized issues and methods related to federal, state, and local policies that affect the elderly. Potential policy areas to be covered include housing, taxation, mental health, transportation, etc. May be repeated for credit, provided the subject matter is different.

445 Sociological Dimensions of Chronic Illness (3)
Prerequisite: Soc 400 or consent of instructor. (Same as Soc 445.) The consequences of chronic illness for social roles, family and organizational dynamics, and the functioning of society are examined. Chronic illness is presented as both a medical problem and a social phenomenon that is shaped by the changing age structure of society.

449 Issues in Retirement (3)
(Same as Soc 449.) Prerequisite: Graduate standing. This course examines macro and micro issues of retirement in the United States. It considers experiences of older persons in retirementCits processes, causes, and consequences-in relation to economic market conditions, demographic changes, and programs and policies that are targeted to support the elderly (e.g., Social Security). It also examines issues relating to older women and retirement.

458 Geriatric Optometry (2)
(Same as Opt 558.) Special examination and management considerations of the geriatric patient will be discussed. Psychological, physiological, social, and demographic aspects of aging, as well as ocular changes associated with the aging process will be taught.

490 Directed Study (1-3)
Prerequisite: Consent of instructor. Designed to give the student an opportunity to pursue a more in-depth study of a problem area in gerontology than is normally covered in more formal courses. May be repeated for a total of 6 credit hours.

494 Integrative Research Seminar in Gerontology (3)
(Same as Psych 494.) Prerequisite: A graduate level research methods course (e.g., PPA 401). This seminar requires students to critically examine research in terms of methodology. Topics covered include: reliability and validity of measures; internal and external validity; needs assessment; treatment implementation and process evaluation, and qualitative methods.

495 Practicum in Gerontology (3)
(Same as Psych 495.) Prerequisite: Consent of instructor. Supervised work experience in an agency that serves older adults. Students are required to complete a minimum of 150 clock hours at the practicum site.

496 Advanced Practicum in Gerontology (3)
(Same as Psych 496.) Prerequisites: Ger 495 and consent of instructor. Advanced practicum experience beyond Gerontology 495. Students must complete a minimum of 150 clock hours of supervised field work (service or research) with older adults.

497 Interdisciplinary Geriatric Care (2)
(Same as Opt 497.) Prerequisite: Consent of instructor. Interdisciplinary approaches that address the medical and social needs of the elderly will be examined. Information about geriatric care and social issues affecting the well-being of older adults will be provided. Clinical, theoretical, and educational perspectives will be presented.

498 Advanced Seminar in Gerontology (3)
Prerequisite: Graduate standing. This course will provide in-depth analysis of specialized topics in gerontology which are not covered in required courses. (Course may be repeated for a maximum of nine credits, assuming topics are different.)

499 Topics in Gerontology (1-2)
Prerequisite: Graduate standing. Analysis of a current problem in gerontology. (Course may be repeated for maximum of five credits, assuming topics are different.)

Managerial Decision Making and Health Informatics

General Information

Master of Health Sciences in Managerial Decision Making and Informatics
The MHS in Managerial Decision Making and Informatics is an integrated, multidisciplinary degree designed to enable health professionals to bridge the traditional divide between clinical services and business. The degree is offered through the Managerial Decision Making and Health Informatics (MDHI) unit of the Graduate School. The program's core is comprised of one-credit modules that provide extensive exposure to health informatics and emerging technologies while simultaneously fostering a systems view of the internal and external forces that affect organizations in the healthcare market. Electives drawn from information systems, health economics, health policy, gerontology, nursing, and business allow students to tailor the program to meet their individual career needs. The program is structured to meet the needs of working health professionals, and characterized by a high degree of integration among the courses.

Admission Requirements:
Applicants must complete an application form and also submit:

- An undergraduate degree with a minimum grade point average of 3.0 or (B).
- A statement of purpose demonstrating a commitment to pursue a degree in health informatics.
- A resume, preferably showing two years of professional work experience in a health-related field.
- Three letters of recommendation from persons qualified to judge the candidate's potential for success in the program.

Applicants are required to take either the Graduate Record Exam (GRE) General Test, or the Graduate Management Admission Test (GMAT), and fulfill the general requirements for admission to the Graduate School as explained in the Graduate Studies section of this *Bulletin.* These exams measure verbal, quantitative and analytical skills that are developed over a long period of time and are associated with success in graduate studies.

Admission decisions are based on the applicant's portfolio. The MDHI program director may request a personal or phone interview once the applicant's file is complete. Applicants who do not meet all the requirements listed above may be provisionally admitted to the program at the program director's discretion.

Mathematics Background Requirement
If college algebra or its equivalent was not taken as part of the applicant's undergraduate program, they are required to successfully complete Math 30 or its equivalent prior to their entrance into the MHS-MDHI program. This course may not be used as a program elective.

Degree Requirements
Students are required to complete 36 credit hours. Of these, 21 are in the core curriculum, 6 are from related fields as electives, and 9 involve contact with the local healthcare community via case studies and a capstone project course.

Distribution Requirements
A. Overview: 7 credits
MDHI 400, Emerging Trends in Healthcare Markets
MDHI 402, Insurance and Managed Care
MDHI 404, The Internet and Electronic Commerce for Healthcare Professionals
MDHI 406, Informatics in the Health Professions
MDHI 408, Patient Rights and Provider Responsibilities
MDHI 410, Effective Communication for Healthcare Professionals
MDHI 412, Organizational Structures and Administration in the Healthcare Industry.

B. Tools and Techniques used in Decision Making: 4 credits
MDHI 420, Quality and Productivity Improvement Tools
MDHI 422, Decision Analysis
MDHI 424, Modeling and Understanding Statistical Relationships
MDHI 426, Outcomes Research Methods

C. Understanding Decision Making: 5 credits
MDHI 440, Total Quality Management in Healthcare Organizations
MDHI 450, Consumer Behavior in Healthcare Markets
MDHI 452, Health Provider Decision Making
MDHI 454, The Role of the Government in the Healthcare Sector
MDHI 465, Outcomes Research Applications in the Healthcare Sector

D. Informatics: 5 credits
MDHI 460, Information Technology Concepts and Elements
MDHI 462, Health Information Resource Management
MDHI 464, Decision Support for Healthcare Management
MDHI 466, Health Information Systems Evaluation
MDHI 468, Health Data Warehousing and Security

E. Electives: 6 credits
Students may select courses from the list below, or another course approved by the MDHI program director.
Econ 471, The Political Economy of Healthcare
Econ 472, Health Economics
MSIS 430, Quality Management
MSIS 485, Management Information Systems: Theory and
MSIS 488, Information Systems Analysis
Nurs 405, Policy, Organization and Financing in Healthcare

Nurs 406, Values in Health Care Decision Making
Nurs 408, Health and Society
Nurs 458, Resource Utilization
Phil 456, Medical Ethics for Health Care Providers
PPA/Pol Sci/Ger 443, Health Care Policy
PPA 446, Selected Topics in Health Policy: Comparative Health Policy

F. Application: 9 credits
MDHI 480, Practitioner's Forum, 3 credits
MDHI 490, Practicum in Health Managerial Decision Making and Informatics, 6 credits

Graduate Certificate in Managerial Decision Making and Health Informatics
The certificate prepares health professionals to bridge the traditional divide between clinical services and businesses. The degree is offered through the Health Managerial Decision Making and Informatics (MDHI) program--a unit of the Graduate School. The course work is comprised of one-credit modules that provide extensive exposure to health informatics and emerging technologies while simultaneously fostering a systems view of the internal and external forces that affect organizations in the healthcare market. The program is structured to meet the needs of working health professionals, and characterized by a high degree of integration among the courses, allowing completion of the certificate within three 5-credit terms during one calendar year.

Admission Requirements
Applicants must complete an application form and also submit:
1. An undergraduate degree with a minimum grade point average of 3.0 or (B).
2. A statement of purpose demonstrating a commitment to pursue a degree in health informatics.
3. A resume, preferably showing two years of professional work experience in a health-related field.
4. Three letters of recommendation from persons qualified to judge the candidate's potential for success in the program.

Applicants are required to take either the Graduate Record Exam (GRE) General Test, or the Graduate Management Admission Test (GMAT), and fulfill the general requirements for admission to the Graduate School as explained in the Graduate Studies section of this *Bulletin*. These exams measure verbal, quantitative and analytical skills that are developed over a long period of time and are associated with success in graduate studies.

Admission decisions are based on the applicant's portfolio. The MDHI program director may request a personal or phone interview once the applicant's file is complete.

Applicants who do not meet all the requirements listed above may be provisionally admitted to the program at the program director's discretion.

In order to successfully complete the certificate program, the student must have earned a 3.0 cumulative grade point average in certificate classes.

Mathematics Background Requirement
If college algebra or its equivalent was not taken as part of the applicant's undergraduate program, they are required to successfully complete Math 30 or its equivalent prior to their entrance into the MHS-IMD program. This course may not be used as a program elective.

Degree Requirements
Students are required to complete 18 credit hours.

Distribution Requirements
A. Overview: 7 credits
MDHI 400, Emerging Trends in Healthcare Markets
MDHI 402, Insurance and Managed Care
MDHI 404, The Internet and Electronic Commerce for Healthcare Professionals
MDHI 406, Informatics in the Health Professions
MDHI 408, Patient Rights and Provider Responsibilities
MDHI 412, Organizational Structures and Administration in the Healthcare Industry.

B. Tools and Techniques used in Decision Making: 3 credits
MDHI 420, Quality and Productivity Improvement Tools
MDHI 422, Decision Analysis
MDHI 424, Modeling and Understanding Statistical Relationships

C. Understanding Decision Making: 4 credits
MDHI 440, Total Quality Management in Healthcare Organizations
MDHI 450, Consumer Behavior in Healthcare Markets
MDHI 452, Health Provider Decision Making
MDHI 454, The Role of the Government in the Healthcare Sector

D. Informatics: 3 credits
MDHI 460, Information Technology Concepts and Elements
MDHI 462, Health Information Resource Management
MDHI 468, Health Data Warehousing and Security

E. Electives: 1 credit
MDHI 480, Practitioner's Forum, 1 credit

Course Descriptions

400 Emerging Trends in Healthcare Markets (1)
Emerging trends in the healthcare marketplace are described. Topics include market dynamics of the healthcare industry, the use of quality and accessibility to enhance market share, changes in cost accounting systems and healthcare marketing tactics, telemedicine, and more. Emphasis is on recent changes in the local and national markets, and projections for the future.

402 Insurance and Managed Care (1)
The dynamic changed in the managed care industry is explored. The structure of managed care plans is described and analyzed, focusing on the ways that managed care plans have changed the incentives for health providers and patients to alter their behavior, thus leading to changes in medical care delivery. Evidence of the impacts of managed care are studied on important trends such as health care spending, the utilization of medical care, and the quality of medical care. Proposed reforms of the managed care industry will be studied and analyzed.

404 The Internet and Electronic Commerce for Healthcare Professionals (1)
Discussion of identifying and analyzing healthcare organizational needs that may be satisfied using electronic commerce technologies. Focus is on the technical and economic evaluation, analysis, and design of Internet Web pages for electronic commerce using a standard programming language such as, for example, Java Script. Health industry applications of Internet electronic commerce, electronic data interchange, and telemedicine will be discussed.

406 Informatics in the Health Professions (1)
Overview of Health Informatics as a discipline, describing the history of its development, current research and applications domains, job opportunities, informatics resources and ethical responsibilities. Examination of the roles of managers, coordinators, consultants, and users of informatics in the health sciences.

408 Patient Rights and Provider Responsibilities (1)
Examination of issues involving relations between patients and healthcare providers. Topics include informed consent to medical treatment, access to experimental liability for denial of care, and patient confidentiality.

410 Effective Communication for Healthcare Professionals (1)
Analyzing business writing and speaking, and the communication conventions common in organizations. Emphasis is on developing skills critical to career advancement and necessary for effective organizational functioning.

412 Organizational Structures and Administration in the Healthcare Industry (1)
Various organizational structures present in today's healthcare industry are described. Utilizing a systems perspective, several areas from the standpoint of both individual and organizational performance, including communication, motivation, conflict resolution, and leadership are considered.

420 Quality and Productivity Improvement Tools (1)
Exploration of the foundations of quality, including Deming's 14 points for effective management, process capability and improvement studies, control charts, brainstorming and root cause analysis, continual improvement cycles and graphical presentation of results. Readings also provide insights into the application of quality principles and processes to personal and professional development.

422 Decision Analysis (1)
Estimation, hypothesis testing, and prediction for biological and health science data are examined. Uncertainty and risk in Decision Making, tools for static and sequential decisions, excellence in graphical presentation and the effective presentation of statistical results to a variety of audiences are stressed.

424 Modeling and Understanding Statistical Relationships (1)
Focus is on correlation and regression models in analyzing healthcare data. Interactive model-building skills are developed with the use of statistical software. An overview of statistical software systems is presented, ranging from spreadsheet tools appropriate for analyzing small or moderate data sets when limited resources are available to statistical packages appropriate for manipulating massive data sets.

426 Outcomes Research Methods (1)
Exploration of the theory and methods of outcomes research. Focus is on various topics important to understanding the outcomes research approach, including: the measurement of costs, the difference between accounting costs and real resource costs, the measurement of quantity and quality, and the methods for distinguishing between inputs and outputs. Also compare and contrast various approaches to outcomes research, including cost-benefit analysis, cost minimization analysis, cost-effectiveness analysis, and cost analysis. Explore the methods for relatively simple therapeutic interventions, screening and secondary prevention activities, and in assessment of diagnostic tests.

440 Total Quality Management in Healthcare Organizations (1)
Examination of Total Quality Management: an integrated, structured approach that aims at delighting customers by delivering exceptional products or services. Key elements include customer involvement, leadership and team dynamics, and building achievements into a lasting culture of ongoing improvement within the organization. Examines success stories from private practitioners, hospitals, managed care organizations, and consumer/buyer alliances that have resulted in significant and long-lasting improvements in both improved clinical outcomes and reduced costs.

450 Consumer Behavior in Healthcare Markets (1)
Build the tools necessary to understand how consumers behave in healthcare markets. Applying standard microeconomic techniques, analyze the incentives facing patients and explore the ways in which their behavior when purchasing healthcare might differ from their behavior in other consumer decisions. Several topics are explored, but emphasis is on the role of health insurance and how it influences consumer behavior, and the important role of information (or the lack thereof) in consumer decisions.

452 Health Provider Decision Making (1)
Apply standard microeconomic techniques to analyze the incentives facing decision makers in the healthcare system and the ways in which they are altered by government policy. We specifically focus on the market for insurance, and the specific markets for health services (e.g., physicians, hospitals, pharmaceuticals). We explore how the institutional setting for these markets has been changing in recent years, the role of consolidations and mergers, and the impact of government regulations on supplier decisions. The role of information and technological changes in health markets are also examined.

454 The Role of Government in the Healthcare Sector (1)
Explore the rationale for government intervention in the health market, from an economic perspective. Also investigate the impact of government policy on health care provision and financing, focusing especially on the effect of entitlement programs (e.g., Medicare and Medicaid), tax policy, and government regulation. Review and analyze various current proposals for health care reform, addressing such potential topics as Medicare and Medicaid reform, insurance reform, Medical Savings Accounts (MSAs), and reform of managed care.

456 Outcomes Research Applications in the Healthcare Sector (1)
Explore empirical applications of outcomes research to medical Decision Making, familiarizing students with the basic ideas and tools of cost-effectiveness analysis in healthcare as it may be applied to medical interventions. Focus is on the authoritative sources of outcomes data that administrative leaders can rely on for effective decision making. Topics covered may include provider ranking procedures, evaluation of provider treatment patterns, use of mortality and morbidity data in outcomes research, and the use of outcomes research in utilization management. A major goal of the course is to encourage thinking about how to incorporate the methods, ideas and results form cost-effective analysis into the management of contemporary health organizations. This is largely unexplored territory.

460 Information Technology Concepts and Elements (1)
A broad view of aspects in health informatics, including its methodologies and applications. The concepts and elements covered include data models, data bases, data as a resource, process models, and information systems.

462 Health Information Resource Management (1)
Focus is on the techniques, methods, and philosophies associated with the introduction and maintenance of new information systems in healthcare organizations. We concentrate on the management of information resources such as database design, system make versus buy decisions, information systems right-sourcing, and information systems implementation, operation and management.

464 Decision Support for Healthcare Management (1)
Successful applications of intelligent decision support systems (including executive information systems and organizational and medical support systems) and data mining in the healthcare environment are studied. Issues pertaining to the maintenance of data, construction of decision models, and provision of supporting technologies are explored.

466 Health Information Systems Evaluation (1)
Develop skills needed to effectively identify and integrate technology, human components, and strategic needs of healthcare information systems. Of particular emphasis are the tools and methods for user information needs assessment, user information requirements, informat on use assessment, systems prototyping and evaluation.

468 Health Data Warehousing and Security (1)
The benefits and difficulties inherent in designing data warehouses to collect, integrate, and store legacy information from several databases are described. Procedural issues related to data access and security are discussed, in light of emerging technologies such as smart cards, wireless Intranet and Internet communications, electronic data exchange among patients, healthcare providers, suppliers, insurers, and other entities

480 Practitioner's Forum (1)
Students will work in teams to analyze and present solutions to case studies which address problems or opportunities currently faced by healthcare organizations. Potential topics include work flow analysis, human resource management, healthcare accounting and finance, entrepreneurship, health services marketing, health law compliance and regulation.. This course may be repeated for credit.

490 Practicum in Healthcare Managerial Decision Making and Informatics (6)
Capstone course is a concentrated, experiential opportunity to function as part of a supervised team on informatics and decision making projects within a regional healthcare organization. Special emphasis is given to the synthesis of previous course work, resulting in a cross-functional approach to problem-solving within the organization.

Faculty

Andrew D. Glassberg, Director of Public Policy Administration, Associate Professor of Public Policy Administration and Political Science*
Ph.D., Yale University
Alan F. J. Artibise, Professor of History and Public Policy Administration and History
Ph.D., University of British Columbia
E. Terrence Jones, Professor of Public Policy Administration and Political Science*
Ph.D., Georgetown University
Carol W. Kohfeld, Professor Emerita
Ph.D., Washington University
George J. McCall, Professor of Public Policy Administration and Sociology*
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Eugene J. Meehan, Curators' Professor Emeritus of Public Policy Administration and Political Science*
Ph.D., London School of Economics
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Ph.D., Syracuse University
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Ph.D., Michigan State University
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D.B.A., Indiana University
John McClusky, Director, Non-Profit Management and Leadership Program*
Ph.D., University of California-Berkeley
Anne Zerr, Director, Local Government Management and Leadership Program
MBA, Harvard University
Gerald J. Blasi, Affiliate Assistant Professor of Public Policy Administration and Political Science
Ph.D., SUNY, Binghamton University

*members of Graduate Faculty

General Information

The master's program in public policy administration (M.P.P.A.) is an interdisciplinary program designed to prepare students for managerial positions in the public sector or in agencies having substantial interaction with the public sector. The program is a unit of the Graduate School and is accredited by the National Association of Schools of Public Affairs and Administration. Faculty are on joint appointments in economics, history political science, sociology, or business administration. The program includes courses in policy analysis, public administration, management, budgeting, and economics in the basic curriculum.

The M.P.P.A. program at the University of Missouri-St. Louis differs from existing programs available in the Missouri-Illinois region in its interdisciplinary nature and emphasis on the development of analytic and administrative skills. It is designed to meet the needs of prospective full-time students as well as those who wish to earn a degree in the evening while continuing to work.

In addition to the distinguished doctoral-level faculty in public policy administration, students have access to courses and faculty in business and other social sciences, in the Center for Metropolitan Studies, and in the Center for International Studies. The M.P.P.A. program serves as an editorial home of the *American Review of Public Administration.*

The full facilities of Campus Computing, and the lab for Qualitative Analysis are available. UM-St. Louis is also a member of the Inter-University Consortium for Political and Social Research.

Admission Requirements

Applicants to the M.P.P.A. program must meet the general requirements for admission to Graduate School as explained in the Graduate Study section of this *Bulletin.* Students entering the M.P.P.A. program may be required to take up to 9 hours of prerequisites in mathematics, and social science.

Degree Requirements

The program includes 40 hours, 28 in the core curriculum sequence and 12 in a special field chosen by students in consultation with their advisers.

Prerequisites
Students must demonstrate competency in microcomputer-based applications, including spreadsheets and data bases. These competencies must be acquired at the beginning of the degree program, if students are not already familiar with these applications. Competency may be demonstrated examination, or by successfully completing approved short courses, or by completing PPA 480, Management Information Systems.

Core Curriculum
All candidates for the MPPA degree must complete 28 hours in the core curriculum sequence composed of the following public policy administration courses:

Administration
440, Proseminar in Public Policy Administration
460, Organizational Behavior and Administrative Processes

Budgeting
418, Governmental Budgeting and Financial Control

Economics
408, Microeconomics for Policy Analysis
421, Public Sector Microeconomics

Policy Analysis
410, Introduction to Policy Analysis
419, Cases in Public Policy Analysis

Statistics and Applications
401, Introduction to Policy Research
475, Introduction to Evaluation Research Methods

Exit Project
499, Exit Project Research

A thesis is not required, but students must complete written analyses as part of their course work and/or internships. There is also a 1 credit hour exit project (PPA 499) examining a problem in public policy administration in the final semester. PPA 419 is a capstone course and should be taken toward the end of the program.

Students may select one of five emphasis areas in which to concentrate their advanced studies: (1 managing human resources and organizations, (2) policy research and analysis, (3) local government management, (4) health policy, (5) nonprofit organization management, or they may select an individualized focus area in consultation with their advisors.

Prior to the completion of 15 hours in the MPPA program, students should identify a specialization. Specific requirements for each focus area are as follows:

1) Managing Human Resources and Organizations
a. Required (3 hours)
PPA 449 Human Resources in the Public Sector
b. Electives – 9 hours chosen from:
Management 462, Advanced Organizational Behavior and Administrative Processes
Management 463, Organizational Training
Economics 480, Labor Economics
PPA 468, Negotiating Workplace Conflict
Sociology 424, Conflict Management in Organizations
Pol Sci 341, Collective Bargaining
PPA 495, Internship – 3 hours (in assignment relevant to specialization)

2) Policy Research and Analysis
a. Required (6 hours)
PPA 365, Introduction to Econometrics or
Pol Sci 402, Intermediate Techniques in Policy Research
AND one of the following:
Pol Sci 411, Seminar in Policy Analysis OR
Soc 331, Qualitative Methods in Social Research OR
Soc 366, Applied Econometrics OR
Pol Sci 403, Advanced Techniques in Policy Research

b. Electives – 6 hours Chosen from (may include courses listed above but not counted towards specialization requirement)
Econ 317, Public Finance
Econ 360, Natural Resource Economics
Econ 480, Labor Economics
Econ 490, Advanced Topics in Economic Analysis
Pol Sci 404, Multi-Method Research
PolSci 422, Law, Courts, and Public Policy
Sociology 432, Survey Research Methods
PPA 495, Internship (in assignment relevant to the specialization

Students cannot receive credit for both Econ 365 and Pol Sci 402 or for both Econ 366 and Pol Sci 403.

3) Local Government Management
a. Required - 6 hours
PPA 434, Seminar in City Administration AND EITHER
Pol Sci 470, Proseminar in Urban Politics OR
Pol Sci 471, Seminar in Urban Politics

b. Electives – 6 hours Choose from:
PPA 449, Human Resources in the Public Sector
PPA 394, Leadership and Management in Nonprofit Organizations
PPA 451, Urban and Regional Planning and Public Policy
PPA 435, Issues in Urban Management
Econ 317, Public Finance: State and Local
Econ 470, Political Economy of Metropolitan Areas
Soc 426, Community and Regional Conflict Intervention
Pol Sci 432, Intergovernmental Relations

PPA 495, Internship (in assignment relevant to specialization)

NOTE: Students interested in careers in local government management are strongly encouraged to take PPA 449, Human Resources in the Public Sector, as one of their electives.

4) Health Policy
a. Required 9 hours:
PPA 443, Health Care Policy
PPA 446, Selected Topics in Health Care Policy: Comparative Health Policy
Econ 471, Political Economy of Health Care OR
Econ 472, Health Economics

b. Electives – 3 hours Chosen from (may include courses listed above but not counted toward specialization requirement):
PPA 446, Selected Topics in Health Care Policy (with different substantive area from comparative health policy)
Soc 447, Health Policy and the Elderly
Gerontology 376, Mental Health and Aging
Gerontology 401, Health and Wellness in the Elderly
Gerontology 441, Aging and Health Behavior
PPA 495, Internship (in assignment relevant to the specializtation)

Nonprofit Organization Management and Leadership
a. Required 9 hours
PPA 391-A, B, C, Management Issues in Non-Profit Organizations: Staff Management Issues; Legal Issues; Financial Issues
PPA 394, Leadership and Management in Non-Profit Organizations
PPA 396, American Philanthropy and Non-Profit Resource Development

b) Electives - 3 hours chosen from:
PPA 449, Human Resources in the Public Sector
PPA 455, Strategic and Program Planning for Nonprofit Organizations
Sociology 424, Conflict Management in Organizations
Sociology 426, Community and Regional Conflict Intervention
Sociology 430, Policy Mediation Processes
Sociology 444, Social Policy and Community Planning
BA 343, Accounting for Governmental and Nonprofit Entities
BA 405, Managerial Communication
BA 412, Public Policies Toward Business
BA 470, Contemporary Marketing Concepts
Psych 412, Social Psychology
PPA 495, Internship (in assignment relevant to the specialization)

Individualized Focus Area
Prior to the completion of 15 hours in the MPPA program, the student must present a proposal for 12 hours of specific coursework for approval by the MPPA faculty. The 12 hours must include PPA 495, Internship (in an assignment relevant to the focus area) unless the student has significant public or nonprofit sector experience.

Internships
There currently exists a need for well-trained policy administrators and analysts. Frequent contact is maintained with public and nonprofit practitioners and public officials in the St. Louis metropolitan area, providing valuable input for program development, creation of a wide variety of internship possibilities, and assistance with a vigorous placement program for M.P.P.A. graduates. Interns may be placed in planning agencies, city managers' offices, administrative departments, or budgeting offices.

An internship is required for students without substanted experience in the public or nonprofit sectors. M.P.P.A. students employed in public agencies may receive up to 3 hours of credit for internships in those agencies. To do so, students must develop, in consultation with their advisers, special research projects outside the scope of their regular employment duties. Credit is granted after successful completion of the project and a written paper at the end of the semester.

Graduate Certificate Program in Nonprofit Organization Management and Leadership

The university offers a graduate certificate program for students who are current professional staff, board members, and other leaders of nonprofit and voluntary organizations, as well as those who wish to consider entering the field. There are only two such graduate programs in Missouri. The certificate can be taken by itself or in conjunction with the pursuit of the master's in public policy administration or a graduate degree in another field.

A. The graduate certificate in nonprofit management and leadership requires the completion of 18 credit hours. Nine of these are the following core courses:

1. Leadership and Management in Nonprofit Organizations (3 hours) (Political Science 394, same as Public Policy Administration 394, Sociology, or Social Work 308)

2. Management Issues in Nonprofit Organizations: Staff Management Issues (1 hour) (Political Science, Public Policy Administration, and Social Work 391-A)

3. Management Issues in Nonprofit Organizations: Legal Issues in Governing and Managing Nonprofit Organizations (1) (Political Science, Public Policy Administration, and Social Work 391-B)

4. Management Issues in Nonprofit Organizations: Financial Issues (Political Science, Public Policy Administration, and Social Work 391-C)

5. American Philanthropy and Nonprofit Resource Development (3 hours) (Poli Sci and Soc Wrk 396)

B. Six hours of electives are to be taken from selected courses in accounting, business administration, economics, management, marketing, political science, psychology, public policy administration, and sociology. A student may choose among these courses or other courses approved by the program director. (All Graduate electives must be at the 400 course level.)

C. Three hours of internship are also required, or graduate students should demonstrate either a professional field experience equivalent to the internship or be required to participate. Any request for an exemption from the internship requirement must be approved by the nonprofit program director after a review of the student's professional or managerial field experience with appropriate documentation. Students who receive an exemption must take another 3 hours of electives from the selection in area B.

The internship will include learning activities in management and governance processes in nonprofit organizations, as well as a seminar in which students will critically reflect on their field experience with a faculty supervisor.

Requirements of admission to the graduate certificate program are the same as those required for admission to the Graduate school: an undergraduate degree, and a G.P.A of 2.75 or better.

Career Outlook

The current outlook for graduates of the interdisciplinary master's degree in public policy administration program is quite promising. Recent graduates of this program have found careers as budget analysts, personnel analysts, transportation planners, and human resources planners with local, regional, state, and federal agencies, and the nonprofit sector.

Course Descriptions

365 Introduction to Econometrics (3)
Prerequisites: Econ 51 and 52; Econ 265or Math 132; Math 80 or 101or consent of instructor. (Same as Econ 365.) 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.

391A Management Issues in Nonprofit Organizations: Staff Management Issues (1)
Prerequisite: Junior Standing. (Same as Poli Sci 391A and SW 391A). This course addresses issues involved in managing staff in nonprofit organizations. The course will cover the following topics: fundamentals of staff supervision; balancing supervisory processes with counseling and coaching; selecting, hiring, evaluating, and terminating staff; legal issues that affect these processes.

391B Management Issues in Nonprofit Organizations: Legal Issues in Governing and Managing Nonprofit Organizations (1)
(Same as Poli Sci 391B and SW 391B). This course addresses legal issues involved in managing and governing nonprofit organizations. The course will cover the following topics: The Board as steward of the organization; Director and officer liability; tax laws concerning charitable giving; legal issues in managing staff and volunteers (e.g., hiring, evaluating, and terminating employees); Missouri nonprofit law.

391C Management Issues in Nonprofit Organizations: Financial Issues (1)
(Same as Poli Sci 391C and SW 391C). This course addresses financial issues involved in governing and managing nonprofit organizations. The course will cover the following topics: Cash flow analysis; budgeting; fund accounting; cost accounting (determining costs for programs and services); understanding and using standard financial statements, including balance sheets, cash flow statements, statements of activity, and operating and capital budgets.

394 Leadership and Management in Nonprofit Organizations (3)
Prerequisite: Junior standing. (Same as Poli Sci 394, SW 394, and Soc 308.) Addresses the role and scope of the independent sector in the United States, as well as the leadership and management of nonprofit organizations within that sector. Topics include the economic and political scope of the independent sector, the role of volunteerism in a democratic society, and the role and scope of philanthropy. Topics in voluntary organization management and leadership include the dynamics, functions and membership structure of NPOs, especially staff-board and other volunteer relations; governance and management of NPOs; resource mobilization; and program development management and evaluation.

396 American Philanthropy and Nonprofit Resources Development (3)
Prerequisite: Junior standing or consent of instructor. (Same as Political Science 396 and Social Work 396). This course addresses the history, philosophy, roles and scope of philanthropy in the United States, including its role in the nonprofit, voluntary sector. It further examines the contemporary forces which impact philanthropy and charitable giving, both by institutions and individuals. The course examines the effective planning and management of development programs (e.g., annual giving), fund raising vehicles (e.g., mail solicitations) and the fund raising process, form planning through donor relations.

401 Introduction to Policy Research (3)
(Same as PolSci 401.) Procedures for testing explanations, including research design, principles of measurement, probability sampling, methods of data collection, and techniques for analyzing data.

408 Microeconomics for Policy Analysis (3)
Prerequisites: Graduate student standing. (Same as Econ 408). This course introduces microeconomic analysis of consumers, firms, and government, with an emphasis on policy applications. It assumes no prior training in economics and is appropriate for graduate students in public policy administration, nonprofit management, political science, gerontology, criminology and criminal justice, and other related fields.

410 Introduction to Policy Analysis (3)
(Same as PolSci 410.) Systematic development of a critical/analytic base for dealing with public policy.

415 Directed Reading and Research in Public Policy (1-10)
(Same as PolSci 415.) Prerequisite: Consent of Instructor. Independent study through readings, reports, research projects, and conferences. May be repeated for credit, provided the subject matter is different.

417 Income and Pension Policy for the Aged (3)
Prerequisite: Graduate standing or consent of instructor. (Same as PolSci 417, Gerontology 417, and SW 417.) (MSW students normally take the social policy foundation course prior to enrolling in this course.) Examination of federal, state, and local policies that affect the economic well-being of the elderly. The development of social security programs and pension programs is explored within a historical context. Emphasis is placed on the analysis of current policy problems and proposed solutions.

418 Governmental Budgeting and Financial Control (3)
Prerequisite: BA 440. (Same as BA 418.) A study of municipal and federal financial control and budgeting procedures with emphasis on public policy. The impact of financial control on top management decisions and the effect of budget strategies on the allocations of public funds.

419 Cases in Public Policy Analysis (3)
(Same as PolSci 419.) Intensive analysis of several public policy cases. Cases will be problem-solving exercises in areas such as personnel management, program financing, budget preparation, and planning.

421 Public Sector Microeconomics (3)
Prerequisites: Econ 251, or BA 410, or PPA 408. (Same as Econ 421.) 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.

434 Seminar in City Administration (3)
This course provides an overview of the working environment of a city administrator and is jointly sponsored by the local city managers association. Professional city personnel make presentations to the students on six major topics: political structure, organizational structure, service delivery, finance, personnel policies and practices, and leadership. The course provides direct observation of city council meetings, visits to various city facilities, exposure to different philosophies and styles of city management, and provides students a chance to assemble facts, evaluate options, and present policy recommendations for real problems that local administrators face.

435 Issues in Urban Management (3)
Designed to evaluate management issues that confront managers in local government from a political perspective. The format will include an intense review and discussion of original case studies from actual local government situations. The specific focus of this course will vary. Course may be repeated.

440 Proseminar in Public Administration (3)
(Same as PolSci 440.) Examination of major approaches to analyzing public policies and their administration. Emphasis is on the effects of administrative organization and procedures on policy decisions and their impacts. Specific topics may include administrative accountability, intergovernmental relations, public-private interaction, implementation processes, bureaucratic expertise, the legal environment of public policy administration, and public service and merit issues.

443 Health Care Policy (3)
Prerequisites: Graduate standing and consent of instructor. (Same as PolSci 443, Gerontology 443, and SW 443.) (MSW students will normally take the social policy foundation course prior to enrolling in this course). Survey course examining current issues in health policy that face the nation. Policies are placed in a historical context to show how issues have been influenced by different political and economic conditions. Secondary consequences and limitations of current trends in health policy are explored.

444 Seminar in Public Policy and Aging (3)
Prerequisite: Consent of instructor. (Same as Ger 444 and PolSci 444.) The study of specialized issues and methods related to federal, state, and local policies that affect the elderly. Potential policy areas to be covered include housing, taxation, mental health, transportation, etc. May be repeated for credit, provided the subject matter is different.

446 Selected Topics in Health Care Policy (3)
Prerequisite: Consent of instructor. (Same as PolSci and Soc 446.) The study of specialized issues and methods relating to health care policy. May be repeated for credit, provided the subject matter is different.

449 Human Resources in the Public Sector (3)
Prerequisite: PPA 460 or consent of instructor. (Same as PolSci 449 and SW 469.) Presents an overview of personnel and labor relations in the public sector. Particular emphasis placed on issues which are unique to the public sector, such as the merit system, the questions of representative bureaucracy and the constraints of personnel in the nonprofit sector. The topics include personnel reforms in the federal sector, equal employment and affirmative action policies, testing, selection, hiring, comparable worth, job evaluation, and labor relations including grievance arbitration and collective bargaining.

451 urban and Regional Planning and Public Policy (3)
Prerequisites: Graduate standing or consent of instructor. Focuses on the interdependent processes of urbanization and public policy. Students will acquire an understanding of urban planning and public policy in North America

455 Strategic and Program Planning for Nonprofit Organizations (3)
Prerequisites: Graduate standing or consent of instructor. (Same as PoliSci 491 and SW 455). Strategic and program planning enable an organization to concentrate on efforts and set priorities guided by a mission, vision, and an understanding of its environment. Focus is on preparing a strategic plan and a program plan for a nonprofit organization and analyzing an organization's ability to deliver goods and/or services to its constituents in today's economic, social and political climate.

460 Organizational Behavior and Administrative Processes (3)
(Same as Madag. 460.) The theoretical and research contribution of the behavioral sciences to management and administration are examined and applied to selected organizational situations. Areas to be considered from the standpoint of both individual and organizational performance are communication, motivation, conflict, decision making, goal setting, leadership, organizational design, climate, development, and control. Utilizing a systems perspective, the course attempts to develop in each student an ability to analyze and solve organizational problems.

475 Introduction to Evaluation Research Methods (3)
Prerequisites: At least one course in Research Design and Statistics at the graduate level. (Same as Psych 475, Soc 475, and CCJ 475) 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 designs.

480 Management Information Systems (3)
Prerequisite: Econ 301. (Same as MS/IS 480.) An overview of management information systems is presented, including various information systems concepts and technologies. Students are introduced to a mainframe operating system, a microcomputer-based operating system, and a programming language. Students are also exposed to several common microcomputer-based software applications.

495 Internship (1-6)
Independent study involving work with an appropriate public or private agency.

499 Exit Project Research (1)
Prerequisites: Completion of or simultaneous enrollment in other degree requirement courses. The exit project is viewed as the capstone of the MPPA program. As such, it is meant to be undertaken toward the end of a student's program, usually during the final semester. Its purpose is to provide evidence to the faculty that the degree candidate has mastered the skills acquired in the various courses completed during residence at the university and can apply them to the analysis of a practical research problem.

Barnes College of Nursing

Faculty

Jerry Durham, Dean, Professor*
Ph.D., Saint Louis University
Roberta K. Lee, Hubert C. Moog Endowed Professor of Nursing*,
Dr. PH, University of Texas-Houston
Sally Hardin, Professor*, Ph.D. Program Director
Ph.D., University of Illinois-Urbana
Shirley A. Martin, Dean Emerita, Professor Emerita*
Ph.D., Saint Louis University
Jean Bachman, Associate Professor*
D.S.N., University of Alabama
Anne Fish, Associate Professor*
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Ruth L. Jenkins, Associate Professor*
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Carol W. Trotter, Adjunct Assistant Professor**
RNC, Ph.D., NNP
Lyn Vargo, Adjunct Assistant Professor**
RNC, MSN, NNP
Melodie Rowbotham, Clinical Assistant Professor
MSN, University of Missouri-St. Louis
* Members of Graduate Faculty
**Affiliated Adjunct Faculty

General Information

Barnes College of Nursing offers nursing studies at the undergraduate and graduate levels. Knowledge and skills needed to complete the professional licensure examination to become a registered nurse are available through a basic baccalaureate option. Nurses who have obtained their basic nursing education through associate degree or diploma nursing programs may complete the B.S.N. completion option without repetition of previous nursing education. The master of science in nursing program is offered in cooperation with the School of Nursing at University of Missouri-Kansas City. The Ph.D. in Nursing is offered in cooperation with the Schools of Nursing at University of Missouri- Columbia and Kansas City. Admission to the Ph.D. is available at the post B.S.N. and M.S.N. levels.

Undergraduate Studies

The Barnes College of Nursing provides course work leading to the bachelor of science in nursing. The program is accredited by Commission on Collegiate Nursing Education and the Missouri Board of Nursing. The undergraduate program offers two means for achieving the bachelor=s degree in nursing: studies which are preparatory for completion of the professional nurse licensure examination (pre-licensure track) and advanced placement for the professional registered nurse without repetition of fundamental nursing courses (RN/B.S.N. track). An accelerated prelicensure track is available for qualified persons who hold earned degrees in a nonnursing fields, for outstanding students who have completed all prescribed general education and science course work, and for highly motivated, qualified high school graduates. Baccalaureate students meeting admission criteria may participate in the Pierre Laclede Honors College.

Admission Policies

Basic Baccalaureate

First-time freshman or students with less than 24 college credits:

- Admission to the university (see Undergraduate Admission and Application Procedure section in this *Bulletin*).
- Cumulative high school grade point average of 2.5 (4.0 scale).
- High school rank in upper third of graduating class.
- GED score, if applicable.
- ACT score of 21 or higher.
- Basic computer literacy prior to beginning nursing courses required in nursing major.
- Cumulative grade point average of 2.5 (on 4.0 scale) required prior to beginning nursing courses required in nursing major.
- Completion of minimum of 45 semester hours of general education course work applicable to BSN degree and NS 010, NS 103 (or equivalent), and NS 105 (or equivalent) prior to beginning nursing courses required in nursing major.

Students with 24 or more college credit hours:

- Admission to the university (see Undergraduate Admission and Application Procedure section in this *Bulletin*).
- Minimum cumulative grade point average of 2.5 (4.0 scale) on 24 transferable credits from an accredited college or university.
- Basic computer literacy prior to beginning nursing courses required in the nursing major.
- Cumulative grade point average of 2.5 (on 4.0 scale) required prior to beginning nursing courses required in nursing major.
- Completion of minimum of 45 semester hours of general education course work applicable to BSN degree and NS 010, NS 103 (or equivalent), and NS 105 (or equivalent) prior to beginning nursing courses required in nusing major.

Degree/Transfer Pathway to accelerated option

- Admission to the university (see Undergraduate Admission and Application Procedure section in this *Bulletin*).
- Baccalaureate or higher degree from regionally accredited college or university. Applicants not holding a baccalaureate degree must have completed 62 semester hours of general education academic credit before beginning the program, including prescribed course work, as evidenced by official transcript.
- Minimum grade point average of 3.0 on 4.0 scale for students with baccalaureate or higher degree or baccalaureate degree.
- Completion of all prerequisite general education and science courses for major in nursing with grade of C or higher.
- Basic computer literacy prior to beginning nurses required in nursing major.
- Two letters of recommendation that address applicant's ability to be a self-directed learner.

Post High School Pathway to the accelerated option

- Admission to the university (see Undergraduate Admission and Application Procedure section in this *Bulletin*).
- ACT score of 24 or higher
- Minimum high school grade point average of 3.2 on 4.0 scale on general education course work prior to beginning nursing courses.
- Completion of all prerequisite general education and science courses for the nursing major with grade of C or better.
- Completion of at least 45 semester hours of designated general education credits at UM-St. Louis, including credit earned through advanced standing.
- Basic computer literacy prior to beginning nursing courses required in nursing major.

Honors pathway

- Meet all requirements for admission to the traditional four-year option.
- Apply to Pierre Laclede Honors College.

RN/BSN

- Admission to the university (see Undergraduate Admission and Application Procedure section in this *Bulletin*.
- Graduate of either an accredited diploma or associate degree program in nursing.
- Evidence of current licensure as a registered nurse with eligibility for licensure in Missouri.
- Cumulative grade point average of 2.5 (4.0 scale)* on all previous college-level course work.
- Minimum of 30 hours of college credit applicable to degree.
- (Cumulative GPA of 3.0 required of individuals seeking accelerated access to MSN option.)

Students are required to furnish their own transportation to and from campus and clinical agencies. Students must have automobile access for all community experiences through the program. For specific information regarding the B.S.N. degree program, contact Nursing Student Services and Records office at (314) 516-6066 or 1-888-NURSEUM or http://www.umsl.edu/divisions/nursing.

Credit by Transfer and Examination
Credit may be granted for selected general studies. See Admission and Application Procedure section in this *Bulletin* for credit information.

Degree Requirements
The bachelor of science in nursing degree requires comprehensive course work in general education and nursing. Basic undergraduate nursing course work includes theory, on-campus laboratory and clinical activities. Clinical

experiences require weekday, evening, and/or weekend commitments. Full-time study in the prelicensure baccalaureate track can be completed in four academic years. The prelicensure accelerated track requires full-time study and can be completed in 15 months. RN/B.S.N. course work is offered via interactive telecommunication at various sites throughout eastern Missouri, on-campus, and by Internet. Clinical activities are community-based and may be completed in the student's home community.

Satisfactory/Unsatisfactory
Undergraduate nursing majors may not take required related area general education or nursing courses on a satisfactory/unsatisfactory basis.

General Education Requirements
Nursing majors must complete all general education requirements of the university as outlined in this *Bulletin* (see Undergraduate Studies, General Education Requirements).

In addition to meeting the university's general education requirements, the following specific courses must be completed prior to initiation of the nursing major. See a curriculum planning guide for specific courses and proper sequencing.

1) Natural science course work
Biology 113, Human Physiology and Anatomy I
Biology 114, Human Physiology and Anatomy II
Biology 116, General Microbiology
Chem 5, Chemistry for Health Professions (or equivalent)

2) Behavioral science course work
Psych 3, General Psychology
Psych 268, Human Growth and Behavior
Econ 40, Introduction to American Economy (or equivalent)

3) Humanities
Phil 156, Bioethics (or equivalent)

4) Nursing
Nursing 010, Orientation to Nursing
Nursing 103, Nutrition and Health (or equivalent)
Nursing 105, Communication in the Nursing Profession (or equivalent)
Nursing 373, Quantitative Analysis in the Health Sciences (or equivalent)

Nursing Course Work Requirements
Prelicensure
101 Nursing and Health*
106 Assessment of Clients in Health and Illness*
110 Pathophysiological Bases of Nursing Practice
111 Pharacotherapeutics in Nursing Practice
205 Adult Health Nursing I*
206 Adult Health Nursing II*
207 Nursing Research
214 Psychiatric Mental Health Nursing*
215 Nursing of Women and Childbearing Families*
216 Child and Family Health Nursing*
217 Information Systems Utilized in Health Care*
300 Community Health Nursing*
304 Ethical and Legal Dimensions of Nursing Practice
308 Management and Leadership in Nursing
310 Senior Synthesis*

RN/BSN
200 Dimensions of Professional Nursing
207 Nursing Research (or equivalent)
217 Information Systems Utilized in Health Care*
220 Health Assessment*
301 Family and Community Nursing*
304 Ethical and Legal Dimensions of Nursing Practice (or equivalent)
308 Management and Leadership in Nursing
311 Synthesis in Nursing Practice*
* Includes a laboratory and/or clinical component

Graduate Studies

Cooperative Graduate Programs in Nursing

Master of Science in Nursing
The College of Nursing at St. Louis, in cooperation with the School of Nursing at University of Missouri-Kansas City, offers graduate nursing studies in three areas of clinical specialization:

- Health care of the adult.
- Health care of children.
- Health care of women.

This graduate program offers students three ways of completing the master of science in nursing degree: completion of a minimum of 36 credit hours with emphasis in the role of the nurse educator; completion of a minimum of 36 credit hours with emphasis in the role of the nurse leader of health systems; and completion of a minimum of 43 credit hours with emphasis in the role of advanced practice nurse (clinical nurse specialist or nurse practitioner). Those selecting the practitioner functional role option will be eligible to complete national certifying examinations. Opportunities are also available for completion of post M.S.N. requirements leading to eligibility for practitioner certification. **Graduates**

completing the clinical specialization or practitioner functional options are eligible for endorsement as advanced practice nurses in Missouri.

Admission Requirements

- B.S.N. from an accredited nursing program of B.S.N. program comparable to UM-St. Louis College of Nursing's B.S.N. degree.
- Minimum cumulative grade point average of 3.0 (4.0 scale).
- Current professional licensure with eligibility for licensure in Missouri.
- Basic cardiac life support certification
- Successful completion of an undergraduate descriptive and inferential statistics course
- Successful completion of an undergraduate health assessment course or equivalent
- Computer literacy.

The Nurse Practitioner option also requires:

- Two letters of reference (Neonatal option letters of recommendation must be from individuals involved in Level III NICU).
- Narrative outlining goals.
- Two years of clinical experience with chosen population (Experience for neonatal option must be in Level III NICU).

Availability of clinical resources may limit the number of applicants accepted to the practitioner option.

Degree Requirements

Nurse Educator
405, Values in Health Care Decision Making
406, Policy, Organization, and Financing of Health Care
408, Health and Society
409NE, Professional Role Development
410, Health Promotion Across the Life Span
411, Theoretical Foundations of Nursing Practice
412, Quantitative Methods of Nursing Research
414, Research Utilization in Nursing
420, Nursing Program and Curriculum Development
421, Instructional Strategies in Nursing Education
452, Synthesis Practicum
EDUC 410, The Adult Learner
ED REM 420, Classroom measurement and Evaluation OR
ED REM 421, Educational and Psychological Measurement

Nursing Leadership of Health Systems
405, Values in Health Care Decision Making
406, Policy, Organization, and Financing of Health Care
408, Health and Society
409NL, Role of the Nurse Leader
410, Health Promotion Across the Life Span
411, Theoretical Foundations of Nursing Practice
412, Quantitative Methods of Nursing Research
414, Research Utilization in Nursing
425, Managed Care Services
426, Health Resources Management
427, Theory and Practice in Nursing Leadership
452, Synthesis Practicum
Elective from Nursing, Business, or Managerial Decision Making and Informatics

Advanced Practice Nurse (Clinical Nurse Specialist or Nurse Practitioner)
405, Values in Health Care Decision Making
406, Policy, Organization, and Financing of Health Care
408, Health and Society
409NS/NP, Role of the Clinical Nurse Specialist/Nurse Practitioner
410, Health Promotion Across the Life Span
411, Theoretical Foundations of Nursing Practice
412, Quantitative Methods of Nursing Research
414, Research Utilization in Nursing
418, Pathophysiology for Advanced Nursing Practice **OR**
418N, Physiology/Pathophysiology of the Neonate
424, Health Assessment for Advanced Nursing Practice **OR**
424N, Advanced Health Assessment of the Neonate
427, Pharmacology for Advanced Nursing Practice **OR**
427N, Pharmacology for the Neonate
439, Adult Primary Care I: Diagnosis & Management in Advanced Nursing Practice **OR**
441, Family Health I: Diagnosis & Management in Advanced Nursing Practice **OR**
443 Child Health I: Diagnosis & Management in Advanced Nursing Practice **OR**
448, Neonatal Nursing I
440, Adult Primary Care II: Diagnosis & Management in Advanced Nursing Practice **OR**
442, Family Health II: Diagnosis & Management in Advanced Nursing Practice **OR**
444, Child Health II: Diagnosis & Management in Advanced Nursing Practice **OR**
447, Women's Health II: Diagnosis & Management in Advanced Nursing Practice **OR**
449, Neonatal Nursing II
454A, Advanced Practice Nursing: Internship I
454B, Advanced Practice Nursing: Internship II

Doctor of Philosophy in Nursing

The Ph.D. in nursing program at the University of Missouri-St. Louis affords students with academic, clinical, and research resources of the University of Missouri system through a cooperative arrangement with the Schools of Nursing in Kansas City and Columbia.

Students receive a strong foundation in scientific inquiry with a focus on a clinically relevant area for scholarship and research, hands-on research skills, strategies to promote nursing scholarship, and knowledge of the discipline of nursing. The program provides knowledge in theories, research methods, and empirical findings related to nursing science and advanced nursing practice.

Admission Requirements
Applicants must meet the following:

- Graduate of NLN Baccalaureate program or equivalent with 3.2 minimum GPA (4.0) scale).
- Graduate of NLN Master's program or equivalent with 3.5 minimum GPA (4.0 scale).
- GRE (composite score of 1500 or better desired).
- Three letters of reference.
- Original essay (37 pages) addressing doctoral study and research interests related to Health Promotion and Protection, Health Restoration and Support, and/or Health Care Systems.
- Interview by invitation contingent on ranking related to above criteria.

Degree Requirements
While each program of study is individualized, B.S.N graduates complete a minimum of 72 hours of graduate-level course work that include a minimum of 12 hours for the dissertation. M.S.N. graduate course work which supports the chosen substantive area is individually evaluated to determine eligibility for transfer. The following defines the overall structure of the program:

Modes of Inquiry
Research and Inquiry, 8 - 16 hours external to the College of Nursing, such as advanced statistics, research design, computer applications, or philosophical foundations of science.

Nursing Research and Inquiry, 8 -16 hours within the College of Nursing, such as advanced quantitative nursing research design, advanced qualitative nursing research design, health survey methods, issues in research design, doctoral seminar.

Dissertation, 12 hours.
Nursing Content Areas

Nursing Theory Analysis and Development, 8 -16 hours within the College of Nursing which advance the chosen substantive area, such as conceptual structures, nursing practice models, theory development, theoretical foundations, doctoral seminar.

Nursing Applied Sciences, 8 -16 hours within selected substantive area.

Collateral Support Courses, 12 hours external to the College of Nursing which support selected substantive area.

Professional Organizations

Sigma Theta Tau
The college is an official chapter--Nu Chi--of Sigma Theta Tau International Honor Society. Membership is offered by invitation to those students graduating the upper third of their class and to those recognized as outstanding community nursing leaders.

Student Nurses' Association
The College of Nursing is a constituent of the national Student Nurses'Association. The purpose of this organization is to provide a means for nursing students in the basic baccalaureate program the opportunity to connect with the nursing profession prior to licensure.

Black Student Nurses Association
The College is a constituent of the Black Student Nurses' Association. The purpose of this organization is to provide black nursing students in the prelicensure baccalaureate track the opportunity to serve as a support group for African-American students, collaborate with other African-American groups to compile archives relevant to African-American nurses, and to promote participation in interdisciplinary activities.

Continuing Education-Extension

Continuing Education offerings in the field of nursing are currently presented to provide nurses with new information, techniques, and trends within the nursing profession.

Credit courses which will apply to the B.S.N. program are offered at various off-campus sites.

Course Descriptions

All previous level nursing courses must be successfully satisfied prior to progressing to the next level nursing courses.

10 Orientation to Professional Nursing (0)
Prerequisites: Admission to four-year baccalaureate program. Mandatory eight-week introduction to the nursing program provides a comprehensive orientation to the program. Students are introduced to the academic and clinical expectations of the curriculum. Concerns critical for academic success (i.e., time management, effective study skills, stress management and dealing with test anxiety) are addressed.

100 Introduction to the Nursing Discipline (3)
This course introduces the historical and theoretical development of nursing as a discipline. Nursing is examined as an emerging practice profession. Variables that influence nursing and health care are discussed. Concepts and skills introduced in this course guide the student's educational experience within the nursing major.

101 Nursing and Health (6)
Prerequisites: Biology 114, Biology 116, Chemistry 5, Nursing 19, Nursing 106; pre- or corequisites: Nursing 106, Nursing 110, Nursing 111. Nursing An introduction to the discipline of nursing, the historical and theoretical development of nursing is explored with an emphasis on critical thinking, the teaching/learning process, and foundational practice concepts. Through modular laboratory experiences, the student acquires psychomotor skills to provide safe and effective nursing care to clients promoting health and wellness. Includes classroom, laboratory and clinical experiences.

103 Nutrition and Health (3)
This course examines the nutritional needs throughout the life span with emphasis on nutritional principles related to health promotion and protection. Content includes assimilation, digestion and absorption of nutrients and cultural and economic influences on dietary practices.

104 Foundations in Nursing and Health (5)
Prerequisite: Biology 113, 114 and 116; Chemistry for Health Professions (or equivalent), Nursing 100, 106 may be taken concurrently. This course emphasizes critical thinking, the teaching-learning process, and foundational practice concepts. Through modular laboratory opportunities, the student acquires the basic psychomotor skills necessary to provide safe and effective nursing care to clients experiencing common physiological alterations in health. This course includes classroom, laboratory and clinical experiences.

105 Communication in the Nursing Profession (3)
Prerequisite: None. This course focuses on the development of communication abilities utilized in professional nursing. The individual's relationship with self, others, and groups is discussed. Students learn verbal and non-verbal communication skills, self-awareness, and sensitivity to others. Interpersonal skills are introduced to enable the student to develop effective human caring relationships with a diverse population of clients and colleagues.

106 Assessment of Clients in Health and Illness (3)
Prerequisite: Biology 114, Biology 116, Chemistry 5, Psychology 268, Nursing 10. This course integrates theoretical knowledge and interpersonal skills in the assessment of clients, focusing on differentiating normal from abnormal findings. It emphasizes the use of problem solving, critical thinking and cultural competency in identifying multidimensional health variations across the life span. The course includes classroom and laboratory experiences.

110 Pathophysiological Bases of Nursing Practice (3)
Prerequisite: Biology 114, Biology 116, Chemistry 5 (or equivalent), Nursing 10. Focuses on the nature of disease, its causes, and the bodily changes that accompany it. Includes a study of general principles of disease, specific diseases of individual organs and systems and the clinical implications.

111 Pharmacotherapeutics in Nursing Practice (3)
Prerequisite: Biology 114, Biology 116, Chemistry 5 (or equivalent), Nursing 10; pre/corequisite: Nursing 110. Introduces key terminology, legal foundations, general principles and clinical applications of pharmacology

200 Dimensions of Professional Nursing Practice (3)
Prerequisites: Admission to the College of Nursing as RN. Investigates the roles and responsibilities of the professional nurse within a rapidly changing health care delivery system. Key issues are explored with emphasis on health promotion and health. Graduates of diploma nursing programs will be awarded college credit for successful validation of basic nursing knowledge as part of this course.

205 Adult Health Nursing I (5)
Prerequisite: All 100 level nursing courses, Psych 268. This course focuses on the nursing care of the adult experiencing selected pathophysiological processes affecting body regulatory mechanisms. These mechanisms are related to immune responses, problems of oxygenation, ventilation, transport and perfusion; kidney function; regulatory mechanisms and digestion, absorption and elimination. Emphasis is placed on health restoration, maintenance and support as well as the continued development of the nurse-client relationship, critical thinking processes, and research-based nursing practice. This course includes classroom and clinical activities in a variety of settings.

206 Adult Health Nursing II (5)
Prerequisite: All 100 level nursing courses, Psych 268. This course focuses on the nursing care of the adult experiencing selected pathophysiological processes affecting body regulatory mechanisms. These mechanisms are related to endocrine, sensory-perceptual, gynecological, and genitourinary functions. Emphasis is placed on health restoration, maintenance and support as well as the continued development of the nurse-client relationship, critical thinking processes, and research-based nursing practice. This course includes classroom and clinical activities in a variety of settings.

207 Nursing Research (3)
Prerequisite: Nursing 373 (or equivalent). This course introduces the values and characteristics of quantitative and qualitative research within an ethical perspective. Students examine the research process through analysis and critique of nursing research.

214 Psychiatric Mental Health Nursing (4)
Prerequisite: All 100-level nursing courses; Psychology 268. Focuses on health and illness across the lifespan of clients who have acute and chronic emotional and psychosocial difficulties and psychiatric illnesses The course emphasizes development of students' decisional capabilities, self-awareness and professional behaviors as they utilize theory and research from nursing, psychology and related disciplines for the provision of nursing care to individuals, families and groups. Clinical experiences in community and acute care settings are designed for students to engage in individual and group strategies that promote and maintain mental health. Course includes classroom and clinical activities in a variety of settings.

215 Nursing of Women and Childbearing Families (4)
Prerequisite: All 100 level nursing courses, Psychology 268. Focuses on the childbearing family and women's reproductive health, including family dynamics and growth and development. Health promotion, protection, maintenance and restoration are covered in experiences that include hospital and community settings. Health care policy and systems as relevant to these populations are included. Course includes classroom and clinical activities in a variety of settings.

216 Child and Family Health Nursing (4)
Prerequisite: all 100 level nursing courses, Psychology 268. Focuses on pediatric health and illness with emphasis on family dynamics, growth and development and communication with children and their families. Health promotion, protection, restoration, maintenance and support concepts are covered in experiences that include hospital and community settings. Health care policy and systems are studied as relevant to this population. Course includes classroom and clinical activities in a variety of settings.

217 Information Systems Utilized in Health Care (3)
Prerequisite: None. This laboratory course establishes competency in health information systems. The course incorporates the impact of information systems on health care delivery.

220 Health Assessment (3)
Prerequisites: Nursing 200 and Nursing 217 (may be taken concurrently) or consent of instructor. This laboratory course focuses on the knowledge, communication abilities, and technical skills necessary for comprehensive assessment of individuals of all ages.

224 Marriage and the Family (3)
(Same as Sociology 224.) Prerequisite: Sociology 10 or consent of instructor. The study of patterns of close relationships, and how these relationships are influenced by larger social forces. Topics include: love, dating, mate selection, cohabitation, alternative lifestyles, working families, parenting, single mothers, families in crisis, domestic violence, and divorce. Universal and variable aspects of family organization, family role systems, and changes in family social structure.

300 Community Health Nursing (4)
Prerequisites: All 200-level nursing courses. This course provides a conceptual foundation for nursing that recognizes the community as client in society. The course examines socioeconomic, environmental, epidemiological, and legislative influences, ethical/legal issues, and the impact of health beliefs and practices on health promotion and protection in communities and society. The student applies various theories and concepts when encountering families, groups and communities with diverse value systems and cultural backgrounds. Course includes classroom and clinical activities in a variety of settings.

301 Family and Community Nursing (5)
Prerequisites: Nursing 200, 217 and 220. This practicum course introduces the concepts, principles, skills, and professional nursing roles essential to practice community-based professional nursing with families and groups.

304 Ethical and Legal Dimensions of Nursing Practice (3)
Prerequisites: Philosophy 156 (or equivalent). This course explores the ethical and legal dimensions of nursing practice. The relationship between ethical and legal issues is examined within nursing situations. The student participates in dialogue addressing ethical-legal issues in professional nursing practice to explore personal value, increase sensitivity to others and to develop ethical reasoning abilities.

305 Values in Professional Nursing (3)
Prerequisites: All 200-level RN/BSN nursing courses or consent of instructor. Explores values and beliefs as they shape professional nursing practice and influence clinical decision making and interventions in the evolving health care system. Attention is given to the impact of sociocultural factors and health/illness beliefs and practices of the diverse populations served by the professional nurse. Students examine their own understanding of the moral nature of professional nursing within the context of a diverse society.

308 Management and Leadership in Nursing (3)
Prerequisites: All 200-level nursing courses; Economics 40 (or equivalent). This course prepares the nurse to coordinate and manage client care in diverse health care settings. Emphasis is placed on leadership and management theory and related skills, collaboration, delegation, coordination, and evaluation of multi-disciplinary work and the application of outcome-based nursing practice.

310 Senior Synthesis (5)
Prerequisites: all 200-level nursing courses, Nursing 300 and 308 (may be taken concurrently). This course integrates theory and practice from previous nursing and general education courses with the goal of preparing the student for entry into professional nursing practice. Within a seminar context, students explore a variety of clinical and professional nursing topics. The course includes research-based strategies utilized for health promotion and protection, health restoration, maintenance and support. Areas of study are selected from across the lifespan, including diverse populations in a variety of health care systems. Course includes classroom and clinical experiences in a variety of settings. Not for graduate credit.

311 Synthesis in Nursing Practice (5)
Prerequisites: Nursing 301. This practicum course focuses on community-based application and synthesis of professional nursing roles and responsibilities with selected populations determined to be at risk for a variety of health related problems. The course includes assessment of cognitive and affective growth achieve while in the BSN Completion Program.

320 Perioperative Nursing (2)
Prerequisite: Consent of instructor. Provides experiences in preoperative, intraoperative, and postoperative settings. Includes a clinical component.

322 Transcultural Nursing (3)
Prerequisite: Consent of instructor. Examines transcultural nursing concepts, theories and practices in relationship to human caring. Focuses on application and analysis of health care and scope of practice within selected cultural contexts. Includes practicum experiences.

325 Education and the Psychology of Human Sexuality(3)
(Same as Ed Psy 325). The course is designed to provide educators and other human services personnel with knowledge and understanding of various personal and social dimensions of human sexuality.

338 Sociology of Health (3)
(Same as Sociology 338.) Prerequisites: Sociology 10 and junior standing. Exploration of social dimensions and issues related to health and illness such as access to the health care delivery system; factors influencing prevention, utilization, and compliance; changing relationships among health care providers and consumers; health care costs, trends, and cross-cultural variations.

341 Advanced Nursing Assessment and Management of Clients with Cardiac Dysrhythmias (3)
Prerequisite: Senior status. Focuses on advanced nursing assessment and management of clients with cardiac rhythm problems and conduction disturbances. Includes a clinical component.

342 Critical Care Nursing of the Adult (3)
Prerequisite: RN or completion of N 205 and 206 or equivalent. Focuses on health restoration, health maintenance, and health support of individuals with dysfunctions or trauma to major organ systems. Emphasis is on understanding pathophysiology and psychosocial processes related to nursing and collaborative interventions, and the development of a functional framework for data organization and analysis.

352 Primary Care Nursing (3)
Prerequisites: Completion of all junior level courses; Corequisite: Nursing 340. This course introduces the role of the advanced practice nurse as a principal provider of primary health care to families across the life span. Major issues relate to health care provided in a variety of community settings are addressed.

365 Women's Issues in Health Care (3)
This course is open to nursing majors and other persons interested in women's issues in health care. This seminar offers students the opportunity to explore women's issues in health care from the perspectives of both providers of health care and consumers of health care. Wellness, rather than pathology, is the emphasis of discussion of specific health care issues related to women. Student interest will determine specific issues to be examined.

370 Topics in Nursing (1-3)
Prerequisite: Consent of instructor. Explores special topics in the areas of clinical practice, nursing education, nursing administration, and professional development. No more than six hours may be taken under this option.

373 Quantitative Analysis in the Health Sciences (3)
Prerequisite: Math 30 or equivalent. This course focuses on concepts and applications of statistics in the health sciences. Topics include descriptive and inferential statistics, probability distributions of random variables, sampling and estimation. The course uses examples and content from health sciences to provide the basic concept structure for quantitative analysis.

399 Guided Study in Nursing (1-3)
Prerequisite: Consent of instructor. This course is an in-depth independent study of selected topics in nursing under the guidance of a specific instructor. No more than six hours may be taken under this option.

401 Health and Wellness in the Elderly (3)
Prerequisite: Graduate standing and consent of instructor. (Same as Gerontology 401) Factors contributing to longevity and health in old age, including genetic predisposition, lifestyle, culture, and environment are related to aspects of maintaining health and promoting wellness. Through a holistic approach, explores aspects of nutrition, exercise and activity, prevention of hazards to health, maintaining self-responsibility, managing stress, and meeting continued developmental, emotional and spiritual needs. Considers cross-disciplinary interventions to promote health and wellness in the elderly. Introduces the "Putting Prevention into Practice" model adapted to health promotion in the elderly.

405 Values in Health Care Decision Making (2)
Prerequisite: Admission to MSN program. This course explores values and beliefs as they shape professional nursing practice and influence clinical decision making. The course includes analysis of health care systems and how the values underpinning these systems influence nursing interventions and nursing care delivery.

406 Policy, Organization and Financing in Health Care (2)
Prerequisite: Admission to MSN program or consent of instructor. This course presents an overview of health care policy, organization and financing and how they impact professional nursing practice. Attention is given to the relationship between current health care trends and improving nursing health care delivery and client care outcomes.

408 Health and Society (2)
Prerequisite: Admission to the MSN program. This course addresses issues relevant to developing an understanding of the wide diversity of cultural influences on human behavior, including ethnic, racial, gender, and age differences. Emphasis is on recognizing and appropriately addressing comprehensive health care needs and implications for nursing interventions.

409NL Role of the Nurse Leader (3)
Prerequisite: Admission to the MSN program or consent of instructor. Examines roles and responsibilities of the nurse leader in a complex health care system.

409NE Role of the Nurse Educator (3)
Prerequisite: Admission to the MSN program or consent of instructor. Examines roles and responsibilities of the nurse educator in a variety of settings.

409NS/NP Role of the Clinical Nurse Specialist/Nurse Practitioner (2)
Prerequisite: Admission to the MSN program. In this course, the student explores professional role issues affecting advanced practice nurses (APNs). The course facilitates the role development of nurses who desire to function as primary care providers (nurse practitioners) or as specialists within a particular clinical area (clinical nurse specialists). Core concepts include: communication, collaboration, advocacy, negotiation, standards of practice, and subroles of advanced nursing practice.

410 Health Promotion Across the Life Span (3)
Pre or corequisite: Nursing 411, and any three of the following: Nursing 405, 406, 408, 409 (NA, NE, or NS/NP). This course is designed to provide students with a conceptual basis of health promotion and health protection for clients across the life span. Clients are conceptualized as individuals, families and populations. An application of various developmental theories for the child, adult, older adult, and family will provide the basis to individualize health care needs for various age and family groups. Core concepts include theories of health, health promotion ad protection, epidemiology, disease and injury prevention, health education, growth and development, nutrition, and family systems theory.

411 Theoretical Foundations in Nursing (3)
Prerequisite: Admission to the MSN program. This course analyzes major concepts and theories relevant to nursing. Ethical issues and dilemmas inherent in advanced nursing practice are also addressed.

412 Quantitative Methods in Nursing Research (3)
Prerequisites: Nursing 373 or equivalent; Nursing 411 (may be taken concurrently). This course provides the principles and techniques common to scientific investigation as applied to nursing. A plan of study for a nursing problem is developed.

414 Research Utilization in Nursing (3)
Prerequisites: N 412. This course prepares nurses to implement a research utilization model to validate practice. The theoretical basis for research utilization and practical instances of its application in nursing is examined. Opportunities are provided to develop a research utilization plan to address a clinical area of practice.

417 Nursing Case Analyses in Acute and Critical Care of the Elderly (3)
Prerequisite: N451, 461A or 461F. From clinical practice with elderly, case analyses of acutely and critically ill elderly are developed and discussed in seminar. This is a clinical course.

418N Physiology/Pathophysiology of the Neonate (3)
Prerequisites: Admission to the MSN Neonatal susbspecialty track or consent of instructor. Corequisite: 404N. Concepts of embryology, neonatal physiology and pathophysiology are used to provide an in-depth study of normal functioning and alteration of normal physiological functioning in cells, tissues, organs, and organ systems. Alterations form the basis for understanding a variety of pathophysiological conditions and the manifestations and impact of abnormal physiological functioning on neonates. Both generalized processes and major system dysfunctions are addressed.

418P Advanced Pediatric Pathophysiology (3)
This course focuses on embryology of the major organ systems, as well as specific physiologic and pathophysiologic processes relevant to the child from birth through age 18. Implications for advanced nursing practice which result from alterations of normal physiologic functioning in cellular, tissue, and organ systems are examined. Emphasis is placed on the relationship between pathophysiology, decision making, and standards of advanced nursing practice.

420 Nursing Program and Curriculum Development (3)
Prerequisite: Nursing 409NE. Identifies and analyzes factors that detemine content and organization of curricula in nursing programs and health care agencies. Addresses principles and processes for initiating and revising curricula. Examines systematic evaluation of curriculum at all levels.

421 Instructional Strategies in Nursing Education (3)
Prerequisite: Nursing 420 or consent of instructor. Focuses on analysis and development of teaching and learning strategies and skills in nursing education. Considers relationship of content and learning style to instructional methods utilized. Attention given to integration of technology in instructional design and delivery. Techniques for evaluating learner and teacher also explored.

424 Health Assessment for Advanced Nursing Practice (3)
Prerequisite: N 418 (may be taken concurrently). Designed to provide a systematic approach to the advanced assessment of physiological, psychological, sociocultural, developmental and spiritual assessment of individuals across the lifespan. This course builds on basic health assessment knowledge and skills, emphasizing advanced assessment skills, laboratory work interpretation, validation, documentation and analysis of assessment findings.

424N Advanced Health Assessment of the Neonate (3)
Prerequisites: Admission to MSN Neonatal option or consent of instructor; Nursing 418N may be taken concurrently. A developmental and systematic approach to the advanced assessment of physiological, psychological, sociocultural and developmental aspects of the fetus, mother in the prenatal period, and the neonate is discussed. This approach builds on basic assessment skills and emphasizes perinatal, genetic, and embryologic factors impacting neonatal development. Ways to assess the pregnant woman for problems, the use of special diagnostic tests, and the assessment of the neonate also are explored. Forty hours of laboratory/clinical activities during the semester, which provide opportunities to implement various assessment and diagnostic procedures, complete appropriate health histories, perform complete physical examinations, and complete a perinatal history are required.

425 Managed Care Services (3)
Prerequisite: Admission to MSN or consent of instructor. Provides analysis of health care environment in managed care and its impact on nurse's role.

426 Health Resources Management (3)
Prerequisite: Nursing 409 NL. Focuses on roles and responsibilities of nurse leader for fiscal and human resource management in both public and private sectors. Includes analysis of environment, health care organization within the system, and impact of resource management on nursing and health care.

427 Pharmacology for Advanced Nursing Practice (3)
Prerequisite: Nursing 418 or equivalent or consent of instructor. This course centers on clinical pharmacotherapeutics used for primary health care management. Emphasis is placed on the clinical use of drugs in the management of specific illnesses.

427N Pharmacology for the Neonate (3)
Prerequisites: 418N or consent of the instructor. Pharmacological agents used in the management of neonates are discussed. Pharmacologic principles are reviewed and applied to the use of drugs in the level II or III NICU. The clinical use of drugs in the management of specific illnesses of the neonate are explored. In addition, legal considerations for the Advanced Practice Nurse are stressed.

428 Theory and Practice in Nursing Leadership (3)
Prerequisite: Nursing 409NL. Focuses on theories and practices of advanced nursing leadership and management within complex health care organizations.

439 Adult Primary Care I: Diagnosis & Management in Advanced Nursing Practice (5)
Prerequisites: N 405, 406, 408, 410, 411, 412, 418, 424, 427; N409NS/NP & N 414 may be taken concurrently. Clinical course designed to provide a theoretical and practical base for advanced practice nursing students to diagnose and manage health problems of adults. Emphasis is placed on clinical assessment and decision-making in the provision of direct patient care within a defined scope of practice. The student is expected to clinically apply the concepts and theories discussed in class in the advanced nursing care of adults who are experiencing problems related to the upper and lower respiratory system, cardiovascular system, gastrointestinal system, skin and infectious diseases. Clinical experiences are designed to enhance assessment and technical skills needed in diagnosing common health problems.

440 Adult Primary Care II: Diagnosis & Management in Advanced Nursing Practice (5)
Prerequisites: N 439. Clinical course designed to provide a theoretical and practical base for advanced practice nursing students to diagnose and manage health problems of adults. Emphasis is placed on clinical assessment and decision-making in the provision of direct patient care within a defined scope of practice. The student is expected to clinically apply the concepts and theories discussed in class in the advanced nursing care of adults who are experiencing problems related to the musculoskeletal, neurological, endocrine/metabolic, genitourinary, reproductive systems, the eye, and mental health. Clinical experiences are designed to enhance assessment and technical skills needed in diagnosing common health problems.

441 Family Health I: Diagnosis & Management in Advanced Nursing Practice (5)
Prerequisites: N 406, 406, 408, 410, 411, 412, 418, 424, 427; N 409 NS/NP & N 414 may be taken concurrently. Clinical course designed to provide students with the opportunity to gain the concepts and skills essential to advanced practice nursing care of families experiencing acute and chronic health problems, with particular focus on women's and children's health issues. Emphasis is given to those health needs most commonly encountered by the Family Nurse Practitioner. A research- and theory-based approach to nursing interventions is used. Core concepts include family adaptation to acute and chronic conditions, health promotion, clinical decision-making and ethical decision-making.

442 Family Health II: Diagnosis and Management in Advanced Nursing Practice (5)
Prerequisites: N 441. Clinical course designed to provide students with the opportunity to gain the concepts and skills essential to advanced practice nursing care of families experiencing acute and chronic health problems, with particular focus on adult clients. Emphasis is given to those health problems most commonly encountered by the Family Nurse Practitioner. A research- and theory-based approach to nursing interventions is used. Core concepts include family adaptation to acute and chronic conditions, health promotion, clinical decision-making, and ethical decision-making.

443 Child Health I: Diagnosis & Management in Advanced Nursing Practice (5)
Prerequisites: N 405, 406, 408, 410, 411, 412, 418, 424, 427; N409 NS/SP & N 414 may be take concurrently. Clinical course designed to provide students the opportunity to apply skills from advanced physical assessment, pathophysiology, pharmacology, and theory to advanced nursing care of the child and family. Emphasis is placed on child and family developmental issues for advanced practice pediatric nurses. Normal cognitive, motor, social/emotional and language development and usual developmental challenges of each age group are addressed. Implications of the developmental stage of the child and family, level of developmental skill and developmental problems for the maintenance of health and management of illness by the advanced practice nurse are discussed. Core content includes information related to APN management of cultural and ethnic variations of growth and development problems; health maintenance; common pediatric behavioral problems; and recognition of circumstances that require interdisciplinary collaboration and referral. Clinical practice opportunities are arranged in collaboration with the instructor and planned in a variety of pediatric settings.

444 Child Health II: Diagnosis & Management in Advanced Nursing Practice (5)
Prerequisite: N 443. Clinical course designed to provide students the opportunity to apply skills from advanced physical assessment, pathophysiology, pharmacology, and theory to advanced nursing care of the child and family. Emphasis is placed on using models and theories that guide advanced practice care for clients with common pediatric problems. Implications of the developmental stage of the child and family, level of developmental skills and developmental problems for the maintenance of health and management of illness by the APN nurse are discussed. The SOAP format is used and includes pertinent history, physical examination, laboratory findings and differential diagnosis relevant to the individual client. Focus is on development of a plan of care that encompasses the various treatment modalities used in managing common pediatric health problems including specific pharmaceutical and symptomatic treatment. Clinical practice opportunities are arranged in collaboration with the instructor and planned in a variety of pediatric settings.

446 Women's Health I: Diagnosis & Management in Advanced Nursing Practice (5)
Prerequisites: N 405, 406, 408, 410, 411, 412, 418, 424, 427; N409 NS/SP & N 414 may be take concurrently. Clinical course designed to provide students the opportunity to apply knowledge and skills from advanced physical assessment, pathophysiology, pharmacology, and theory to advanced nursing care of women and families throughout the childbearing continuum. Emphasis is placed on using models and theories that guide advanced nursing practice and research-based care. Focus is on educating the advanced practice nurse to collaborate with women and their families to promote health and prevent disease. Within this context, the focus is on assessing, diagnosing, and planning care for women and families experiencing an uncomplicated childbearing continuum, as well as acute and/or chronic health care problems during preconception, pregnancy and the postpartum period, within a health promotion framework. The format includes pertinent history, physical examination, laboratory findings and differential diagnoses relevant to the individual client. Core concepts include adaptation of women through developmental stages, health risk assessment, health promotion, disease prevention, health education, primary care of women throughout the childbearing continuum, reproductive options, ethical decision-making, and grief and loss.

447 Women's Health II: Diagnosis & Management in Advanced Nursing Practice (5)
Prerequisite: N 446. Clinical course designed to provide students the opportunity to apply knowledge and skills to advanced practice nursing care of women and families throughout the lifespan. Emphasis is placed on using models and theories that guide advanced nursing practice and research-based care. Focus is on educating the advanced practice nurse to collaborate with women and their families to promote health and prevent disease. Within this context, the focus is on assessing, diagnosing, and planning care for women, as well as women experiencing common health problems within a health promotion framework. The format includes pertinent history, physical examination, laboratory findings and differential diagnoses relevant to the individual client. Core concepts include adaptation of women through developmental stages, health risk assessment, health promotion, disease prevention, health education, primary care of well women, ethical decision-making, and grief and loss. Focus is on the development of a plan of care that encompasses the various treatment modalities used in managing common women's health problems including specific pharmacological and non-pharmacological therapies.

448 Neonatal Nursing I (3)
Prerequisites: Nursing 424N, 427N, 418N or consent of instructor; Nursing 449 may be taken concurrently. The first of two courses that integrate physiologic, pharmacologic, and assessment skills and principles in determining appropriate care of the ill neonate. Current research and evidenced-based practices are used as the course framework. The effects of critical conditions on the growth and development of the neonate, including subsequent chronic health problems as well as the short and long term consequences to the child's family are emphasized. Disorders of the central nervous, pulmonary, and cardiovascular systems will be discussed. The use of specific interventions and diagnostic procedures are demonstrated and applied in laboratory/clinical settings during 40 hours of required clinical activities.

449 Neonatal Nursing II (3)
Prerequisites: Nursing 424N, 427N, 418N or consent of instructor; Nursing 448 may be taken concurrently. The second of two courses that integrate the physiologic, pharmacologic, and assessment skills and principles in determining appropriate care of the ill neonate. Current research and evidence-based practices are used as the framework. The effects of critical conditions on the growth and development of the neonate, including subsequent chronic health problems as well as the short and long term consequences to the child's family are emphasized. Disorders of the gastrointestinal, renal, endocrine, hematologic, musculoskeletal, opthalmologic, dermatologic and immune systems will be discussed. The use of specific interventions and diagnostic procedures are demonstrated and applied in laboratory/clinical settings during forty hours of required clinical activities

451 Nursing Assessment of the Elderly (3)
Prerequisite: N404. Practice in adaptations of the traditional health history and physical examination of adults is addressed in this course focusing on the elderly. This is a clinical course, requiring a geriatric physician or advanced practice nurse preceptor.

452 Synthesis Practicum (3)
Prerequisites: All required courses in Nurse Educator or Nursing Leadership of Health Systems option or consent of instructor. Serves as opportunity to operationalize role of nurse educator or nurse leader in selected academic and/or clinical settings. Includes frequent clinical seminars.

454A Advanced Practice Nursing: Internship I (2)
Prerequisite: All required courses in the Advanced Practice Nurse option or consent of instructor; may be taken concurrently with Nursing 454B. Provides opportunity to initiate the Advanced Practice Nurse role with selected populations. Students participate in precepted experiences with clinical nurse specialists, certified nurse practitioners, and/or primary care physicians for a minimum of 225 hours. Frequent clinical seminars included.

454B Advanced Practice Nursing: Internship II (2)
Prerequisite: All required courses in Advanced Practice Nurse option or consent of instructor; may be taken concurrently with Nursing 454A. Students satisfy a minimum of 225 precepted hours with clinical nurse specialists, certified nurse practitioners, and/or primary care physicians and participate in frequent clinical seminars.

454C Advanced Practice Nursing: Internship III (2)
Prerequisite: All required courses in the Advanced Practice Nurse neonatal option or consent of instructor; may be taken concurrently with Nursing 454A and Nursing 454B. Serves as culminating precepted experience for students enrolled in the neonatal nurse practitioner option. Students work within Level III neonatal unit with certified neonatal nurse practitioners and/or neonatologists for a minimum of 150 clinical hours. Must be taken final semester of study.

457 Qualitative Methods in Nursing Research (3)
Prerequisites: Nursing 450; 455 or equivalent. This course introduces the skills necessary to understand and conduct qualitative research in nursing. Emphasis is placed on utilization of qualitative research methods in the study of selected nursing problems.

462 Nursing Case Analyses in Long-term Care of the Elderly (3)
Prerequisite: N451, 461A or 461F. From clinical practice with the elderly, nursing case analyses in long-term care of commonly living/frail elderly and nursing care of elderly in residential long-term care are developed. This is a clinical course, requiring an approved preceptor.

.470 Special Topics in Advanced Practice Nursing (1-3)
Prerequisite: Consent of Instructor. Explore special topics for the advanced practice nurse in the areas of research, theory, education and administration. No more than three hours shall be applied toward the degree. This course is for graduate MSN or Ph.D. levels.

473 Measurement of Nursing Phenomenon (3)
Prerequisites: N 445. The theoretical basis of measurement is presented in a foundation for the development and evaluation of measurement instruments and procedure for use in nursing research. Content is presented regarding measurement theories, techniques of construction, statistical analysis of reliability and validity and strengths and limitations of selected measures of nursing research.

475 Special Study in Graduate Nursing (1-3)
Prerequisites: Admission to the MSN program and/or consent of the instructor. In-depth study of selected topics in nursing under the guidance of a specific instructor. No more than three hours may be applied to the master's program of study.

477 Thesis/Directed Research Seminar (1)
Prerequisites: Nursing 455 and permission of thesis/directed research chair. Presentation and discussion of selected research problems in nursing.

478 Directed Research (1-6)
Prerequisites: Nursing 455 and permission of faculty research adviser. Individual participation in the investigation of a research problem of relevance to nursing under the direction of a faculty research adviser.

479 Research Thesis (1-6)
Prerequisites: Nursing 455 and permission of faculty. Individual investigation of a research problem of relevance to nursing. Student works under the direction of a faculty committee to prepare and orally defend a thesis.

480 Guided Nursing Research Seminar (3-6)
Prerequisites: Advanced graduate status and/or consent of instructor. Provides opportunity to work in collaboration with senior faculty and peers on a focused research topic relevant to nursing. May be repeated twice on unduplicated topics.

481 Nursing Theory Analysis and Development (3)
Prerequisites: Admission to Ph.D. in Nursing Program and N450 or equivalent. This course examines foundations of nursing using both traditional and hermeneutic methods of theory analysis and evaluation. Relevant historical and contemporary writings are analyzed.

485 Nursing Research I: Quantitative Methods in Nursing Research (3)
Prerequisites: Admission to the Ph.D. in Nursing program. Focuses on quantitative research methods appropriate for nursing. Students examine research questions related to nursing phenomena and methods to address these questions. This course is designed to provide in-depth analysis of research design including such areas s measures, designs and interpretation. There is an emphasis on outcomes research related to relevant clinical nursing problems.

487 Integrative Review of Nursing Literature (3)
Prerequisites: Admission to Ph.D. in Nursing program and consent of instructor. Focuses on critical analysis of theoretical and conceptual models that are commonly used as a basis for nursing research projects. Students examine the frameworks that are commonly used to guide research on nursing problems. Students prepare an integrative research review, including areas such as conceptual models, measurement, statistical analysis and interpretation of findings.

488 Qualitative Methods in Nursing Research (3)
Prerequisites: N 485 and 486 or consent of instructor. Explores qualitative research methods used to build nursing's body of knowledge. Emphasis is placed on design, data generation and analysis, and dissemination of findings. Issues regarding qualitative research are identified and analyzed in respect to traditional and emerging designs.

490 Nursing Research II: Advanced Methods in Nursing Research (3)
Prerequisites: N 485. Focuses on advanced methods in nursing research that are applied in the student's preparation of a National Research Award Grant Application. Peer and faculty panels assist students in the critique and revision of their grant applications. Designed to provide students with hands-on experience in the preparation of grant applications that focus on outcomes research related to relevant clinical nursing problems.

491 Nursing Theory Analysis and Development (3)
Prerequisites: N 487. Examines conceptual and theoretical development in nursing through in-depth scholarly inquiry. A concept map showing relationships between and among terms in accomplished.

492 Nursing Research II: Quantitative Analysis of Nursing Data (3)
Prerequisites: N 490. Consolidates prior knowledge of quantitative analysis methods as applied to nursing phenomena, focusing on design and analysis issues that affect validity. Techniques commonly used in the analysis of health data are considered.

493 Psychometrics (3)
Prerequisites: N490 and doctoral level statistics course and/or consent of instructor. Focuses on application of psychometric theories and practices related to instrumentation in nursing research. Basic methodologies and techniques for constructing, testing, and evaluating instruments will be discussed and applied. Content will focus on theoretical foundations of measurement, item construction, instrument design, item analysis, validity and reliability assessment. Criteria for evaluating existing instruments will also be discussed.

494 Structural Equation Modeling (3)
Prerequisites: Working knowledge of SPSS and consent of instructor. An advanced seminar in statistical techniques commonly used in nursing data analysis. Students develop a working knowledge of several covariance-modeling techniques including path analysis, confirmatory factor analysis and covariance structural modeling.

498 Doctoral Seminar (1-12)
Prerequisites: Admission to Ph.D. in Nursing Program and consent of instructor. Presentation and discussion of pertinent methodological and clinical issues related to doctoral candidate's research. Continuous enrollment is required.

499 Dissertation Research (1-12)
Prerequisites: All required course work; successful completion of written comprehensive examination. . Investigation of an advanced nature culmination in successful defense of dissertation. Continuous registration is required.

School of Optometry

Faculty

Larry J. Davis, Associate Professor*, Acting Dean
O.D., Indiana University; Residency, Contact Lenses, University of Missouri-St. Louis
Gerald A. Franzel, Clinical Associate Professor, Associate Dean for Clinical Education, Continuing Education and Community Relations
O.D., University of Houston
Carol K. Peck, Professor*, Director, Graduate Programs
Ph.D., Postdoctoral Fellow, University of California-Los Angeles
Ralph P. Garzia, Associate Professor*, Director, Optometric Services
O.D., Residency, Pediatric Optometry, Pennsylvania College of Optometry
W. Howard McAlister, Associate Professor*, Director, Residency Programs
M.A., Webster College, M.P.H., University of Illinois at the Health Sciences Center - Chicago, O.D., The Ohio State University
Jerry L. Christensen, Professor*
O.D., Ph.D., The Ohio State University
William G. Bachman, Associate Professor*
M.S., University of Alabama-Birmingham, O.D., Southern College of Optometry
Carl J. Bassi, Associate Professor*
Ph.D., Vanderbilt University, Postdoctoral Fellow, University of Southern California, Doheny Eye Institute
Edward S. Bennett, Associate Professor*; Co-Chief, Contact Lens Service; Faculty Coordinator, Student Affairs
M.S.Ed., O.D., Indiana University-Bloomington
Vasudevan Lakshminarayanan, Associate Professor*
M.Sc., University of Madras, India, Ph.D., University of California-Berkeley
William F. Long, Associate Professor*, Coordinator of Photographic Service
Ph.D., Michigan State University, O.D., Indiana University
Timothy A. Wingert, Associate Professor*, Chief, Primary Care Service, Deputy Director, Optometric Service
O.D., Illinois College of Optometry
David Campbell, Adjunct Associate Professor
M.D., Saint Louis University, M.Ed., Temple University
Vinita A. Henry, Clinical Associate Professor; Co-Chief Contact Lens Service
O.D., Residency, Contact Lenses, University of Missouri-St. Louis
Raymond I. Myers, Clinical Associate Professor, Director, East St. Louis Eye Center
O.D., Indiana University
Leonard L. Naeger, Adjunct Associate Professor of Pharmacology
Ph.D., University of Florida; Residency, Hospital-Based Pharmacy, VA Medical Center, St. Louis
Larry G. Brown III, Clinical Assistant Professor
O.D., Residency, Geriatric Optometry, University of
Lisa Harmel Chabot, Clinical Assistant Professor
O.D., Residency, Family Practice, University of Missouri-St. Louis
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O.D., Illinois College of Optometry
Lisa Dibler, Clinical Assistant Professor
O.D., University of Missouri-St. Louis
Gail B. Doell, Clinical Assistant Professor
O.D., University of Missouri-St. Louis
Aaron S. Franzel, Clinical Assistant Professor, Chief Pediatric/Binocular Vision Service
O.D., University of Missouri-St. Louis
Mark J. Germain, Clinical Assistant Professor
O.D., Residency, Low Vision, University of Waterloo, Canada
Steven J. Grondalski, Clinical Assistant Professor, Coordinator, Co-Management Services
O.D., Pennsylvania College of Optometry, Residency, VA Medical Center, Wilkes Barre, PA
Alexander J. Harris, Clinical Assistant Professor, Chief, Externship Program, Coordinator of Minority Affairs,
M.A., Washington University, O.D., University of Missouri-St. Louis
Monica J. Harris, Clinical Assistant Professor,
O.D., University of Missouri-St. Louis
Residency, Pediatrics and Binocular Vision, Southern College of Optometry, Memphis TN
Beth A. Henderson, Clinical Assistant Professor
O.D., The Ohio State University
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O.D., Illinois College of Optometry
Bruce Morgan, Clinical Assistant Professor
O.D., Northeastern State University
Sean P. Mulqueeny, Clinical Assistant Professor
O.D., University of Missouri-St. Louis
Lori L. Paul, Adjunct Assistant Professor
Ph.D., Washington University
Michael Railey, Adjunct Assistant Professor
M.D., University of Missouri
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O.D., University of Missouri-St. Louis; Residency, V.A. Medical Center, St. Louis, MO
Scott Soerries, Adjunct Assistant Professor
M.D., University of Missouri
Helen D. Walters, Adjunct Clinical Assistant Professor
D.O., University of Osteopathic Medicine - Iowa
Jeffrey L. Weaver, Clinical Assistant Professor
M.S., The Ohio State University, M.B.A., Drury College, O.D., Pennsylvania College of Optometry, Residency, Family Practice, The Ohio State University

*members of Graduate Faculty

Off-Campus Adjunct Faculty

Joseph H. Maino, Clinical Associate Professor
O.D., Illinois College of Optometry; Residency, Rehabilitative Optometry, VA MEDICAL Center, Kansas City
Francis E. O'Donnell, Jr., Clinical Associate Professor of Ophthalmology, M.D., Johns Hopkins University, Residency, Ophthalmology, Wilmer Institute, Johns Hopkins University
Paul Ajamian, Clinical Assistant Professor
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Ronald Bateman, Clinical Assistant Professor
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O.D., Southern College of Optometry
James M. Gordon, Clinical Assistant Professor of Ophthalmology
M.D., University of Minnesota, Residency, Ophthalmology, Washington University, Barnes Affiliated Hospitals
Timothy Harkins, Clinical Assistant Professor
O.D., Southern California College of Optometry
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Residency, Opthamology, Washington University
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O.D., University of Missouri-St. Louis
Alpha Patel, Clinical Assistant Professor
O.D., Pacific University
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O.D., Indiana University
Gary Vogel, Clinical Assistant Professor
O.D., Illinois College of Optometry
Donald E. Walter, Clinical Assistant Professor
O.D., University of Houston
Jack Yager, Clinical Assistant Professor
O.D., The Ohio State University
Natalie Yampolsky, Clinical Assistant Professor
O.D., Illinois College of Optometry

General Information

The UM-St. Louis School of Optometry enrolled its first class in 1980, graduating 32 students in May 1984. The school is located on the South Campus complex of the University of Missouri-St. Louis at 7800 Natural Bridge Road. A modern five-story building houses the school's classrooms, laboratories, research facilities, administrative offices, library, and the Center for Eye Care campus facility (the University Eye Center).

The University Eye Center located on campus is open to the public, as well as to the faculty, staff, and students of the university. The primary goal of the center is to provide patients with high-quality vision care. This purpose is consistent with the overall goal of training well-qualified eye care practitioners.

In addition to the University Eye Center, the school operates the Optometric Center of St. Louis, a comprehensive optometric eye care facility in the Central West End of the city 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.

Situated in Missouri's largest metropolitan area, the school enjoys the city's strong community and professional support. The urban setting offers many opportunities for outreach programs, expanding the scope of optometric education and making available highly diverse programs of clinical training. Another asset of the school is the location of the national headquarters of the

American Optometric Association and the College of Optometrists in Vision Development, approximately twelve miles from the campus.

The curriculum leading to the doctor of optometry degree is a four-year, full-time program of study. The first year of the professional curriculum stresses optics and basic health sciences and introduces students to optics of the visual system. The second year covers vision science and training in eye examination techniques. The third year emphasizes patient care and introduces the student to various specialty areas within optometry, such as contact lenses, pediatric and geriatric vision care, binocular vision and vision training, and low vision rehabilitation. The second and third years also include course work and clinical training in ocular disease and pharmacology. The fourth year provides additional patient care experiences and includes rotations through a variety of outreach programs, giving the student added experience in the treatment of eye diseases, as well as valuable experience in other optometric clinical specialties.

Fourth-Year Externship Program

In addition to the patient care experiences available through the University Center, Optometric Center, and the East St. Louis Center, the School of Optometry has an externship program. When the faculty determines that students have reached a level of proficiency, they are approved for the externship program. Students must receive approval from the faculty and the director of externships for assignments to each externship site. This program allows fourth-year students to spend a portion of their final year of training in a variety of patient care environments, i.e. military bases, Veteran Administration hospitals, Indian Health Services hospitals, various speciality practices and private practices.

These eight-week externships are selected and scheduled according to the individual student=s interest, needs and future practice intentions. In this program, students leave the academic environment and begin working with selected practicing optometrists while continuing to be monitored by the centers through weekly reports of all patient experiences and activities.

Currently, the following externships are available: Colorado Optometric Center, Denver, CO; Eye Health Care Associates, Ltd., St. Louis, MO; Grace Hill Neighborhood Health Center, St. Louis, MO; Missouri Eye Institute, Springfield, MO; Missouri Eye Institute, St. Louis, MO; O'Donnell Eye Institute, St. Louis, MO; Omni Eye Services of Colorado, Denver, CO; Omni Eye Services of Georgia, Atlanta, GA; Scott Air Force Base, Scott AFB, IL; St. Louis Comprehensive Neighborhood Health Center, St. Louis, MO; Veteran's Administration, Columbia, MO; Veteran's Administration, Kansas City, MO; Veteran's Administration, Marion, IL; Veteran's Administration, Marion, IL; Washington University Eye Center, St. Louis, MO; Carl Albert Indian Health Service, Ada, OK.

Students may arrange their own off-campus clinical experiences with the approval of the director of externships.

In 1986 the Missouri Optometry Practice Act was revised by the state legislature to include treatment of certain eye diseases utilizing pharmaceutical agents. Thus optometry students at UM-St. Louis are uniquely situated to receive excellent training in this aspect of optometric practice. Roughly half of the states in the United States now have laws authorizing optometrists to prescribe drugs in the treatment of certain eye diseases. The training and clinical experience optometry students receive at UM-St. Louis in the diagnosis, treatment, and management of ocular disease is excellent and qualifies UM-St. Louis graduates to practice optometry in any state in the nation.

A student who satisfactorily completes all four years of the professional curriculum will be eligible to receive the doctor of optometry degree.

The School of Optometry is a member of the Association of Schools and Colleges of Optometry and is accredited by the Council on Optometric Education of the American Optometric Association, the official optometric agency recognized by the National Commission on Accrediting and by the International Association of Boards of Examiners in Optometry.

All optometry students enrolled in the University of Missouri-St. Louis School of Optometry are eligible for membership in the student optometric association, which is affiliated with the American Optometric Association. Through this organization, students become involved in local and national optometric activities. The organization provides an environment for the cultivation of professional leadership skills, and members have organized and participated in a variety of community service activities, including community health screenings and vision care to residents of nursing homes, convalescent hospitals, and mental institutions. Furthermore, optometry students have formed local chapters of SVOSH (Student Volunteer Optometric Services to Humanity), an international organization of optometrists providing free vision care to people in impoverished nations, and the NOSA (National Optometric Student Association), which strives to recruit minority students into optometry and encourages retention of minority students.

In addition to the many activities through the School of Optometry, optometry students are able to take advantage of all the activities provided by the university to the entire university community. These include intramural sports, movies and cultural activities, a modern, fully-equipped

gymnasium, and access to many social and cultural opportunities in St. Louis at reduced cost.

Admission Requirements
Semester:
English - 2
Biology (including laboratory)* - 2
Physics (including laboratory) - 2
Chemistry
General (including laboratory) - 2
Organic (including laboratory) - 1
Mathematics**
Calculus - 1
Statistics - 1
Psychology - 2
Social and Behavioral Sciences - 2 or

Quarter:
English - 3
Biology (including laboratory)* - 3
Physics (including laboratory) - 3
Chemistry
General (including laboratory) - 3
Organic (including laboratory) - 2
Mathematics **
Calculus - 1
Statistics - 1
Psychology - 2
Liberal Arts - 2

*One semester (or one quarter) of microbiology with laboratory is a requirement.

** Trigonometry as a prerequisite course for calculus must be completed in high school or college.

All courses used to satisfy the admission requirements must have been taken at a fully accredited institution or must be acceptable by an accredited institution toward degree credit. Specific prerequisite courses must be taken for a letter grade; they cannot be taken as an audit or on a pass/fail or satisfactory/unsatisfactory basis. Applicants must have completed 90 semester or 135 quarter hours (the equivalent of three years of college education) before the start of classes. The applicant cannot apply more than 60 semester hours or 90 quarter hours which were earned at a two-year institution toward the credit-hour requirement. Applicants holding a bachelor's degree will be given preference over applicants with similar academic credentials who do not have a degree. Applicants to the school come from a variety of undergraduate backgrounds, such as biological sciences, psychology, education, and business.

Admission Test
All applicants are required to take the Optometry Admission Test (OAT). The OAT is offered each year in February and October. Results are sent to the applicant and schools of optometry approximately six to eight weeks after the date of

testing. Official test scores are acceptable for up to three years from the testing date.

Applicants are encouraged to take the examination in February or October of the year preceding anticipated application to the School of Optometry. If applicants wish to enhance their scores, they are encouraged to repeat the examination. For an OAT application packet and additional information, contact:

Optometry Admission Testing Program
211 East Chicago Ave.
Chicago, IL 60611
(312) 440-2693.

Application Procedures
The Admissions Committee begins to process applications on August 1 for the class entering the following year. An applicant's file will be considered complete and ready for consideration by the Admission Committee when the following material has been received:

- Application.
- $50 non-refundable application fee.
- Official high school and college transcripts, followed by updated transcripts as they become available.
- Academic record form.
- Official Optometry Admission Test (OAT) results.
- A composite evaluation prepared by the preprofessional advisory committee at the educational institution the applicant is attending. Those applicants not currently attending college or who are at an institution that does not offer a committee evaluation will be required to submit four letters of recommendation.

Note: Faxed letter of recommendations and/or transcripts will not be accepted.

In addition to the standard application procedures, prospective students living outside the United States and its possessions must take the TOEFL. A student with a total TOEFL score below 650 will not be admitted to the School of Optometry.

Applications are processed and considered as they are received. Applicants are encouraged to begin the admissions process approximately one year in advance of their planned entrance date. Early submission of applications is encouraged.

Applications must be complete by March 15 to be considered for admission to the class entering in August of the same year. Application materials received after

March 15 will not be evaluated for the class entering in August of the same year.
All correspondence and inquiries, including transcripts, should be addressed to: Admissions Committee, School of Optometry, University of Missouri-St. Louis, 8001 Natural Bridge Road, St. Louis, Missouri 63121-4499, (314) 516-6263.

Selection Procedures
The Admissions Committee has the responsibility to review and evaluate all applicants and select the best qualified candidates. The committee considers: an applicant's overall grade point average, the grade point achieved in the sciences, any grade trends over the years in college, and the scores on the OAT. Concurrently, candidates are evaluated on less quantitative measures such as extracurricular activities and interests, related or unrelated work experience, written narrative, and letters of recommendation.

Those applicants whom the committee feels to be most competitive will be scheduled for an on-campus interview. The on-campus interview facilitates the committee's assessment of the applicant's interests, motivation, and personal characteristics. In addition, the on-campus interview allows the applicant to tour the facilities, meet with currently enrolled students, have questions answered regarding financial aid and housing, and learn more about the school. From this group of interviewed applicants, the entering class will be selected. The policies of the University of Missouri-St. Louis and the School of Optometry 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.

Acceptance Procedures
Students accepted for admission will begin receiving notices of acceptance in December prior to the year of anticipated matriculation. Notices of acceptance may be received as late as the following June. If acceptance to the class is conditional, the terms of the condition must be completed prior to matriculation. Applicants who have indicated that degree requirements will be completed prior to matriculation, and who have been selected for admission, may receive a conditional offer of acceptance contingent upon completion of the degree.

Students offered Admission have ten days from the date on the offer of admission to make a required $200 nonrefundable holding deposit.

UM-St. Louis Honors College Scholars Program
A cooperative program offered by the School of Optometry and the Pierre Laclede Honors College allows students to complete both their undergraduate and professional studies in a total of seven years. This program offers professional and academic advisement by School of Optometry faculty throughout the Honors College undergraduate experience, as well as offering early exposure to clinically related activities and participation in Optometry student association activities. The Scholars Program enables the UM-St. Louis Honors College undergraduate student to apply for formal admission to the School of Optometry after completion of Optometry prerequisites and three years at the Honors College.

Financial Aid
The University of Missouri-St. Louis maintains an Office of Student Financial Aid to assist eligible students in financing their education when their own and/or their families> resources are insufficient for this purpose. For information regarding available sources of student financial assistance contact: Student Financial Aid, 209 Woods Hall, University of Missouri-St. Louis, 8001 Natural Bridge Road, St. Louis, Missouri 63121-4499, (314) 516-5526. Scholarship and financial aid information is available and given to prospective students during the pre-interview process.

Fees
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 in Woods Hall. 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.

Education Fees (1999-00)
All students enrolled in the university must pay education fees based on either the schedule for Missouri residents or the schedule for nonresidents which follows.

Optometry Educational Fee

Regular Semester
Missouri Residents $442.50 per credit hour
($7,080.00 maximum for 16 credit hours)
*Nonresidents $890.00 per credit hour
($14,240.00 maximum for 16 credit hours)

All students are required to pay the following fees each semester: Instructional Computer Fee $8.60 per credit hour; Student Facility, Activity and Health Fee $24.10 per credit hour ($289.20 maximum for 12 or more credit hours).

Summer Session
A summer session is required between the third and fourth professional year. The education fee per credit hour for these sessions follows the same schedule as listed previously.

***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 fees.

Residence
Currently, five nonresident positions are allocated by state reciprocal agreements for residents of Kansas. Individuals who are admitted under these agreements will pay reduced educational fees. For additional information, contact: Optometry Program, Kansas Board of Regents, 700 S.W. Harrison, Suite 1410, Topeka, KS 66603 (785)296-3517.

Optometry students will be required to pay nonresident educational fees if they do not meet the university's residency requirements at the time of their enrollment. The definition of "residency" is outlined in the pamphlet *Tuition and Residency Rules* available from the Cashier's Office, (314) 516-5151.

Four-Year Professional Degree (O.D.) Curriculum

First Year
Fall Semester
504, Neuroanatomy
505, Geometric Optics
506, Practice Management I
508, Human Anatomy and Physiology
512, Biochemistry

Winter Semester
513, Physical Optics and Photometry
514, Clinical Optometry I
515, Ocular Optics
516, Physiological Optics Laboratory
517, Ocular Motility
518, Anatomy and Physiology of the Eye
519, Physical Optics and Photometry Lab

Second Year
Fall Semester
520, Ophthalmic Optics
521, Clinical Optometry II
522 Systemic Disease
524, Monocular Sensory Processes
541, Practice Management II
555, General Pharmacology

Winter Semester
530, Ophthalmic Dispensing
531, Clinical Optometry III
532, Binocular Vision and Space Perception
533, Ocular Disease I
535, Epidemiology

Third Year
Fall Semester
550, General Clinic I
553, Contact Lenses I
554, Binocular Vision Anomalies
556 Ocular Disease II

558, Geriatric Optometry
596, Public Health

Winter Semester
557, Environmental Vision
559, Ophthalmic Lasers
560, General Clinic II
561, Pediatric/Binocular Vision Specialty Clinic
562, Contact Lenses Specialty Clinic
563. Contact Lenses II
564, Low Vision
566, Ocular Assessment
567, Pediatric Optometry
582, Practice Management III

Fourth Year
Category I UM-St. Louis
Note: Must enroll in 573, 574, and 575, concurrently.
573, UM-St. Louis Pediatric/Binocular Vision Patient Care
574, UM-St. Louis Contact Lens Patient Care
575, UM-St. Louis Co-Management Patient Care

Category 2 Institutional
586, External Rotation in Institutional Patient Car

Category 3 Ocular Disease
585, External Rotation in Ocular Disease Patient Care

Category 4 Internal
Note: Must enroll in 576 and 577 concurrently
571, Community Service Rotation in Patient Care
572, East St. Louis Center Patient Care **and/or**
576, Optometric Center Patient Care
577, Optometric Center Low Vision Patient Care

Category 5 Specialty
578, External Rotation in Contact Lens Patient Care
579, External Rotation in Pediatric/Binocular Vision Patient Care
592, External Rotation in Low Vision Patient Care

Category 6 Elective
570, External Rotation in General Patient Care
580, Supplementary Rotation in General Patient Care
581, External Supplementary Rotation in General Patient Care

Required Courses
583, Practice Management IV
593, Clinic Seminar

Grades
The School of Optometry does not recognize satisfactory/ unsatisfactory grades for an optometry student enrolled in a course required for the doctor of optometry degree. The School of Optometry does not recognize a D grade for an optometry student enrolled in a course required for the doctor of optometry degree.

Time limitations
All of the required courses during the first 6 semesters of first course enrollment and all required courses for the O.D. degree must be completed within 6 years after the first course enrollment.

Graduate Studies

Physiological Optics
Physiological optics is a multidisciplinary area concerned with the study of normal and anomalous vision. The goal of this program is to train the next generation of researchers in clinical and basic vision science, to conduct research, and to educate faculty for schools of optometry. Students will be required to integrate basic skills in vision science with focal studies in an area of research emphasis.

This program will emphasize research aimed at new treatments and cures for vision disorders, as well as research in basic mechanisms of visual functions. The School of Optometry offers both an M.S. degree and a Ph.D. degree. Students may apply to the Graduate School for admission to either the M.S. or the Ph.D. program.

Admission Requirements
Students should have the appropriate background for graduate training in physiological optics and appropriate undergraduate courses for their anticipated research emphasis. Applicants must have a bachelor's degree from an accredited college or university within the United States or from an equivalent institution outside the United States. To be admitted as regular graduate students, applicants must have a grade point average of at least 3.0 in their overall undergraduate work, in their undergraduate major, and in any postbaccalaureate academic work. Students must arrange for transcripts to be submitted from all postsecondary academic work and to have at least three letters of recommendation sent by faculty members at previously attended colleges and universities. Students must also submit GRE scores (verbal, quantitative, and analytic). Applicants to the M.S. program must have combined scores on the verbal and quantitative sections of at least 1000; applicants to the Ph.D. program must have combined scores of at least 1100. In addition, students from countries where English is not a primary language must submit TOEFL scores of 550 or better. All materials and scores must be submitted by March 1 if an applicant wishes to be considered for financial assistance for the fall semester.

Master of Science in Physiological Optics

Degree Requirements
The M.S. degree requires 30 semester hours of course work, including the core courses. At least 25 of these hours will normally be taken from courses offered by the School of Optometry, with no more than 10 of these in Physiological Optics 490, Graduate Research in Physiological Optics. Each M.S. student will be required to teach at least two semesters in areas determined by the Graduate Committee in Physiological Optics.

The core courses for this program are:
Physiological Optics 400, Sensory Processes and Perception (3 credits)
Physiological Optics 401, Visual Optics (3 credits)
Physiological Optics 402, Ocular Anatomy and Physiology (3 credits)
Physiological Optics 403, Psychophysical Methods and Experimental Design (3 credits)
Physiological Optics 404, Sensory Neuroscience (3 credits)

Special Topics, Individual Studies, and Advanced Topics courses in Physiological Optics are also offered.

Each M.S. student must also complete a thesis based on research conducted during the program. The thesis must be approved by a committee of at least three members of the graduate faculty, at least two of whom must be from the graduate faculty in physiological optics.

Ph.D. in Physiological Optics

Degree Requirements
The doctoral degree requires 60 semester hours of course work, including the core courses. Each Ph.D. student will also be required to demonstrate proficiency in a foreign language, computer language, advanced statistical methods, or another acceptable tool skill. The tool skill and level of proficiency must be selected in advance in consultation with the Graduate Committee in Physiological Optics. Students will be required to teach at least two semesters in areas determined by the graduate committee.

Written qualifying examinations will be offered each semester. Students must declare their intent to take the examinations at least one month prior to the beginning of that semester or summer session. Full-time students must attempt qualifying examinations before beginning their third year of study.

The preparation of the dissertation will be supervised by a dissertation committee, which will be selected by the student and the student's adviser with input by the graduate committee. An oral examination of the written dissertation proposal will be conducted by the committee.

A public oral defense of the completed written dissertation is required.

The **core courses** for this program are:
Physiological Optics 400, Sensory Processes and Perception
Physiological Optics 401, Visual Optics
Physiological Optics 402, Ocular Anatomy and Physiology
Physiological Optics 403, Psychophysical Methods and Experimental Design
Physiological Optics 404, Sensory Neuroscience
Special Topics, Individual Studies, and Advanced Topics courses in Physiological Optics are also offered.

Continuing Education
The School of Optometry offers continuing education programs for optometrists throughout the Midwest region as well as nationwide. Courses on management of ocular diseases, ocular anomalies, and visual skills are held on a frequent basis. In addition to School of Optometry faculty, optometric specialists, medical educators, and researchers have input into course development as well as participation in course presentations.

All CE courses offered by the school are accepted by those states requiring continuing education credit for relicensure.

Continuing Education course information may be obtained by contacting:
University of Missouri-St. Louis School of Optometry
Office of Continuing Education
8001 Natural Bridge Road
St. Louis, MO 63121-4499
(314) 516-5615

Career Outlook

Doctor of Optometry Degree
A doctor of optometry is an independent health care professional who is specifically educated, clinically trained, and licensed to examine, diagnose, and treat conditions or impairments of the human vision system. They examine the eyes and related structures to determine the presence of vision problems, eye disease, and other ocular abnormalities.

Doctors of optometry are the major providers of vision care. They provide treatment by prescribing ophthalmic lenses or other optical aids, provide vision therapy to preserve or restore maximum efficiency in vision, and in most states (including Missouri) are authorized to prescribe drugs in the treatment of certain eye diseases.

Doctors of optometry can also detect certain general diseases of the human body such as diabetes, hypertension, and arteriosclerosis that have the potential capacity to affect vision. When an eye examination reveals diseases in other parts of the body, the optometrist will refer patients to the appropriate health care practitioner for treatment. Like physicians and dentists, optometrists are primary health care professionals.

The scope of optometry practice requires an understanding of the development of vision from infancy through adulthood, and the therapeutic and rehabilitative methods required to care for the problems of vision from infancy through the declining years.

Optometry is the largest eye care profession and one of the largest independent health care professions in the United States. Currently, some 28,900 doctors of optometry practice in America. They are widely distributed across the nation, practicing in more than 7,100 different municipalities. In more than 4,300 of these communities, they are the only primary care provider. As such, doctors of optometry provide the major portion of primary eye care services in the United States.

Studies have indicated that a ratio of one practicing doctor of optometry to every 7,000 people (a ratio of 14.3 practicing doctors of optometry per 100,000 population) is a reasonable average for the United States. Despite recent growth in the profession, few states meet this criteria.

As our society becomes more technically oriented, vision requirements become more exacting. The number of persons needing professional help for reading and other near-point visual tasks, including both older citizens and school children, is steadily growing. Increased demands for vision care result not only from population growth but also from increased understanding of how good vision relates to industrial production, student achievement, adjustments to aging, and other areas crucial to modern society.

The patients whom the practicing doctors of optometry treats may have varied and challenging needs. On any given day, an optometrist might be involved in restoring vision to a partially sighted patient; fitting glasses for a child whose vision problem is affecting academic achievement; treating an eye infection with antibiotics; improving the function of a patient's eyes through vision training; helping an elderly patient in a nursing home cope with changing vision through critical eye health education; and performing comprehensive eye examinations for those who need glasses or contact lenses to correct astigmatism, nearsightedness, and numerous other vision problems.

The practice of optometry offers independence, flexibility, and diversity. Doctors of optometry have a wide range of modes of practice. They may choose to practice in the inner cities, suburbs, and rural areas. Opportunities exist for solo practice, associateship,

optometric or multidisciplinary group practice, government or military service, clinical or hospital practice, teaching, and research.

Optometry is a rewarding career, both economically and personally. Based on data from the Bureau of Labor Statistics and surveys by professional associations, optometry is one of the top 10 income-earning professions in the country.

Graduate Degrees

The master of science program provides research-oriented training beyond that offered in the professional program in optometry. Many optometry schools require that applicants for faculty positions hold an M.S. or Ph.D. degree as well as an O.D. degree. Additional employment possibilities for individuals with M.S. degrees are found in industry and in public and private research foundations.

The Ph.D. program prepares students as research professionals in vision science. Employment opportunities are available in college or university teaching and research, in research institutes, and in industry. Within academic optometry, individuals with both O.D. and Ph.D. degrees are in high demand as faculty members.

Course Descriptions

The following 400-level courses may be taken in the master of science or doctor of philosophy programs in physiological optics.

400 Sensory Processes and Perception (3)
Prerequisite: Consent of instructor required for graduate students not in Physiological Optics. Current views on the encoding of various aspects of the visual stimulus (intensity, space, time, and wavelength) that give rise to the perceptions of brightness, contour, motion, and color will be considered in this course. The psychophysical tools available to examine visual encoding will be emphasized. Other topics will include binocular vision and depth perception, information processing approaches to visual pattern recognition, and the similarities and interactions of the visual system with the other sensory modalities.

401 Visual Optics (3)
Prerequisite: Opt 406, Opt 505, or consent of instructor. This course deals with the optical properties of the eye. Included are a review of general optics including physical optics, paraxial and non-paraxial geometric optics, image quality, radiometry and photometry, and optical instrumentation. Topics in visual optics will include schematic eyes, measurement of the parameters of the eye, accommodation, retinal image size, refractive errors, visual axes, spectral absorption by the ocular media, and the optical performance of the eye.

402 Ocular Anatomy and Physiology (3)
Prerequisite: Consent of instructor required for graduate students not in Physiological Optics. The structures and fluids of the eye and orbit, their interactions and functions are considered in this course. Specific topics include the eyelids, tearfilm, conjunctiva, cornea, iris, ciliary body, vasculature, aqueous humor, vitreous body, and the retina.

403 Psychophysical Methods and Experimental Design (3)
Prerequisite: Consent of instructor required for graduate students not in Physiological Optics. Advanced methodology for the design and analysis of experiments in a variety of areas of visual science are considered in this course. Both basic and applied topics will be considered. Special emphasis will be placed on psychophysical methodology, signal detection analysis, and scaling techniques.

404 Sensory Neuroscience (3)
Prerequisite: Opt 405, Opt 504, or consent of instructor. This course will deal with the neural organization of the sensory systems with an emphasis on vision. It will include a review of general neurophysiology and neuroanatomy as they relate to the processing of environmental stimuli into neural information, as well as experimental approaches utilized in neurobiology. Topics to be covered include neural transduction and sensory coding by receptors and neurons, constraints on perception defined by the functional organization of the nervous system, sensory development and plasticity as related to neural development, and evolution of sensory systems.

405 Neuroanatomy (5)
Prerequisite: Graduate standing. Detailed gross and microscopic anatomy of the human central nervous system with a special emphasis on the cranial nerves, nuclei, and the visual system. Students may not receive credit for both Opt 405 and Opt 504.

455 Visual Information Processing (2)
Prerequisite: Completion of core or consent of instructor. This course covers a variety of topics related to the computer modeling of visual problems, such as the detection of surfaces and three-dimensionality, the perception of color, and the encoding of motion. Computer models will be evaluated in terms of their efficiency, veridicality, and relation to biology.

456 Oculomotor Systems (2)
Prerequisite: Completion of core or consent of instructor. The intra- and extraocular muscle systems illustrate the role of visual and other sensory information in feedback control systems. Topics include the control of eye movements, accommodation and pupil size, and their synkinetic relationship in the near triad. The anatomy, physiology, and pharmacology of the muscles, kinematics, methods of measuring eye movements, neurophysiology of eye movements, and perceptual phenomena are also discussed.

470 Individual Studies in Physiological Optics (2)
Prerequisite: Consent of instructor. This course designation can be used to cover a variety of topics in visual science. In general, very specific topics of limited interest will be presented as individual studies. Individual studies and advanced topics enable the student's course of study to be sharply tuned to his or her major area of interest.

490 Graduate Research in Physiological Optics (1-15)
Prerequisite: Consent of instructor. Research in an area selected by the student in consultation with faculty members. May be taken to a maximum of 10 hours for the M.S. and 15 hours for the Ph.D.

497 Interdisciplinary Geriatric Care (2)
(Same as Gerontology 497.) Prerequisite: Consent of instructor. Interdisciplinary approaches that address the medical and social needs of the elderly will be examined. Information about geriatric care and social issues affecting the well-being of older adults will be provided. Clinical, theoretical, and educational perspectives will be presented.

499 Current Topics in Optometry and Vision Science (1)
Prerequisite: Consent of instructor. This seminar course examines and analyzes current publications in eye care and vision research. May be taken as an optometry elective to a maximum of 3 hours.

The following 500-level courses are taken in the Doctor of Optometry (O.D.) program.

504 Neuroanatomy (4)
Detailed gross and microscopic anatomy of the human central nervous system with a special emphasis on the cranial nerves, nuclei, and the visual system.

505 Geometric Optics (4)
The principles of geometrical optics as applied to refracting and reflecting surfaces, thin lenses, thick lenses, and lens systems. The optics of various ophthalmic instruments and techniques will be examined.

506 Practice Management I (2)
An introduction to the profession of optometry, including a consideration of the characteristics of a profession, the history of optometry, the profession's legal limitations, and major optometric organizations. The ethical basis of the practice of optometry will be explored, including a consideration of the theories and principles of normative ethics, biomedical ethics and the responsibilities of the health care practitioner, professional codes of ethics and ethical issues that arise in the practice of optometry. Ethical case studies will be extensively used. This is an interactive course, requiring active participation on the part of the student.

508 Human Anatomy and Physiology (6)
The general anatomy of the human body and the physiology of the major organ systems including the peripheral and autonomic nervous system, the cardiovascular, respiratory, endocrine, digestive, and reproductive systems will be presented. The anatomy of the head and neck will be emphasized and the histology of the basic tissue types and organs will be related to general human anatomy and physiology. (Five hours lecture, two hours laboratory/week.)

512 Biochemistry (3)
Basic concepts of general and cellular biochemistry. Study of nomenclature structure, and reactions of organic molecules. Some emphasis on visual system--tears, intraocular fluids, lens, and photochemistry.

513 Physical Optics and Photometry (2)
Prerequisite: Optometry 505. Basic photometric concepts, measurements of light levels, applications in ergonomics, visual and photographic optics. Physical optics including diffraction, interference, polarization, birefringence, and lasers.

514 Clinical Optometry I (2)
Selected tests for ocular assessment including case history, visual acuity, and ophthalmoscopy.

515 Ocular Optics (3)
Prerequisite: Opt 505. The eye as an image-forming mechanism, the schematic eyes, the optical role of the pupil, the retinal image and its evaluation. Nature, classification, and etiology of ametropia. Experimental models of refractive errors. Entoptic phenomena. Mechanism and optical aspects of accommodation.

516 Physiological Optics Laboratory (1)
Experiments designed to accompany Opt 515 and Opt 517.

517 Ocular Motility (3)
Prerequisite: Opt 504. The anatomy, physiology, neurology, measurement, characteristics, and control of the intra- and extraocular system.

518 Anatomy and Physiology of the Eye (5)
Prerequisite: Opt 504 and Opt 508. Vegetative anatomy and physiology of the eye, optic nerve, orbit, and adnexa will be discussed. This includes discussion of embryology and the dynamics of ocular fluids and includes a two-hour laboratory.

519 Physical Optics and Photometry Laboratory (1)
Prerequisite: Concurrent enrollment in Opt 513. Experiments designed to accompany Opt 513.

520 Ophthalmic Optics (4)
Prerequisite: Opt 513, 515, and 519. Ophthalmic materials, physical characteristics of lenses and frames, paraxial optics of opthalmic lenses, ophthalmic prisms, lens specifications, special lenses, multifocal lenses, unique designs, aniseikonic lenses, abberation theory and its application to lens design, lenses for low vision, protective eyewear, selection and dispensing eyewear, management of a dispensary.

521 Clinical Optometry II (5)
Prerequisite: Opt 514. Continuation of clinical optometry. Patient care in the areas of refraction, binocular integration, perimetry, and bimicroscopy.

522 Systemic Disease (3)
Prerequisite: Opt 508 and 512. Principles of health and disease. A survey of disease, disease processes, and disease manifestations. A study of tissue changes in inflammation, immunology, neoplasia, allergies, disturbances of metabolism and circulation, and injuries.

524 Monocular Sensory Processes (5)
Monocular sensory mechanisms of vision, photoreception, visual neurophysiology, spatial and temporal effects, visual acuity and resolution, adaptation, brightness discrimination, and color vision. Topics include a consideration of both the psychophysical aspects and neurophysiological bases of these mechanisms.

530 Ophthalmic Dispensing (1)
Prerequisite: Opt 520. Clinical experience in verification and dispensing of ophthalmic materials.

531 Clinical Optometry III (5)
Prerequisite: Opt 521. Correlation and analysis of optometric data. Emphasis on diagnosis, prognosis, and therapy of visual problems.

532 Binocular Vision and Space Perception (4)
Prerequisite: Opt 521 and 524 or consent of instructor. Binocular vision and space perception. Visual direction, theory of correspondence, fusion, rivalry, ocular dominance, and stereopsis. Developmental aspects and neurophysiological mechanisms.

533 Ocular Disease I (4)
Prerequisite: Opt 522. The etiology, epidemiology, symptoms, signs, and course sequelae of ocular disease and anomalies. Disease and anomalies of lids, orbit, conjunctiva, cornea, sclera, iris, ciliary body, lens, vitreous, retina, choroid, and optic nerve.

535 Epidemiology (2)
A review of descriptive statistics, probability sampling, correlation, and prediction. The essentials of epidemiological study procedures and a discussion of the epidemiology of vision disorders.

541 Practice Management II (2)
Prerequisite: Opt 506. Principles of human interpersonal relationships. The enhancement of listening and verbal skills will be provided. Emphasis will be preparing the student to understand and manage the many human interpersonal relationships necessary in the practice of optometry.

550 General Clinic I (6)
Prerequisite: Opt 531 and successful completion of all first and second year course work required. The clinical examination and care of general clinic patients, along with the fitting and dispensing of lenses and frames.

553 Contact Lenses I (3)
Prerequisite: Opt 531. Historical development of the contact lens and its use. Basic lens terminology, specifications, physiochemical characteristics, optics, fabrication, and verification. Preliminary patient evaluation, indications and contraindications for contact lenses. Basic fitting philosophies for all lens types. Lens care and patient education. Patient and practice management considerations.

554 Binocular Vision Anomalies (4)
Prerequisite: Opt 531 and 532 or consent of instructor. The etiology, epidemiology, symptoms, signs, and course sequelae of the obstacles to binocular vision--sensory, integrative, and motor. The detection, diagnosis, prognosis, and orthoptic treatment of such anomalies. Clinical care of aniseikonias.

555 General Pharmacology (3)
Prerequisite: Opt 508 and 522. General principles of drug actions on the organ systems, central and peripheral nervous systems, methods of administration, pharmacological actions, side effects, and drug interactions. Regulatory agencies, laws, and drug abuse.

556 Ocular Disease II (4)
Prerequisite: Opt 533. The etiology, epidemiology, systems, signs, course sequelae and management of posterior segment ocular disease and the anomalies and ocular manifestations of systemic diseases. Disease, abnormalities and management of neurological conditions which affect the lids, pupils, extraocular muscles, optic nerve and visual system.

557 Environmental Vision (2)
This course considers the relationship of the eye and vision to all aspects of one's environment including home, work, recreation, and transportation. Emphasis will be placed on protecting the eye from injury and maximizing vision performance.

558 Geriatric Optometry (2)
(Same as Gerontology 458.) Special examination and management considerations of the geriatric patient will be discussed. Psychological, physiological, social, and demographic aspects of aging, as well as ocular changes associated with the aging process will be taught.

559 Ophthalmic Lasers (1)
Principles and applications of lasers for ophthalmic use. Emphasis will be placed on demonstration where possible. Topics will include the principles, physics and safety concerns of ophthalmic lasers. Lasers used in retinal imaging, and in the care of glaucoma, cataract, refractive conditions, and cosmetic conditions will be discussed and demonstrated. Co-management of patients requiring ophthalmic laser treatment will also be covered.

560 General Clinic II (6)
Prerequisite: Opt 550 and successful completion of all Fall semester third year course work required. Same as General Clinic I.

561 Pediatric/Binocular Vision Specialty Clinic (1)
Prerequisite: Opt 554 and successful completion of all Fall semester third year course work required. The clinical examination and care of patients in the optometric specialty areas of binocular vision and pediatric vision.

562 Contact Lens Specialty Clinic (1)
Prerequisite: Opt 553 and successful completion of all Fall semester third year course work required. The clinical examination and care of patients in the optometric specialty area of contact lenses.

563 Contact Lenses II (3)
Prerequisite: Opt 553. Advanced contact lens fitting, theories, and clinical methods for astigmatic, presbyopic, keratoconic, and aphakic designs. Special considerations include the use of corneal topography, orthokeratology, disposable lenses, lenses for extended wear and lenses for color deficiencies.

564 Low Vision (3)
The etiology, epidemiology, symptoms, signs, and course sequelae of low-vision problems. Methods of testing, prognosis, selection of therapy, design of environmental and optical aids, problems of rehabilitation. Agencies, laws, public and social assistance for the partially sighted and blind.

565 Ocular Pharmacology (3)
Prerequisite: Opt 555. Pharmacology principles, methods of administration, doses, contraindications, and adverse effects of drugs used for the diagnosis and treatment of abnormalities of the eye, adnexa and visual system. Ocular manifestations of systemic medications.

566 Ocular Assessment (1)
Prerequisite: Enrollment in General Clinic I or II. Discussion of the diagnosis and managment of common clinic patient encounters via Socratic teaching techniques. Interns are encouraged to present actual cases which have been particularly challenging for them.

567 Pediatric Optometry (3)
Prerequisite: Opt 531. Special examination and management considerations of the pediatric patient. Psychological, physiological, social, and demographic aspects of early visual development. Discussion of the optometric considerations of children with learning and reading disabilities.

568 Clinical Medicine (2)
Prerequisite: Opt 522 and 555. Diagnostic principles and medical management. Comprehensive health history, physical examination and neurological screening with particular association to ocular health conditions. Clinical chemistry and interpretation of clinical laboratory tests, criteria for referral to other providers and emergency office procedures. Co-management practice with other primary care physicians will be emphasized.

569 Ocular Photography (2)
(Elective) Prerequisite: Consent of instructor. Optical principles and clinical techniques in photographing the internal and external eye and its adnexa. Includes laboratory exercises on use of the most common types of clinical cameras.

570 External Rotation in General Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of a general population of optometric patients at external sites approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

571 Community Service Rotation in Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of patients at St. Louis area community health centers. This course fulfills one of the clinic courses required for graduation.

572 East St. Louis Center Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of patients at the East St. Louis Eye Center. This course fulfills one of the clinic courses required for graduation.

573 UM-St. Louis Pediatric/Binocular Vision Patient Care (3)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of patients in pediatric/binocular vision clinic at the University of Missouri-St. Louis Center for Eyecare. This course fulfills one of the clinic courses required for graduation. This course must be taken in conjunction with Opt 574 and Opt 575.

574 UM-St. Louis Contact Lens Patient Care (3)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care in the contact lens clinic at the University of Missouri-St. Louis Center for Eyecare. This course fulfills one of the clinic courses required for graduation. This course must be taken in conjunction with Opt 573 and Opt 575.

575 UM-St. Louis Co-Management Patient Care (1)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care in the co-management clinic with ophthalmologists at the University of Missouri-St. Louis Center for Eyecare. This course fulfills one of the clinic courses required for graduation. This course must be taken in conjunction with Opt 573 and Opt 574.

576 Optometric Center Patient Care (6)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of patients at the University of Missouri-St. Louis Optometric Center. This course fulfills one of the clinic courses required for graduation. This course must be taken in conjunction with Opt 577.

577 Optometric Center Co-Management Patient Care (1)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of patients in the co-management clinic with ophthalmologists at the University of Missouri-St. Louis Optometric Center. This course fulfills one of the clinic courses required for graduation. This course must be taken in conjunction with Opt 576.

578 External Rotation in Contact Lens Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of contact lens patients at an external site approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

579 External Rotation in Pediatric/Binocular Vision Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of pediatric/binocular vision patients at an external site approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

580 Supplementary Rotation in General Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of general population of optometric patients at the UM-St. Louis Center for Eye Care, UM-St. Louis Optometric Center, or the UM-St. Louis East St. Louis Eye Center.

581 External Supplementary Rotation in General Patient Care (7)
Prerequisites: Successful completion of all first, second, and third year course work is required. Comprehensive clinical care of general population of optometric patients at an external site approved by the School of Optometry's Externship Council.

582 Practice Management III (3)
Prerequisites: Opt 506 and Opt 541. The development and management of an optometric practice from a patient and community service point of view--office design, office routine, patient care administration, personnel management, and recall systems. The establishment, evelopment, and management of an optometric practice from a business point of view. Legal developments, governmental relationships, legislation and the legislative process, malpractice, professional ethics, taxes, fee structures, insurance, and accounting methods.

583 Practice Management IV (2)
Prerequisite: Successful completion of all first, second, and third year course work required. Further in-depth discussion in practice management.

585 External Rotation in Ocular Disease Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of patients with ocular disease at external sites approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

586 External Rotation in Institutional Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of primary care patients at external sites approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

588 Directed Research (3)
(Elective) Credit is given for independent research. Projects may be laboratory, library, or clinically based research in any area of vision science. All projects must be undertaken under the supervision of a three-member faculty committee. This elective may be repeated once.

589 Directed Readings (1)
(Elective) Credit is given for independent literature review of a specific topic in any area of basic or clinical vision science. Readings are to be supervised by a two-person faculty committee and at least one member of this committee must be selected from among the full-time regular faculty. Credit is awarded upon approval of a written paper regarding the selected topic. This elective may be repeated once.

591 Geriatric Patient Care Delivery (3-6)
(Elective) Prerequisite: Consent of Geriatric Residency Instructors. Direct optometric patient care to a population that is largely geriatric. Emphasis will be on integrating specialty care available for these patients to provide comprehensive vision care. Two hours of direct patient care per week are required per hour of credit. In addition, the student will attend weekly supervisory meetings. May be repeated with consent of instructor for a total of 18 credits. Patient care will become more independent of direct supervision and the type of patients seen will be more varied with each repeat.

592 External Rotation in Low Vision Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of low vision patients at an external site approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

593 Clinic Seminar (1)
Prerequisite: Successful completion of all first, second, and third year course work required. Presentation and discussion of interesting clinical patients. Additional clinical testing techniques and concepts. Further discussion of patient data analysis--the process of determining diagnosis, prognosis, and therapy. Further discussions in the optometric specialties.

594 Topics in Geriatric Optometry (3)
(Elective) Prerequisite: Opt 558. This course will address concerns and options in providing optometric care to a geriatric population. New techniques, research, and public policy changes will be discussed to assist students in assembling a global perspective on delivering health care to a specific population.

595 Computer Applications in Optometric Practice (2)
(elective) Prerequisite: Second professional year or consent of instructor. An introduction to microcomputers and computerized office management systems. This course is designed to provide students with training in the use of computers, office management software, and microprocessor technology in an optometric office.

596 Public Health (2)
A review of local, state, and federal organizations involved in health care, comprehensive health planning, new trends in health care delivery, and the assessment of the quality of health care delivery. The relationship of vision care to these topics is emphasized.

598 Clinical Applications of Current Topics in Visual Science (2)
(elective) Prerequisite: Consent of instructor. A seminar on the use of new discoveries in visual science in clinical optometry. Students will participate in selecting the topics, which will change from year to year, with the guidance of the instructor. The course will also include laboratory demonstrations of seminar topics.

Pierre Laclede Honors College

General Information

The Pierre Laclede Honors College goal is to enrich significantly the educational experience of a select group of highly motivated and intelligent undergraduates. With this in mind, it enrolls promising students who give clear indication that they are ready to accept academic challenges and become creatively involved in the learning process together with a team of similarly committed instructors.

Given this special mission, the college has a unique structure and identity. Unlike the university's other schools and colleges, it has no academic departments or areas of its own, and it grants no degrees. Instead, it brings together a cross section of the university's students and teachers in a special curriculum.

The College offers two academic formats:

1. A four-year program open to entering freshmen and extending over a student's entire undergraduate career;

2. A two-year program open to a select group of third-year students who are either continuing at or have transferred to the university and are engaged in work on a major.

The Honors College Writing Portfolio
Both programs include participation in the Honors College writing program, Writing through the Curriculum, which involves formal courses in composition (at least one of Honors 10, 210, and 310) and informal consultations with the director of the writing program. In the final year, this culminates in the compilation of a personal Honors College writing portfolio.

Undergraduate Research
All Honors College students must fulfill a 6-credit-hour independent study requirement (see below under Curriculum). Many students meet all or part of this requirement by undertaking a research project supervised by faculty in their major department. Additional financial support is available for supervised undergraduate research projects in all majors.

Faculty
Honors College instructors are drawn from faculty in the various academic departments and areas in those colleges and schools which have an undergraduate component. What these teachers have in common is a willingness to work closely with a select, diverse group of intellectually curious and academically high-achieving students. They demonstrate this by designing courses directed toward such an audience and based on small discussion seminars. Thus the honors faculty is an organic body, growing each semester as new faculty join in the honors project. The newcomers invariably include individuals whose teaching and scholarship have been singled out for special distinction. Their talents add to the Honors College's already rich instructional pool of more than 100 regular and full-time faculty.

Honors Scholars
Honors College scholars are highly qualified individuals from a broad range of public and private secondary schools and colleges. They enter the college with different backgrounds and interests and remain part of it while simultaneously enrolling in classes and pursuing bachelor's degrees in other academic divisions of the university.

Most honors students major in the traditional liberal arts disciplines spanning the humanities, social sciences, mathematics, and natural sciences, but about a third focus on using their undergraduate education to prepare for careers in business, education, nursing, or engineering. Whatever their undergraduate majors, most Honors College students plan to go on to graduate study or professional schools, although a significant number successfully seek employment immediately after graduation. Honors faculty and staff provide advice and guidance in both course choice and career plans .

Curriculum
Pierre Laclede Honors College offers both a four-year program (for students admitted as freshmen) and a two-year program (for transfer students from within the UM-St. Louis or from outside the university).

Four-Year Program (40 credit hours total):
Approximately one-third of the 120 hours honors students earn toward graduation are taken in the Honors College or under its auspices. Most of these credits are associated with a sequence of honors courses designed specifically for the college, the majority of which are taken during the first two years. During this period, these students fulfill virtually all of the university's general education requirements, usually in innovative ways. In their junior and senior years, honors scholars also earn honors credit for work done within their major fields, work which includes the possibility of internships, independent study projects, and advanced undergraduate research.

First Year (15 credit hours):
Scholars take Honors 10, 20, and 30, and one course each from the Western Traditions and Non-Western Traditions seminar series. Students may take a seminar from the American Traditions series as an elective or in place of *either* a Western *or* a Non-Western Traditions seminar.
10, Freshman Composition
20, Cities and Good Lives: Knowledge, Decisions, and Consequences.
30, Critical Analysis
111-5, The Western Traditions Series
121-5, The American Traditions Series (elective)
131-5, The Non-Western Traditions Series

Second Year (6 credit hours):
Scholars take two of the following **Honors** classes:
201, Inquiries in the Humanities
202, Inquiries in the Fine and Performing Arts
203, Inquiries in the Social and Behavioral Sciences
204, Inquiries in Mathematics and Computing
205, Inquiries in the Sciences
206, Inquiries in Business
207, Inquiries in Education
208, Inquiries in Nursing

Honors students in the four-year program may also take **Honors 210** to meet their advanced composition graduation requirement. Students choosing this honors elective normally take it during their third year (or as soon as they have completed 60 credit hours).

During the first two years, honors scholars will take additional course work in other areas, such as mathematics, natural science, foreign language, and major prerequisite classes to satisfy various university, Honors College, and specific degree requirements.

Third and Fourth Years (19 credit hours):
Honors scholars in the four-year program take at least four seminars (12 credit hours) from the Advanced Seminar (**301-308**) and/or Research Seminar (**351-358**) series. They may take more, and many do where this is compatible with their major and/or minor requirements. In addition, honors students do **6 credit hours** in independent study projects, normally in or closely related to their major field. These independent study projects normally carry credit in the major, but can be done as Honors College independent study or research projects (**Honors 390-399**). During the final year, students also take **Honors 310**, a 1-credit capstone for the Honors College writing program.

Two-Year Program (22 credit hours total):
Scholars in this program will take a combination of Honors College courses and also earn honors independent study credit for work done in their major fields. The 22 credit hours must include 6 credits of independent study, as for the four-year program.

Third Year (9 credits):
During the first year of the two-year program, students take three honors seminars, including **210**, Advanced Composition: Writing the City; one course from the **Inquiries** series (**201-208**); one course from *either* the

Advanced Seminar (301-308) *or* **Research Seminar (351-358)** series. In addition, 3 credit hours of independent study may be taken during this year, normally in or closely related to their major.

Fourth Year (7 credits):
The final year of the two-year program involves three courses chosen from the 200- and 300-level options, including **310**, the honors writing portfolio (1 credit hour) and at least one course chosen from the **301-308** or **351-358 series.** In addition, students will complete their independent study requirements with 3 or 6 hours of project, internship, or research work.

Other academic features and requirements.

Pass/Fail.
The satisfactory/unsatisfactory option does not apply to any course work undertaken for Honors College credit.

Admission and Retention.
To be considered for admission to either the two-year or four-year honors program, a candidate must file a special Honors College application as well as a general university application. These application forms and additional information concerning scholarship and stipend awards, general eligibility guidelines, and the admissions process are available from the Honors College administrative office at (314) 516-6870 or from the office of admissions.

Scholarships and stipends.
Every new freshman or transfer student admitted to the Honors College receives academic scholarship support. Scholars continue to receive these awards as long as they meet the criteria associated with their particular scholarship grant.

Good academic standing.
To remain in good standing, a student must maintain a cumulative GPA, in all his or her UM-St. Louis courses, of at least 3.2, and must continue to meet the requirements of the honors program for which he or she was initially admitted. Unless other arrangements have been made, Honors College students are also expected to be full time, that is, to register for and satisfactorily complete satisfactorily complete at least 12 credit hours per semester. Students wishing to enter the Honors College as part-time students, or to change to part-time status, must make prior arrangements with the Honors College.

UM-St. Louis: an Urban Land Grant Institution
Given its location in St. Louis, and because it is part of an urban land grant university, Pierre Laclede Honors College seeks to encourage awareness of the manifold benefits of pursuing an undergraduate education in a dynamic and varied urban community. This is accomplished partly through the honors curriculum (for instance, Honors 20 and 210 are focused on "the city") through facilitating cultural and other outings in the city, and by encouraging students to include in their academic program courses, research projects, and/or internships which exploit the university's manifold connections with city people and its partnerships with leading city institutions such as the Missouri Botanical Gardens, the Missouri Historical Society, and the

Mercantile Library of St. Louis. Many honors students fulfill all or part of their independent study requirements working through such partnerships.

International Study and Other Exchange Programs
Honors students are encouraged to consider a semester's or a year's study at another institution. This can be done through the university's Center for International Studies, which administers exchanges with more than 70 universities in Europe, Africa, Asia, Australia, and South and Central America. Or students may, through the National Student Exchange (administered for the university by the Honors College), attend any one of more than 100 universities in the United States and Canada.

Course Descriptions

Please note the codes attached to the following course descriptions. These codes designate which Honors courses will fulfill, or help to fulfill, your general education graduation requirements.
(H) fulfills a Humanities requirement.
(SS) fulfills a Social Sciences requirement.
(SM) fulfills a Natural Sciences or Mathematics requirement.
(CW) fulfills a writing requirement.

Selected Honors courses may also meet divisional area study requirements, for instance in global awareness or cultural diversity. Please note also that several Honors courses, particularly in the 200- and 300-levels can be used to fulfill major, minor, and certificate requirements, where that has been agreed by other divisions or departments of the University.

The Honors College course lists, published each semester, identify clearly those seminars which fulfill these various requirements.

Important note: Unless otherwise indicated, all Honors seminars and courses require students to obtain the consent of the dean or associate dean of the Honors College at registration.

10 Freshman Composition (3)
Prerequisite: Consent of the dean of the Honors College. Theory and practice of writing expository prose. Emphasis on individual tutorial. Assignments will be linked with topics discussed in Honors 101. (CW)

20 Cities and Good Lives: Knowledge, Decisions, and Consequences (3)
Prerequisite: Consent of the dean of the Honors College. Introduces students to the city and to a wide range of academic disciplines relevant to acquiring knowledge about the city, to making decisions about the city, and to understanding the impact of those decisions on the lives of people who work, play, and live in the city. Involves students with city institutions, organizations, and people, and introduces several main disciplinary areas offered by the University of Missouri-St. Louis. [H or SS].

30 Critical Analysis (3)
Prerequisite: Consent of the dean of the Honors College. An introduction to the forms and techniques of rational discussion. The emphasis is on improving skills in identifying, analyzing, evaluating, and formulating arguments. Topics include deductive and non-deductive reasoning, causal analysis, analogical arguments, logical fallacies, vagueness and ambiguity, methods of definition, and argumentative writing. (H)

111- 115 Western Traditions (3)
Prerequisite: Consent of the dean of the Honors College. All Western Traditions seminars will be based on the reading and discussion of works of exceptional importance in the development of western culture and civilization. The works to be discussed in each seminar will follow a central theme (defined by its particular relevance to the traditional academic disciplinary areas of the humanities, arts, social sciences, mathematics, or sciences) but will relate that theme to wider developments in Western Traditions and to the American concept of a liberal education.

111, Western Traditions: Humanities [H].
112, Western Traditions: Arts (H)
113, Western Traditions: Social and Behavioral Sciences (SS)
114, Western Traditions: Mathematics (H or SS)
115, Western Traditions: the Sciences (H or SS)

121 - 125 American Traditions (3)
Prerequisite: Consent of the dean of the Honors College. Honors seminars in the American Traditions series involve readings and discussion of major importance in the development of the culture, politics, ideologies, and values which are or have been characteristic of the United States of America. Every American Traditions seminar will cover a broad range of time, and each may include contemporary issues. American Traditions 123 (Social Sciences) satisfies the American history and government requirement, and any course in the American Traditions sequence may be taken to satisfy one of the >core= requirements for the American Studies minor.

121, American Traditions: Humanities (H)
122 American Traditions: The Arts (H)
123 American Traditions: Social and Behavioral Sciences (SS)
124 American Traditions: Mathematics (H or SS)
125 American Traditions: The Sciences (H or SS)

131-135 Non-Western Traditions (3)
Prerequisite: Consent of the dean of the Honors College. Study of Non-Western societies, "traditional" or "modern," offers a reminder that, however defined, "the West" does not encompass the full range of human potentiality whether in terms of culture, values, behavior or ideas. Based on reading of significant primary texts and/or important secondary works, these seminars remind us of the realities of human diversity and provide perspectives on our own world. Non-Western Traditions seminars may be used to satisfy cultural diversity general education requirements.

131 Non-Western Traditions: Humanities (H)
132 Non-Western Traditions: The Arts (H)
133 Non-Western Traditions: Social and Behavioral Sciences (SS)
134 Non-Western Traditions: Mathematics (H or SS)
135 Non-Western Traditions: The Sciences (H or SS)

201- 208 Honors Inquiries (3)
Prerequisite: Consent of the dean of the Honors College. Inquiries seminars focus on the particular contributions academic disciplines can make to relatively broad areas of inquiry, and reading, discussion, writing and where appropriate, laboratory work or field trips will enhance students= understanding of the strengths, frailties, and particular characteristics of one or more disciplinary strategies. Inquiries courses may be used to meet relevant General education requirements. Where special arrangements have been agreed, they can meet more specific departmental and divisional requirements. The course number may be repeated for credit whenever the topic is substantially different.

201, Inquiries in the Humanities (H)
202 Inquiries in the Fine and Performing Arts (H)
203 Inquiries in the Social and Behavioral Sciences (SS)
204 Inquiries in Mathematics and Computing (SM)
205 Inquiries in the Natural Sciences(SM)
206 Inquiries in Business (H or SS)
207 Inquiries in Education (H or SS)
208 Inquiries in Nursing (H, SS or SM)

210 Honors Advanced Composition: Writing the City (3)
Prerequisite: Consent of the Dean of the Honors College. Enhances critical thinking, research, discussion, and writing skills by focusing on the city of St. Louis and on the specific fields of study of those enrolled in the course. Issues such as depth and development of content, voice, style, tone, correct expression, and research techniques are among the topics emphasized. Students maintain a Commonplace Book of journals, drafts, and creative writings; they also submit a minimum of four formal papers. This course is required for transfer students (two-year Honors Program) and an elective for students on the four-year program. For students on either program, Honors 210 meets the Advanced Composition requirement of the university. (CW)

301 Advanced Honors Seminar (3)
Prerequisite: Consent of the dean of the Honors College. Open only to Honors College Students and not acceptable for graduate credit. Usually restricted to juniors and seniors, these advanced seminars focus on in-depth study of a significant body of subject matter. The perspective employed will normally be interdisciplinary or multi-disciplinary and will underscore the value of making connections between diverse areas of study. These courses will not usually require specific prerequisites, but may (with the consent of the appropriate department or division) be taken as major or minor courses. The course number may be repeated for credit whenever the topic is substantially different.

301 Advanced Honors Seminar in the Humanities (H)
302 Advanced Honors Seminar in the Fine and Performing Arts (H)
303 Advanced Honors Seminar in the Social and Behavioral Sciences (SS)
304 Advanced Honors Seminar in Mathematics and Computing (SM)
305 Advanced Honors Seminar in the Sciences (SM)
306 Advanced Honors Seminar in Business (H or SS)
307 Advanced Honors Seminar in Education (H or SS)
308 Advanced Honors Seminar in Nursing (H, SS, or SM)

310 Independent Portfolio Writing (1)
Prerequisites: Consent of the Dean of the Honors College and senior status. Open only to Honors College students and not acceptable for graduate credit. Students in this course will meet on a regular basis with the Director of Writing and other appropriate Honors faculty to revise and polish samples in the Honors writing portfolio which the student has compiled during his or her Honors College enrollment. With the assistance of the Director, the student will write an in-depth analysis of his or her writing and will select the best examples of writing in his or her Honors Portfolio. During this independent study, the student may request help with research skills, writing issues, or application procedures for post-graduate courses or employment. Required of all students admitted and enrolled after August 1998; optional for others. (CW)

351-358 Research Seminar (3)
Prerequisites: Consent of the Dean of the Honors College. Open only to Honors College students and not acceptable for graduate credit. Modeled on and for some students affording a preview of the postgraduate or professional research seminar, Honors Research seminars bring students face to face with primary research, as appropriate in the library, the laboratory, and/or field work, utilizing appropriate disciplinary perspectives and secondary reading. These courses may be cross-listed with other advanced courses in appropriate departments/divisions of the university, and as such may carry specific course prerequisites and/or require the specific consent of the instructor.

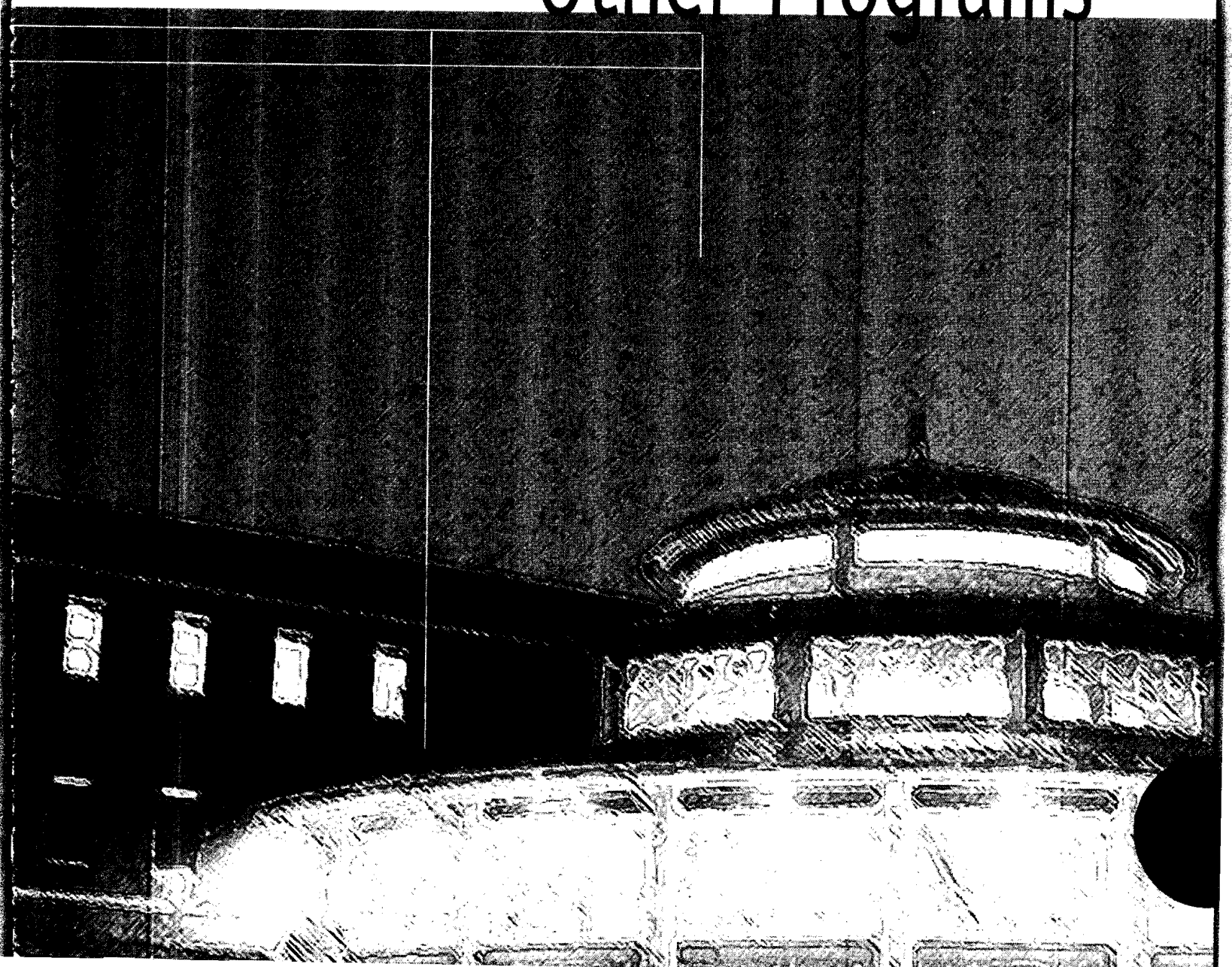
351 Research Seminar in the Humanities (H)
352 Research Seminar in the Fine and Performing Arts (H)
353 Research Seminar in the Social and Behavioral Sciences (SS)
354 Research Seminar in Mathematics and Computing (SM)
355 Research Seminar in the Sciences (SM)
356 Research Seminar in Business (H, SS or SM)
357 Research Seminar in Education (H or SS)
358 Research Seminar in Nursing (H or SS)

390 Independent Study in Honors (1-6)
Prerequisites: Consent of the Dean of the Honors College. Open only to Honors College students and not acceptable for graduate credit. Most Honors students will fulfill their Honors independent study requirements in another department or division of the university. Where this is not possible, and where academic credit seems an appropriate reward for the independent study in question, the project may be undertaken as Honors 390, normally as a 3-credit course. This will involve substantial reading, research, and/or field work, and will be supervised by a permanent member of the Honors College academic staff. Completed proposal forms for this course must be submitted to the Honors College no later than the deadline for university registration. (H or SS)

391-399 Honors Independent Research (3)
Prerequisites: Consent of the Dean of the Honors College. Open only to Honors College students and not acceptable for graduate credit. Honors students who wish to conduct individual research projects under the supervision of a member of the university's regular or full-time faculty may register for undergraduate credit and receive financial support on a cost-of-research basis. Such projects will usually be given appropriate course numbers in the student's major (or minor) department. Where this is not possible or otherwise inappropriate, students may register for credit in the Honors 39x Independent Research series. In order to qualify for financial support and academic credit, completed proposal forms, together with a brief description of the research project, must be approved and signed by an appropriate member of the faculty and submitted to the Honors College not later than the semester deadline for university registration. May be repeated for credit where the research topic/problem is substantially different or where it can be significantly extended. Faculty approval must be obtained for repeat credit.

391 Honors Independent Research in the Humanities (H)
392 Honors Independent Research in the Fine and Performing Arts (H)
393 Honors Independent Research in the Social and Behavioral Sciences (SS)
394 Honors Independent Research in Mathematics and Computing (M)
395 Honors Independent Research in the Sciences (S)
396 Honors Independent Research in Business (H, SS, or SM)
397 Honors Independent Research in Education (H or SS)
398 Honors Independent Research in Nursing (H, SS or SM)
399 Honors Independent Research in Engineering (SM)

Other Programs



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General Information

The Joint Undergraduate Engineering Program of UM-St. Louis and Washington University was approved in 1993 by the University of Missouri and the Coordinating Board for Higher Education to support nontraditional, placebound students who wish to pursue a bachelor's degree in engineering.

The program is designed to offer course work beyond the pre-engineering courses at UM-St. Louis and the area community colleges. Pre-engineering and general education courses are offered at UM-St. Louis, and upper-level engineering courses are offered on the Washington University campus. Students will be admitted to the upper-division program only after they have completed an acceptable pre-engineering program. They can earn a bachelor of science in civil engineering (B.S.C.E.), a bachelor of science in electrical engineering (B.S.E.E.), or a bachelor of science in mechanical engineering (B.S.M.E.).

Professional engineering degree programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The B.S.C.E., the B.S.E.E., and the B.S.M.E. have been designed to meet ABET accreditation requirements. However, ABET does not consider degree programs for accreditation before there are graduates. Thus, the first graduates of any new engineering degree program do not technically receive ABET-accredited degrees, but they are typically permitted to take the examinations required for engineering licensure after demonstrating that the course work they completed is at least equivalent to that which one would find in an ABET-accredited degree program.

Program Goal

The goal of the UMSL/WU Joing program is consistent with the mission of UM-St. Louis, which is to provide a high-quality education to enhance the occupational and professional careers of citizens in the entire region, including the minorities and economically disadvantaged population and to provide a well-trained, sophisticated work force for the St. Louis region. The partnership is an appropriate way for Washington University to share its campus, resources, and personnel with the citizens of Missouri.

Degree Program Educational Objectives

B.S. in Civil Engineering
Civil Engineering Practice encompasses the fields of structural engineering, transportation, environmental engineering, and construction. The mission of the undergraduate program is to prepare students for professional practice with fundamental knowledge in essential mathematical and scientific disciplines in an environment that provides opportunities for personal, academic, and professional growth. Graduates of the program will have:

- Ability to apply knowledge of basic scientific, mathematical, and engineering principles to solve Civil Engineering Problems in its four subdisciplines.
- Ability to design and conduct experiments as well as to analyze date.
- Ability to conceive and complete a comprehensive design project in one of the subdisciplines using design standards in the context of realistic constraints.
- Sound understanding of issues pertaining to professional practice and societal implications thereof.
- Ability to contribute as team members and leaders in the workplace, as well as in the community.
- Ability to communicate effectively through oral, written, visual, and graphic media.
- Ability to function in multidisciplinary engineering teams in design of a major project.
- Understanding of the need for lifelong learning, professional, and ethical responsibility.
- Awareness of regional and global opportunities and challenges, contemporary issues, and professionalism through exposure to practicing civil engineer.
- Ability to relate academic learning to practical experience so that they enhance each other.

B.S. in Electrical Engineering
The mission of the Electrical Engineering program is to instill knowledge and understanding of the fundamental principles necessary to become proficient in electrical circuits, computer systems, digital and linear electronics, electromagnetic engineering, signal analysis, and electrical laboratory methods. Graduates will have:

- Ability to design and analyze advanced and complex systems in at least one of the following areas:
  1. Solid-state devices and circuits
  2. Control components and systems.
  3. Communications
  4. Computer software and hardware
  5. Electrical power and energy.
     This ability will include the integration of thoroughly mastered mathematics and science in solving engineering problems.
- Proficiency with experimental instrumentation and techniques spanning areas of electrical energy systems and digital systems. This proficiency will include the ability to design and conduct experiments, as well as ability to analyze and interpret data.
- Proficiency in engineering design of a system, component, or process to meet desired needs.
- Ability to communicate, both orally and in writing, with special emphasis on technical writing.
- Ability to interact effectively with other people by providing experience in working with other students in teams as both a team leader and a team member.
- Understanding and appreciation of one's professional and ethical responsibility and historical and contemporary global and societal issues.
- Recognition of the need for and ability to engage in lifelong learning.

B.S. in Mechanical Engineering
Mechanical engineers are concerned with the technologies of manufacturing, energy conversion, machine design, instrumentation and control of physical processes and the environment. The mission of this undergraduate program is to prepare students for professional practice with a solid, scientifically grounded foundation in all four major stems of mechanical engineering: mechanisms and mechanical design, dynamics and control, fluid mechanics, and thermal science and materials science. The following objectives or goals are key focal points in the mechanical engineering program. Graduates will:

- Apply fundamental scientific and engineering concepts involving dynamics and systems, material science, mechanics and solids and the thermal-fluid sciences to identify, formulate, and solve a variety of mechanical engineering problems.
- Design, modify, conduct, and analyze experiments in the areas of thermal-fluid sciences, solid mechanics, and dynamical systems.
- Directly perform system, process, and component selection to satisfy specific engineering-related needs through application of mechanical design philosophy in engineering practice.
- Communicate in oral and written presentations using graphic and/or visual media appropriate for an engineering business environment.
- Operate productively in individual or multidisciplinary, team-oriented projects.
- Be exposed to modern developments, products, and tools as they relate to engineering practice.
- Be exposed to practicing engineers and their jobs and be taught the importance of high ethical and professional standards.
- Obtain the broad-based education necessary to understand the impact of engineering solutions in their global and societal contexts.
- Recognize the need for, and obtain tools necessary to engage in, lifelong learning.
- Be afforded opportunities to participate in cooperative education, internships, research experiences, or

international exchange programs to gain experience beyond the classroom.

Admission

Admission to candidacy for these degrees is granted jointly by the University of Missouri-St. Louis and Washington University.

Degree Requirements

Bachelor of Science in Civil Engineering
Bachelor of Science in Electrical Engineering
Bachelor of Science in Mechanical Engineering
A program of 137 semester hours is required for the bachelor of science in civil engineering, a program of 131 semester hours is required for the bachelor of science in electrical engineering, and a program of 139 semester hours is required for the bachelor of science in mechanical engineering, as shown below.

All majors must complete the university general education requirements, the pre-engineering requirements and the core engineering requirements. Except with special permission of the program faculty, to be eligible to take the other upper-level engineering courses (those with course numbers starting with the letter "J":

All students must first complete JEMT 217, Engineering Mathematics, with a minimum grade of C-.

Mechanical and electrical engineering majors must also complete JEE 180, Introduction to Electrical Networks with a minimum grade of C-.

Civil engineering majors must complete either JEE 180, Introduction to Electrical Networks, or JCHE 343, Environmental Engineering Chemistry, with a minimum grade of C-.

A minimum grade of C- is necessary to meet the prerequisite requirement for any course.

Pre-Engineering Requirements
Mathematics 80, Analytic Geometry/Calculus I
Mathematics 175, Analytic Geometry/Calculus II
Mathematics 180, Analytic Geometry/Calculus III
Mathematics 202, Differential Equations
Chemistry 11, Introductory Chemistry I
Chemistry 12, Introductory Chemistry II
Physics 111, Physics: Mechanics and Heat
Physics 112, Physics: Electricity, Magnetism and Optics
Engineering 144, Statics
Engineering 145, Dynamics
English 10, Composition

Humanities and Social Sciences Electives
The student's choice of humanities and social sciences electives must meet both the UM-St. Louis general education requirements and the humanities and social sciences requirements of the Joint Undergraduate Engineering Program. Check with your adviser for details. In particular: A course in American history or government or in Missouri history or government must be included. The cultural diversity requirement must be fulfilled. At least 8 credit hours must be in one department or area within humanities or social sciences; of these 8 credit hours, at least 1 credit hour must be in a course at the junior level or higher, taken at a four-year institution. Some courses that fulfill the humanities [H] or social sciences [SS] breadth of study requirement do not count as humanities and social sciences electives; an example would be a statistics course taught in economics or psychology. See the Office of the Joint Undergraduate Engineering Program for a listing of courses that do not count as humanities or social sciences electives in this program, or check with your adviser.

Engineering Core Requirements
JCS 36, Introduction to Computing
JEMT 217, Engineering Mathematics
JEC 210, Engineering Communications
JME 220, Thermodynamics
JME 225, Materials Science
JME 331, Control Systems I*
JEE 180, Introduction to Electrical Networks* **OR**
JCHE 343, Environmental Engineering Chemistry
JEE 150, Electrical Laboratory I*
*Required for electrical and mechanical engineering majors only.

Civil Engineering Major Requirements
JCE 045, Engineering Graphics
JCE 116, Surveying
JCE 241, Structural Analysis
JCE 242, Structural Design
JCE 252, Environmental Engineering Science
JCE 276, Open Channel Hydraulics
JCE 319, Soil Mechanics
JCE 320, Soil Exploration and Testing
JCE 374, Economic Decisions in Engineering
JCE 375, Introduction to Urban Planning
JCE 376, Site Planning and Engineering OR
JCE 382, Design of Water Quality Control Facilities
JCE 384, Probabilistic Methods in Civil Engineering Design
JCE 399, Senior Civil Engineering Seminar
JCE 372, Legal Aspects of Construction OR
JEP 361, Introduction to Environmental Law and Policy
JME 141, Mechanics of Deformable Bodies
JME 270, Fluid Mechanics
JME 280, Fluid Mechanics Laboratory
Civil Engineering Electives (200-399)

Electrical Engineering Major Requirements
JEMT 226, Probability and Statistics for Engineering
JEE 160, Digital Logic
JEE 190, Introduction to Digital and Linear Electronics
JEE 214, Electromagnetic Fields

JEE 227, Power, Energy, and Polyphase Circuits
JEE 279, Signal Analysis for Electronic Systems and Circuits
JEE 316, Electrical Energy Laboratory
JEE 355, Digital Systems Laboratory
JEE 380, Senior Design
Electrical Engineering Electives (200-399)

Mechanical Engineering Major Requirements
JEMT 226, Probability and Statistics for Engineering
JME 041, Introduction to Engineering Design **or**
JCE 045, Engineering Graphics **and**
JME 041A, The Engineering Design Process
JME 141, Mechanics of Deformable Bodies
JME 204, Analytical Approaches to Design
JME 221, Energetics for Mechanical Engineers
JME 222, Machine Design
JME 270, Fluid Mechanics
JME 280, Fluid Mechanics Laboratory
JME 271, Principles of Heat Transfer
JME 281, Heat Transfer Laboratory
JME 317, Dynamic Response of Physical Systems and
JME 318, Dynamic Response Laboratory
JME 390, Senior Design
JME 394, Mechanical Engineering Design Lab
Mechanical Engineering Electives (200-399)

Graduation Requirements
In addition to the requirements of the University of Missouri-St. Louis that apply to all candidates for undergraduate degrees, the student must earn a minimum campus grade point average of 2.0 and a minimum grade point average of 2.0 for all engineering courses attempted at the University of Missouri-St. Louis.

Minor in Environmental Engineering Science

A program of 18 semester hours is required to earn the minor in environmental engineering science. The minor is designed to provide formal recognition to recipients of bachelor's degrees in civil, electrical, or mechanical engineering that they have acquired the education necessary for entry-level careers as environmental professionals. They will also have a solid foundation to undertake graduate-level education in environmental engineering science.

Enrollment in all courses in the minor in environmental engineering science is limited to students who have been admitted to candidacy for the bachelor of science in civil engineering, the bachelor of science in electrical engineering, or the bachelor of science in mechanical engineering in the UM-St. Louis/ Washington University Joint Undergraduate Engineering Program. The minor may be awarded only to students who earn the bachelor of science in civil engineering, the bachelor of science in electrical engineering, or the bachelor of science in mechanical engineering in the UM-St. Louis/ Washington University Joint Undergraduate Engineering Program.

JCHE 343, Environmental Engineering Chemistry
JCE 252, Environmental Engineering Science (EE, ME majors) **OR**
JCE 375, Introduction to Urban Planning (CE majors)
JCE 308, Environmental Engineering Laboratory - Water/Soil **OR**
JCE 309, Environmental Engineering Laboratory - Air
JCE 382, Design of Water Quality Control Facilities
JEP 337, Environmental Risk Assessment
JEP 361, Introduction to Environmental Law and Policy

Engineering Design and Engineering Science Requirements

The number of semester hours assigned to each engineering course in the Joint Undergraduate Engineering Program is further divided into hours of engineering design, engineering science, and basic science content. Engineering topics is the sum of engineering science hours and engineering design hours. The following table shows the design hours and engineering science hours for courses in the engineering programs.

Each engineering student must complete a curriculum that contains at least 48 hours of engineering topics semester hours, including all courses: pre-engineering requirements, engineering core requirements, major requirements, and electives. Civil, electrical, and mechanical engineering majors should consult with their advisers to select electives at the 200 and 300 level that include sufficient engineering design and engineering science content to produce the required totals. Transfer courses from other institutions do not necessarily have the same engineering science and engineering design content as their equivalents in the UM-St. Louis/Washington University Joint Undergraduate Engineering Program. Students who include transfer courses in their curricula should consult with their advisers to be sure that these requirements are met.

Fees

Students register on the UM-St. Louis campus and pay UM-St. Louis fees plus an engineering fee for both pre-engineering and engineering courses. Limits on enrollments are determined by the availability of resources.

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

Course Number	Semester Hours	Engineering Design	Engineering Science	Course Number	Semester Hours	Engineering Design	Engineering Science
Engr 10	1.0	0.0	0.0	JEE 316	3.0	1.5	1.5
Engr 144	3.0	0.0	3.0	JEE 321	3.0	1.2	1.8
Engr 145	3.0	0.0	3.0	JEE 332	3.0	1.0	2.0
JCE 45	3.0	1.0	2.0	JEE 345	3.0	1.0	2.0
JCE 116	3.0	0.0	3.0	JEE 355	3.0	2.2	0.8
JCE 241	3.0	0.5	2.5	JEE 358	3.0	1.5	1.5
JCE 242	3.0	2.5	0.5	JEE 360	3.0	1.3	1.7
JCE 252	3.0	1.0	2.0	JEE 368	3.0	1.0	2.0
JCE 274	3.0	0.0	3.0	JEE 380	3.0	3.0	0.0
JCE 276	3.0	0.5	2.5	JEMT 217	4.0	0.0	0.0
JCE 300	1.0-6.0	Varies	Varies	JEMT 226	3.0	0.0	0.0
JCE 308	3.0	0.0	2.0	JEP 281	3.0	1.5	1.5
JCE 309	3.0	0.0	0.0	JEP 337	3.0	0.8	2.2
JCE 310	3.0	3.0	0.0	JEP 361	3.0	0.0	0.0
JCE 319	3.0	1.0	2.0	JME 41	3.0	1.5	1.5
JCE 320	1.0	0.0	1.0	JME041A	2.0	1.5	.5
JCE 360	3.0	3.0	0.0	JME 141	3.0	0.5	2.5
JCE 364	3.0	1.5	1.5	JME 204	3.0	3.0	0.0
JCE 369	3.0	3.0	0.0	JME 220	3.0	0.0	3.0
JCE 372	3.0	0.0	0.0	JME 221	3.0	0.0	3.0
JCE 373	3.0	1.0	2.0	JME 222	3.0	3.0	0.0
JCE 374	3.0	0.8	2.2	JME 225	4.0	0.0	4.0
JCE 375	3.0	1.5	1.5	JME 262	3.0	0.0	3.0
JCE 376	3.0	3.0	0.0	JME 270	3.0	0.0	3.0
JCE 377	3.0	0.0	0.0	JME 271	3.0	0.0	3.0
JCE 378	3.0	1.0	2.0	JME 280	1.0	0.0	1.0
JCE 382	3.0	3.0	0.0	JME 281	1.0	0.0	1.0
JCE 384	3.0	1.5	1.5	JME 300	1.0-6.0	Varies	Varies
JCE 386	3.0	3.0	0.0	JME 316	3.0	0.5	2.5
JCE 399	1.0	0.0	0.0	JME 317,	4.0	1.0	3.0
JCHE 343	3.0	0.0	2.0	JME 319	3.0	0.0	0.0
JCS 36	4.0	2.0	2.0	JME 324	3.0	0.5	2.5
JEC 210	3.0	0.0	0.0	JME 325	3.0	2.0	1.0
JEE 150	3.0	1.0	2.0	JME 329	3.0	1.0	2.0
JEE 160	3.0	1.5	1.5	JME 331	3.0	1.0	2.0
JEE 180	3.0	0.8	2.2	JME 350	3.0	1.0	2.0
JEE 190	3.0	0.8	2.2	JME 353	3.0	3.0	0.0
JEE 214	3.0	1.0	2.0	JME 372	3.0	0.0	3.0
JEE 227	3.0	1.3	1.7	JME 374	3.0	1.5	1.5
JEE 262	3.0	1.0	2.0	JME 376	3.0	0.5	2.5
JEE 279	3.0	1.0	2.0	JME 378	3.0	1.5	1.5
JEE 280	3.0	1.0	2.0	JME 381	3.0	0.5	2.5
JEE 290	3.0	1.0	2.0	JME 382	3.0	0.5	2.5
JEE 292	3.0	1.0	2.0	JME 390	4.0	4.0	0.0
JEE 310	3.0	1.0	2.0	JME 394	1.0	1.0	0.0

For Further Information

For information about enrolling in this program, please contact the UM-St. Louis/Washington University Joint Undergraduate Engineering Program at (314) 516-6800, or the Washington University School of Engineering and Applied Science at (314) 935-6100.

Career Outlook

Engineering is one of the few careers in which the bachelor's degree is a professional degree. Students earning a bachelor of science degree in one of the engineering disciplines are well qualified for entry-level engineering positions in a variety of businesses, industries, consulting firms, and government agencies. As society becomes increasingly dependent on technology, the outlook for all engineering disciplines becomes increasingly bright. Engineering careers typically rank at, or very near, the top of virtually any published rating of promising jobs for the 21st Century. Besides tackling challenging technical problems, roughly two-thirds of all engineers will have some level of management responsibility within ten years of receiving their bachelor's degrees. Many practicing engineers will eventually continue their education by pursuing graduate degrees on a part-time basis. Typical areas of graduate study include all advanced technical and scientific fields and management.

Course Descriptions

Prerequisites may be waived by consent of the joint program faculty.

Engineering

10 Introduction to Engineering (1)
Course consists of a series of lectures on engineering, fields of study within engineering, the engineering profession, types of work activities, and professional registration. Introduction to team building and the teamwork approach to projects and problem-solving common in an engineering curriculum and in the engineering profession. Guest lecturers will participate.

144 Statics (3)
Prerequisites: Math 175 and Physics 111. Statics of particles and rigid bodies. Equivalent systems of forces. Distributed forces: centroids. Applications to trusses, frames, machines, beams, and cables. Friction. Moments of inertia. Principle of virtual work and applications.

145 Dynamics (3)
Prerequisite: Engineering 144. Review of vector algebra and calculus. Kinematics of a particle. Newton's laws and the kinetics of a particle. Work and energy. Impulse and momentum. Kinematics of rigid bodies. General theorems for systems of particles. Kinetics of rigid bodies. The inertia tensor.

All courses listed below require admission to candidacy for a degree in the UM-St. Louis/ Washington University Joint Undergraduate Engineering Program. Prerequisites may be waived by consent of the Joint Program faculty. Audits are not permitted.

Chemical Engineering

JCHE 343 Environmental Engineering Chemistry (3)
Prerequisite: Chemistry 12. Introduction to the engineering aspects of air, water, soil, and geosphere chemistry. Toxicology and hazardous wastes. Pollution sources, dynamics, and ultimate fates. Sampling, control strategies, and regulations.

Civil Engineering

JCE 045 Engineering Graphics (3)
Prerequisite: Junior standing. Techniques in graphic communication and problem solving and design utilizing freehand sketches and computer graphics. Principles of orthographic projection, pictorial drawing, sectional views, dimensioning and tolerancing. Computer drawing and modeling: layout techniques, editing commands, drawing management, and plotting. Design project: individual or small group assignments, the design process, preliminary sketches, analysis, project modeling, detail and assembly drawings. This course is required for civil engineering majors.

JCE 116 Surveying (3)
Horizontal and vertical control surveys, including traverses, triangulation, trilateration, and leveling; basic adjustments of observations; geodetic data; coordinate systems. Basic route surveying, including horizontal and vertical curves.

JCE 241 Structural Analysis (3)
Prerequisite: JME 141. A review of the calculation of reactions, shear, and bending moment. Definition, construction and use of influence lines. Deflections for statically determinate structures using the virtual work method. Analysis of statically indeterminate trusses using the method of consistent deformations. Analysis of continuous beams and planar frames using the consistent deformation, slope-deflection and moment distribution methods. The influence of span on strength, stability, and economy of structures. An introduction to structural analysis software.

JCE 242 Structural Design (3)
Prerequisites: JME 225 and JCE 241. Fundamentals of structural design in steel, reinforced concrete, and timber. Familiarization with the sources of various design codes and practice in interpreting them. Computer graphics applications.

JCE 252 Environmental Engineering Science (3)
Prerequisite: JME 270 (may be taken concurrently) or permission of instructor. Application of the basic principles of chemistry, microbiology, and fluid mechanics to the analysis of environmental problems, especially those involving control of water and land contamination. Properties of municipal and industrial waste water, solid waste, and hazardous waste. Estimation of assimilative capacity and other characteristics of receiving waters. Introduction to unit processes and unit operations used in the treatment of municipal and industrial waste water. Design of professes and facilities used for treating drinking water, waste water, and sludge disposal. Waste minimization and recycling in both industrial and municipal settings

JCE 274 Hydraulics and Hydrology (3)
Prerequisite: JME 270 (may be taken concurrently). The concepts and theory of hydraulics and hydrology are discussed through lectures and practical engineering applications. Open channel flow, hydrograph analysis, watershed hydrology, frequency concepts, hydraulic design, and sedimentation are addressed.

JCE 276 Open Channel Hydraulics (3)
Prerequisite: JME 270. The principles of open channel flow will be discussed and illustrated with practical examples. Methods for channel design, storm sewer, culvert and bridge analysis will be presented using the concepts of gradually-varied, steady flow. A design project using computerized analysis and design is used to implement concepts in a large practical application.

JCE 300 Independent Study (1-6)
Prerequisites: Junior standing and consent of faculty adviser. Independent investigation of a civil engineering topic of special interest to a student performed under the direction of a faculty member.

JCE 308 Environmental Engineering Laboratory - Water/Soil (3)
Prerequisite: JCHE 343. Laboratory experiments to illustrate the application of engineering fundamentals to environmental systems. Characterization and control of water/soil pollutants. Introduction to relevant analytical instrumentation and laboratory techniques. Laboratory work supported with theoretical analysis and modeling as appropriate.

JCE 309 Environmental Engineering Laboratory - Air (3)
Prerequisite: JCHE 343. Laboratory Experiments to illustrate the application of engineering fundamentals to environmental systems. Characterization and control of air pollutants. Introduction to relevant analytical instrumentation and laboratory techniques. Laboratory work supported with theoretical analysis and modeling as appropriate.

JCE 310 Design of Timber Structures (3)
Prerequisites: JCE 241 and JCE 242. Study of basic physical and mechanical properties of wood and design considerations. Design and behavior of wood beams, columns, beam-columns, connectors, and fasteners. Introduction to plywood and glued laminates members. Analysis and design of structural diaphragms and shear walls.

JCE 316 Introduction to Elasticity (3)
Prerequisites: JCE 141. Introduction to elasticity: indicial notation, stress and strain, material laws. Plane stress and plane strain problems and illustrations. Torsion of prismatic bars. Energy principles: virtual work, potential energy and complementary energy theorems, reciprocal theorems . Introduction to plates and shells.

JCE 319 Soil Mechanics (3)
Prerequisites: JME 141 and JME 270. Basic geology as it relates to index and classification properties of soil. Exploration, sampling, and testing techniques. Soil compaction and stabilization. Capillary, shrinkage, swelling, and frost action in soils. Effective stress, permeability, seepage, and flow nets. Consolidation and consolidation settlements. Stresses in soil. Time rate of consolidation. Mohr's circle, stress path, and failure theories. Shearing strength of sand and clays.

JCE 320 Soil Exploration and Testing (1)
Prerequisite: JCE 319 (may be taken concurrently). Soil exploration; in-situ testing, laboratory testing of soil; processing of test data using a microcomputer; statistical analysis of test data; use of test results in the decision-making process.

JCE 325 Professional Engineering Services (3)
Prerequisites: Senior standing. Introduction to use and integration of professional services for Project Design and Delivery Systems in construction projects will be presented. The relationship between owner and professional service personnel, architects, engineers, contractors, and construction managers will be explored in detail. The role, techniques, procedures, management principles, and professional responsibilities will be presented and discussed. Real projects will be presented to illustrate various project delivery systems used in design and construction. These points will be illustrated through a semester-long team project.

JCE 337 Matrix Structural Analysis (3)
Prerequisites: JCE 241. Course will cover analysis of framed structures, planar and 3-D, using beam-column elements and shear walls and floors. Flexibility and stiffness analyses are performed by generating the matrices and carrying through the analyses step by step with a matrix manipulator program. A commercially available program is used to check at least one problem.

JCE 358 Structural Stability (3)
Prerequisites: Senior standing. Course will cover the following topics: classification of instability phenomena, imperfection sensitivity, illustration with mechanical models, systems with finite degrees of freedom, postbuckling analysis using perturbation techniques, stability and nonlinear behavior of struts, plates, and cylindrical shells, nonconservation problems, and numerical methods.

JCE 360 Highway and Traffic Engineering (3)
Prerequisites: JCE 116 and senior standing. Study of basic highway design and traffic circulation principles. Study of design elements of alignment, profile, cross-section, intersection types, interchange types, and controlled-access highways. Investigation of functional highway classification. Traffic volume, delay and accident studies. Analysis of highway capacity of uninterrupted flow, interrupted flow. Freeway, ramp, and weaving sections.

JCE 362 Transportation Planning (3)
Prerequisites: Senior standing. Course will cover the following: fundamentals of multimodal transportation planning, urban study components, including study design and organization, origin-destination analysis, traditional traffic model processes of trip generation, distribution and assignment, urban transportation entity analysis (shopping centers, terminals, etc.), state and regional study components, including state and national needs and capital improvement programs, regional funding capabilities and related national transportation policy and legislative acts.

JCE 364 Foundations (3)
Prerequisites: JCE 242, JCE 319 and JCE 320. Principal problems in design and construction of foundations for bridges and buildings. Bearing capacity of deep and shallow foundations; pressure on retaining walls and slope stability; modern developments in piling, cofferdams, open caissons, pneumatic caissons.

JCE 365 Airport Planning and Construction (3)
Prerequisites: Senior standing. Fundamentals of airport planning location, construction, and legislative and fiscal implementation. Location principles with respect to the region and the site. Analysis of air travel demand models. Air control systems and navigation principles affecting airport design. Design of the site for runway, taxiway, and terminal location. Pavement and construction principles with respect to design. Current federal policy and fiscal programming for airport planning. Principles of integration with ground transport systems.

JCE 366 Advanced Design of Concrete Structures (3)
Prerequisites: JME 225, JCE 241, JCE 242. Flexural behavior and design, strength and deformation of rectangular and nonrectangular sections, shear strength, beam-columns, long columns, slab systems, design of frames, and footings will be covered.

JCE 369 Construction Management Project (3)
Prerequisites: JCE 373 and JEP 281. The course entails the study of principles and steps involved in the development of a project from design through bidding and construction with emphasis on preconstruction planning and construction operations. The students will be required to submit a report on project budget, bidding strategy and construction schedule. Lecture topics will be supplemented by a resource pool of consultants on estimating, scheduling and contracting who will provide advice and guidance to the students.

JCE 372 Legal Aspects of Construction (3)
Prerequisite: Junior standing. A survey of the legal problems of the construction manager. Including but not limited to, liability in the areas of contracts, agency, torts, assurance, bad judgment and oversight.

JCE 373 Construction Operations and Management (3)
Prerequisite: Junior standing. The construction industry, its development, components, and organization. Contracting methods. Applications and limitations. Selection of equipment using production analysis and economics. Field engineering, including form design, shoring, embankment design. Purchasing and change orders. Safety and claims.

JCE 374 Economic Decisions in Engineering (3)
Prerequisite: Junior standing. Principles of economics involved in engineering decisions. Decisions between alternatives based on the efficient allocation of resources. Topics include the time element in economics, analytical techniques for economy studies, and taxes.

JCE 375 Introduction to Urban Planning (3)
Prerequisite: Senior standing. A focus on the fundamental factors and techniques that the civil engineer must consider: population, economic base, land use, urban design, regional analysis, fiscal analysis, zoning, and public facilities analysis. Synthesis of these techniques into a major student project, typically involving groups of three to six students. Each project is assigned by the instructor and usually involves a real-life situation or problem that requires original data collection. In-class presentation, discussion, and critique of each group project.

JCE 376 Site Planning and Engineering (3)
Prerequisite: Senior standing. A focus on the legal, engineering, and economic aspects of planning and design of facilities at a site-specific level. Concepts of legal and economic feasibility of site design are developed in conjunction with the study of civil engineering activities involved in dealing with urban design alternatives for residential, commercial, industrial, and recreational land uses. Case studies and review of current legislation affecting site planning and engineering are undertaken, culminating in a major design project.

JCE 377 Decision Analysis and Construction Applications (3)
Introduction and application of systems engineering and statistics toward solving construction and civil engineering problems. Included are the following topics: network and linear programming models, construction and evaluation of decision trees to clarify choice of actions under uncertainty, probability distributions, sample statistics, linear regression models, sampling plans for quality assurance. Personal computer usage emphasized for problem solving.

JCE 378 Knowledge-Based Expert Systems in Civil Engineering (3)
Prerequisite: JCS 36. Topics relating to the development of expert systems discussed with emphasis on application in civil and structural engineering. Subjects include knowledge engineering, frame- and rule-based expert systems, use of expert shells and tools, prototyping, and reasoning with uncertainty. Case studies and computer exercises supplement lectures. Students are expected to develop a prototype expert system.

JCE 380 Computer Applications in Construction Management (3)
Prerequisite: JCE 373. A comprehensive study of computer applications in construction management. Topics include: configuration of hardware/software requirements for the management of a typical project; application programs used in project date base management and project schedule/cost control systems; data management techniques and development of custom reports for use in project management and control.

JCE 382 Design of Water Quality Control Facilities (3)
Prerequisite: JCE 252. Application of environmental engineering principles to design of water and wastewater treatment facilities. Critical review of process design issues associated with physical, chemical, and biological treatment processes. Definition of problems and objectives, evaluation of alternatives, and use of these concepts in process design. Design-oriented class/group project.

JCE 384 Probabilistic Methods in Civil Engineering Design (3)
Prerequisite: JCE 242 (may be taken concurrently). Probability concepts. Analytical models of random phenomena. Functions of random variables. Estimating parameters from data. Empirical determination of distribution models. Regression and correlation analyses. Monte Carlo simulation. Detailed examples of the application of probabilistic methods to structural, transportation, hydrologic, and environmental system design.

JCE 386 Design of Masonry Structures (3)
Prerequisite: JCE 242. History of masonry construction; masonry materials and components; loadings for masonry structures; fundamentals of working stress design; fundamentals of strength design; design of gravity load resisting elements; design of lateral load resisting elements; details, connections and joints; design of low-rise buildings; design of high-rise buildings; design for water penetration resistance; quality control/inspection.

JCE 399 Senior Civil Engineering Seminar
Prerequisite: Senior standing. Students will research assigned topics of importance to graduates entering the Civil Engineering profession and prepare oral presentations and a written report. Student presentations will be augmented by lectures from practicing professionals. Topics include professional registration, early career development, graduate study, effective presentations, construction quality, and case histories of civil engineering projects.

Computer Science

JCS 36 Introduction to Computing (4)
Workshop course (lectures and supervised laboratory sessions) covering the fundamental organization and operating principles of digital computers and the systematic design and development of well-structured programs. After an intensive exposure to algorithmic principles and programming techniques and practices using the JAVA language, students learn about a computer's internal structure through the use of a simple Von Neumann machine simulator.

Electrical Engineering

JEE 150 Electrical Laboratory I (3)
Prerequisite: JEE 180. Lectures and laboratory exercises related to sophomore topics in introductory networks and basic electronics.

JEE 160 Digital Computers I: Organization and Logical Design (3)
Prerequisite: JCS 36. Digital computers and digital information-processing system; Boolean algebra, principles and methodology of logical design; machine language programming; register transfer logic; microprocessor hardware, software, and interfacing; fundamentals of digital circuits and systems; computer organization and control; memory systems; arithmetic unit design. Occasional laboratory exercises.

JEE 180 Introduction to Electrical Networks (3)
Prerequisites: Physics 112 and Math 202 (may be taken concurrently). Elements, sources, and interconnects. Ohm's and Kirchhoff's laws, superposition and Thevenin's theorem; the resistive circuit, transient analysis, sinusoidal analysis, and frequency response.

JEE 190 Introduction to Digital and Linear Electronics (3)
Prerequisite: JEE 180. Introduction to contemporary electronic devices and their circuit applications. Terminal characteristics of active semiconductor devices. Incremental and D-C models of junction diodes, bipolar transistor (BJTs), and metal-oxide semiconductor field effect transistors (MOSFETs) are developed and used to design single- and multi-stage amplifiers. Models of the BJT and MOSFET in cutoff and saturation regions are used to design digital circuits.

JEE 214 Engineering Electromagnetics I: Fundamentals (3)
Prerequisite: JEMT 217. Electromagnetic theory as applied to electrical engineering: vector calculus; electrostatics and magnetostatics; Maxwell's equations, including Poynting's theorem and boundary conditions; uniform plane-wave propagation; transmission lines - TEM modes, including treatment of general, lossless line, and pulse propagation; introduction to guided waves; introduction to radiation and scattering concepts.

JEE 227 Power, Energy, and Polyphase Circuits (3)
Prerequisite: JEE 180. Fundamental concepts of power and energy; electrical measurements; physical and electrical arrangement of electrical power systems; polyphase circuit theory and calculations; principle elements of electrical systems such as transformers, rotating machines, control, and protective devices, their description and characteristics; elements of industrial power system design.

JEE 262 Digital Computers II: Architecture (3)
Prerequisite: JEE 160. Study of interaction and design philosophy of hardware and software for digital computer systems: Machine organization, data structures, I/O considerations. Comparison of minicomputer architectures.

JEE 279 Signal Analysis for Electronic Systems and Circuits (3)
Prerequisites: JEE 180 and JEMT 217. Elementary concepts of continuous-time and discrete-time signals and systems. Linear time-invariant (LTI) systems, impulse response, convolution, Fourier series, Fourier transforms, and frequency-domain analysis of LTI systems. Laplace transforms, Z-transforms, and rational function descriptions of LTI systems. Principles of sampling and modulation. Students participate weekly in recitation sections to develop oral communications skills using class materials.

JEE 280 Network Analysis (3)
Prerequisite: JEE 279. Theoretical and practical aspects of electrical networks. Loop and nodal analysis of multiport networks. Transfer functions, admittance and impedance functions, and matrices. Magnitude and phase relations. Butterworth, Chebyshev, and other useful network response functions. Network theorems. Computer-aided design. Synthesis of passive (LC, RC, RLC) networks and of active (RC) networks.

JEE 290 Principles of Electronic Devices (3)
Prerequisite: Physics 112. Introduction to the solid-state physics of electronic materials and devices, including semiconductors, metals, insulators, diodes and transistors. Crystal growth technology and fundamental properties of crystals. Electronic properties and band structure of electronic materials, and electron transport in semiconductor materials. Fabrication of pn junction diodes, metal-semiconductor junctions, and transistors and integrated-circuit chips. Fundamental electrical properties of rectifying diodes and light-emitting diodes, bipolar transistors and field-effect transistors. Device physics of diodes and transistors, large-signal electrical behavior and high - frequency properties.

JEE 292 Electronic Devices and Circuits (3)
Prerequisite: JEE 190. Introduction to semiconductor electronic devices: transistors and diodes. Device electrical DC and high-frequency characteristics. Bipolar transistors, field-effect transistors, and MOS transistors for analog electronics applications. Transistor fabrication as discrete devices and as integrated-circuit chips. Large-signal analysis of transistor amplifiers: voltage gain, distortion, input resistance and output resistance. Analysis of multitransistor amplifiers: Darlington, Cascode, and coupled-pair configurations. Half-circuit concepts, differential-mode gain, common-mode gain, and differential-to-single-ended conversion. Transistor current sources, active loads, and power-amplifier stages. Applications to operational amplifiers and feedback circuits.

JEE 305 Product Engineering (3)
Prerequisites: JEM 226. Introduction to the principles of concurrent design and development and the importance of continuous interaction among engineering, finance, manufacturing, and marketing. Function analysis, value analysis, quality function deployment triad, and designing the best product with the least effort. Request for foolproof production: six sigma design, statistical process control (the "seven tools") and positive preventive action (the "five whys"). Lean production. Case studies will be integrated throughout.

JEE 310 Engineering Electromagnetics II: Applications (3)
Prerequisite: JEE 214. Study of important applications of electromagnetic theory. Solution of electrostatic and magnetostatic problems involving Laplace and Poisson's equations subject to boundary conditions. Maxwell's equations, including boundary conditions for dielectrics and conductors, reflection and transmission characteristics with effects due to losses. Study of guided waves in rectangular and optical wave guides, including effects of dispersion. S-parameters and transmission networks, including S-matrix properties, relation to impedance, reflection coefficient, VSWR, and Smith chart. Study of antennas, including exposure to terminology and thinwire antennas.

JEE 316 Electrical Energy Laboratory (3)
Prerequisite: JEE 150. Experimental studies of principles important in modern electrical energy systems. Topics: power measurement, transformers, batteries, static frequency converters, thermoelectric cooling, solar cells, electrical lighting, induction, commutator, and brushless motors, synchronous machines.

JEE 321 Communications Theory and Systems (3)
Prerequisites: JEE 279 and JEMT 226. Introduction to the concepts of transmission of information via communication channels. Amplitude and angle modulation for the transmission of continuous-time signals. Analog-to-digital conversion and pulse code modulation. Transmission of digital data. Introduction to random signals and noise and their effects on communication. Optimum detection systems in the presence of noise. Elementary information theory. Overview of various communication technologies such as radio, television, telephone networks, data communication, satellites, optical fiber, and cellular radio.

JEE 327 Special Topics in Real-Time Processing (3)
Prerequisite: Senior Standing. Microcontrollers and digital signal processors are often utilized in applications such as communications systems, automotive control systems, biomedical instrumentation, consumer appliances, and industrial control systems. The purpose of this course is to examine a variety of issues regarding the real-time application of embedded microprocessor systems. Topics will include digital processing, the operation of sensors and transducers, signal representation, system design and software development. Classes will include lecture and laboratory sessions. Depending on student interest, exemplary applications from the following list will be studied: automotive control, biomedical instrumentation, communication systems, speech processing, data compression, and audio and acoustic processing.

JEE 332 Control Systems II (3)
Prerequisite: JME 331. The control of physical systems with a digital computer, microprocessor, or special-purpose digital hardware is becoming very common. Course continues JME 331 to develop models and mathematical tools needed to analyze and design these digital, feedback-control systems. Linear, discrete dynamic systems. The Z-transform. Discrete equivalents to continuous transfer functions. Sampled-data control systems. Digital control systems design using transfer and state-space methods Systems comprised of digital and continuous subsystems. Quantization effects. System identification. Multivariable and optimum control.

JEE 345 Digital Signal Processing (3)
Prerequisite: JEE 279. Introduction to analysis and synthesis of discrete-time linear time-invariant (LTI) systems. Discrete-time convolution, discrete-time Fourier transform, Z-transform, rational function descriptions of discrete-time LTI systems. Sampling, analog-to-digital conversion and digital processing of analog signals. Techniques for the design of finite impulse response (FIR) and infinite impulse response (IIR) digital filters. Hardware implementation of digital filters and finite-register effects. The discrete Fourier transform and the fast Fourier transform (FFT) algorithm.

JEE 355 Digital Systems Laboratory (3)
Prerequisites: JEE 160 and JEE 190. Procedures for reliable digital design, both combinational and sequential; understanding manufacturers' specifications; use of special test equipment; characteristics of common SSI, MSI, and LSI devices; assembling, testing, and simulating design; construction procedures; maintaining signal integrity. Several single-period laboratory exercises, several design projects, and application of a microprocessor in digital design. Microprocessor programs are written in assembly language on a host computer and down loaded to the laboratory station for debugging. One lecture and one laboratory period a week.

JEE 358 Computer-Aided Design of Electronic Systems (3)
Prerequisites: JEE 190 and 279. Introduction to computer-aided Techniques in the solution of network and electronic design problems, including filters; analysis of linear and nonlinear circuits; methods for numerical integration, evaluation of the Fourier integral; numerical methods for solving differential equations, automated methods for design; sparse matrix techniques. Use of problem-oriented languages such as SPICE. Methods for the analysis and design of digital circuits and systems.

JEE 360 Digital Computers: Switching Theory (3)
Prerequisite: JEE 160. Advanced topics in switching theory as employed in the analysis and design of various information- and material-processing systems. Combinational techniques; minimization, logic elements, bilateral devices, multiple output networks, symmetrical and iterative functions, threshold logic, state identification and fault detection, hazards, and reliable design. Sequential techniques: synchronous circuits, state tables, machine minimization, state assignment, asynchronous circuits. finite state machines.

JEE 363 Digital Integrated Circuit Design and Architecture (3)
Prerequisite: JEE 190 and JEE 262. Brief review of device characteristics important to digital circuit operation, followed by detailed evaluation of steady-state and transient behavior of logic circuits. Implications of and design techniques for very large-scale integrated circuits including architecture, timing, and interconnection. Students must complete detailed design and layout of a digital circuit. Major emphasis on MOS digital circuits with some comparisons to other technologies.

JEE 364 Digital Systems Engineering (3)
Prerequisite: JEE 190. Design and characterization of digital circuits, reliable and predictable interconnection of digital devices, and information transfer over busses and other connections. Topics include: Review of MOSFET operation; CMOS logic gate electrical characteristics; System and single-point noise margin and noise budgets; Figures of merit for noise-margin and poser-delay product, and tradeoff between noise margin and propagation delay; Transmission-line driving including reflection, termination, non-zero transition time; lumped and distributed capacitance loads, non-linear terminations, and applicable conditions for lumped approximations; Coupled transmission lines, forward and backward crosstalk, short line approximations, ground bounce, and simultaneous switching noise; Timing, clocking, and clock distribution for digital circuits; Prediction of metastability error rates and design for acceptable probability of failure. Examples and design exercises using systems and interconnections selected from current Computer Engineering practice such as RAMBUS, PCI bus, GTL, LVDS, and others.

JEE 368 Applied Optics (3)
Prerequisite: JEE 214. Topics relevant to the engineering and physics of conventional as well as experimental optical systems and applications explored. Items addressed include geometrical optics, Fourier optics such as diffraction and holography, polarization and optical birefringence such as liquid crystals, and nonlinear optical phenomena and devices.

JEE 380 Senior Design Project (3)
Prerequisite: Senior standing. Working in teams, students address design tasks assigned by faculty. Each student participates in one or more design projects in a semester. Projects are chosen to emphasize the design process, with the designer choosing one of several paths to a possible result. Collaboration with industry and all divisions of the university is encouraged.

Engineering and Policy

JEP 281 Topics in Engineering Management (3)
Prerequisite: Junior standing. Techniques relating to managing engineering professionals and engineering activities are introduced and discussed. The engineer's transition into project and project team management. Role of engineering and technology in major corporations. Engineering managerial functions, including production and use of financial information in planning, scheduling, and assessing engineering projects. Motivation of individual and group behavior among technical professionals. Macroeconomic factors influencing technical decision-making and engineering project management. Additional topics will vary from year to year, but will typically include government relations, regulation, compensation, ethics, production, operations, the quality function, and technological innovation.

JEP 337 Environmental Risk Assessment (3)
Prerequisite: JCE 374 or JEMT 226. Definition of risk and uncertainty. Risk assessment concepts and their practical application. Principles of human health and ecological toxicology. Bioassays. Exposure characterization, modeling, and measurement. Qualitative and quantitative evaluation of human and animal studies. Dose-response models and parameter estimation. Low-dose extrapolation. Structure activity relationships. Estimating individual risk and aggregate risk. Risk assessment methods in regulatory decision making and standard setting. Application of risk assessment in hazardous waste site evaluation and remediation.

JEP 361 Introduction to Environmental Law and Policy (3)
Prerequisite: Junior standing. Survey of the most prominent federal laws governing environmental compliance and pollution control. Examines laws applicable to environmental impact statements, air pollution, water pollution, and hazardous waste. Addresses policy concerning the relative merits of using technological capabilities as compared to health risks in setting environmental standards. Discusses the need for environmental regulation to protect societal resources.

Engineering Communications

JEC 210 Engineering Communications (3)
Prerequisites: English 10 and junior standing. Persistent concerns of grammar and style. Analysis and discussion of clear sentence and paragraph structure and of organization in complete technical documents. Guidelines for effective layout and graphics. Examples and exercises stressing audience analysis, graphic aids, editing, and readability. Videotaped work in oral presentation of technical projects. Writing assignments include descriptions of mechanisms, process instructions, basic proposals, letters and memos, and a long formal report.

Engineering Mathematics

JEMT 217 Engineering Mathematics (4)
Prerequisite: Math 202. The Laplace transform and applications; series solutions of differential equations, Bessel's equation, Legendre's equation, special functions; matrices, eigenvalues, and eigenfunctions; vector analysis and applications; boundary value problems and spectral representation; Fourier series and Fourier integrals; solution of partial differential equations of mathematical physics.

JEMT 226 Probability and Statistics for Engineering (3)
Prerequisite: Math 180. Study of probability and statistics together with engineering applications. Probability and statistics: random variables, distribution functions, density functions, expectations, means, variances, combinatorial probability, geometric probability, normal random variables, joint distribution, independence, correlation, conditional probability, Bayes theorem, the law of large numbers, the central limit theorem. Applications: reliability, quality control, acceptance sampling, linear regression, design and analysis of experiments, estimation, hypothesis testing. Examples are taken from engineering applications. This course is required for electrical and mechanical engineering majors.

Mechanical Engineering

JME 41 Introduction to Engineering Design (3)
An introduction to engineering design in the context of mechanical engineering. The course is presented in two parallel tracks. In the hands-on laboratory track, students first complete a series of experiments that introduce physical phenomena related to mechanical engineering. Understanding of these phenomena is achieved by designing and building simple devices and machines. The hands-on track then proceeds to a design contest in which students design and build from a kit of parts a more significant machine that competes in a contest held at the end of the course. In the engineering graphics track, students learn the fundamentals of spatial reasoning and graphical representation. Freehand sketching skills include pictorial and orthographic views are applied to the design process. Computer modeling techniques provide accuracy, analysis and visualization tools necessary for the design of the contest machine. Detailing the design for production (including fasteners, dimensioning and tolerancing on part and assembly drawings) is applied to the student's contest machine.

JME 41A The Engineering Design Process (2)
An introduction to engineering design in the context of mechanical or civil engineering. In the hands-on laboratory, students first complete a series of experiments that introduce physical phenomena related to mechanical or civil engineering. Understanding of these phenomena is achieved by designing and building simple devices and machines. This proceeds to a design contest in which the students design and build from a kit of parts a more significant machine that competes in a contest held at the end of the course. Specifically designed for those ME students who have earned credit for a CAD course before entering the Joint Engineering Program.

JME 141 Mechanics of Deformable Bodies (3)
Prerequisites: Math 175 and Engineering 144. Normal and shear stresses and strains. Stress-strain diagrams. Hooke's law and elastic energy. Thermal stresses. Stresses in beams, columns, torsional members, and pressure vessels. Elastic deflection of beams and shafts. Statically indeterminate structures. Mohr's circle of stress. Stability concepts.

JME 204 Analytical Approaches to Design (3)
Prerequisites: JME 041; JME 141 and JEMT 217 (may be taken concurrently). Provides a thorough overview of the steps in the engineering design process and introduces analytical/quantitative techniques applicable to each step. Topics include recognition of need, specification, formulation, concept generation, concept selection, embodiment and detail design, optimization, geometric representation for visualization and manufacture, and product life cycle concerns. Case studies introducing and applying analytical techniques such as kinematic/dynamic analysis and the finite element method will be presented. This course is required preparation for subsequent design project courses.

JME 220 Thermodynamics (3)
Prerequisites: Math 175, Chemistry 11 and Physics 111. Classical thermodynamics, thermodynamic properties, work and heat, first and second laws. Entropy, irreversibility, availability. Application to engineering systems.

JME 221 Energetics for Mechanical Engineers (3)
Prerequisite: JME 220. Thermodynamic cycle analysis: vapor power, internal combustion, gas turbine, refrigeration. Maxwell relations and generalized property relationships for non ideal gases. Mixtures of ideal gases, psychrometrics, ideal solutions. Combustion processes, first and second law applications to reacting systems. Chemical equilibrium. Compressible flow in nozzles and diffusers.

JME 222 Introduction to Machine Design (3)
Prerequisites: JCS 36, JME 141 and Math 202. Design of machines and machine components using advanced concepts and analytical tools. Overview and definition of feasibility, synthesis, and analysis as used in design. Determination of loads, material properties, factors of safety and their statistical distributions. Analysis of stress and performance. Failure criteria: yielding, fracture, fatigue, stress-corrosion cracking, creep, etc. Formulation of solutions and optimization of design. Applications to design of shafts, springs, fasteners, belts, chains, bearings, gears, and screws. Use of computer techniques to determine velocities, accelerations, and forces in mechanisms and in stress analysis of components.

JME 225 Materials Science (4)
Prerequisite: Chemistry 11. Introduces the chemistry and physics of engineering materials. Emphasis on atomic and molecular interpretation of physical and chemical properties, the relationships between physical and chemical properties, and performance of an engineering material.

JME 262 Materials Engineering (3)
Prerequisite: JME 225. This course deals with the application of fundamental materials science principles in various engineering disciplines. Topics covered include design of new materials having unique property combinations, selection of materials for use in specific service environments, prediction of materials performance under service conditions, and development of processes to produce materials with improved properties. The structural as well as functional use of metals, polymers, ceramics, and composites will be discussed.

JME 270 Fluid Mechanics (3)
Prerequisites: JEMT 217 and Engineering 145. Fundamental concepts of fluids as continua. Viscosity. Flow field: velocity, vorticity, streamlines. Fluid statics: hydrostatic forces manometers. Conservation of mass and momentum. Incompressible inviscid flow. Dimensional analysis and similitude. Flow in pipes and ducts. Flow measurement. Boundary-layer concepts. Flow in open channels.

JME 271 Principles of Heat Transfer (3)
Prerequisites: JME 220, JME 270 and JEMT 217. Introductory treatment of the principles of heat transfer by conduction, convection, or radiation. Mathematical analysis of steady and unsteady conduction along with numerical methods. Analytical and semiempirical methods of forced and natural convection systems. heat exchangers: LMTD and e-NTU analysis. Boiling and condensation heat transfer. Radiation between blackbody and real surfaces. Radiation network analysis.

JME 280 Fluid Mechanics Laboratory (1)
Prerequisite: JME 270. Physical laboratory exercises focusing on fluid properties and flow phenomena covered in JME 270. Calibration and use of a variety of equipment; acquisition, processing, and analysis of data by manual as well as automated methods.

JME 281 Heat Transfer Laboratory (1)
Prerequisites: JME 280 and JME 271. Physical laboratory exercises, including some numerical simulations and computational exercises, focusing on heat-transfer phenomena covered in JME 271. Calibration and use of variety of laboratory instrumentation; acquisition, processing, and analysis of data by manual as well as automated methods; training in formal report writing.

JME 300 Independent Study (1-6)
Prerequisites: Junior standing and consent of the faculty adviser. Independent investigation of a mechanical engineering topic of special interest to a student performed under the direction of a faculty member.

JME 316 Advanced Strength and Introductory Elasticity (3)
Prerequisite: JME 141. Introduction to elasticity; indicial notation, stress and strain, material laws. Plane stress and strain problems and illustrations. Torsion of prismatic bars. Energy principles: virtual work, potential energy and complementary energy theorems, reciprocal theorems.

JME 317 Dynamic Response of Physical Systems (2)
Prerequisites: Engineering 145 and JEMT 217; JME 317 and JME 318 must be taken during the same semester. Free and forced vibration of mechanical systems with lumped inertia, springs, and dampers. Methods of Laplace transform, complex harmonic balance, and Fourier series. Electrical analogs. Introduction to Lagrange's equations of motion and matrix formulations. Transient response of continuous systems by partial differential equations, by Rayleigh methods, and by lumped parameters.

JME 318 Dynamic Response Laboratory (2)
Prerequisite: JME 317 and JME 318 must be taken during the same semester. Laboratory problems focusing on materials covered in JME 317.

JME 319 Experimental Methods in Fluid Mechanics (3)
Prerequisites: JME 270, JME 280 and consent of instructor. Experimental approach to problem solving and validation of theoretical/computational methods. Uncertainties in measurement. Review of fundamental equations of fluid dynamics, properties of gases and liquids, similarity laws. Boundary layers, transition turbulence, flow separation. Viscoelastic and multi-phase flows. Wind tunnels, water channels, simulation of phenomena in processing equipment. Pressure sensors, including optically-reactive surface paint. Measurement of velocity with pitot- and venturi-tubes, hot-wire anemometry, ultrasonic probes, laser-Doppler (LDV) and particle-image (PIV) instruments. Compressibility corrections. Measurement of skin friction by direct force sensors, Preston- and Stanton-tubes, diffusion analogies, liquid crystals. Flow visualization with laser light sheet; Schlieren, shadowgraph and interferometric methods. Future trends; flow control, impact of microelectronic sensors and actuators. Laboratory demonstrations using available instrumentation.

JME 324 Manufacturing Processes (3)
Prerequisite: Senior standing. Introduction to the processes used in making basic components for machines and structures. Emphasis is on the underlying scientific principles for such manufacturing processes as casting, forging, extrusion and machining.

JME 325 Materials Selection in Engineering Design (3)
Prerequisite: Senior standing. Analysis of the scientific bases of material behavior in the light of research contributions of the last 20 years. Development of a rational approach to the selection of materials to meet a wide range of design requirements for conventional and advanced applications. Although emphasis will be placed on mechanical properties, other properties of interest in design will be discussed, e.g., acoustical, optical and thermal.

JME 329 Flexible Manufacturing Automation (3)
Prerequisite: Senior standing. Survey of the application of robots in the automation of manufacturing industries. Use of robots to increase productivity, to improve quality or to improve safety. Special studies of applications of robots in painting, welding, inspection and assembly.

JME 331 Control Systems I (3)
Prerequisite: JEMT 217. Introduction to automatic control concepts. Block diagram representation of single- and multi-loop systems. Multi-input and multi-output systems. Control system components. Transient and steady-state performance; stability analysis; Routh, Nyquist, Bode, and root locus diagrams. Compensation using lead, lag, and lead-lag networks. Synthesis by Bode plots and root-locus diagrams. Introduction to state-variable techniques, state transition matrix, state-variable feedback.

JME 344 Solar Energy (3)
Prerequisites: JME 220, JME 270, and JME 271. Course will cover extraterrestrial solar radiation, solar radiation on the earth's surface, weather bureau data, review of selected topics in heat transfer, methods of solar energy collection including flat panel and concentrating collectors, solar energy storage, transient and long-term solar system performance.

JME 350 Computer-Integrated Manufacturing (3)
Prerequisite: Senior standing. Analysis and design of computer-integrated systems for discrete parts and assemblies manufacturing. Process planning, control, manufacturing decision support systems, microcomputers and networks. Programming of spatially oriented tasks, code generation, system integration. CIMLab assignments.

JME 353 Facilities Design (3)
Prerequisite: Senior standing. The goal of the course is to provide the student with the information and analytical tools necessary to take a product design into production and for the design of an efficient manufacturing facility that will make the production feasible. Quantitative methods in the design of manufacturing facilities. Space allocation, assembly line design, material-handling systems, utilities and environmental design for manufacturing facilities. Facility-location selection. Plant-layout development. Building, organization, communications and support system design. Material-handling equipment, flow and packaging. Automated storage and retrieval systems design. Computer aided design of manufacturing facilities. Environmental requirements and design. Utilities design. In a major project, students will be required to analyze the design of a product and plan the manufacturing facility for its production.

JME 372 Fluid Mechanics II (3)
Prerequisites: JME 220 and JME 270. Mechanics and thermodynamics of incompressible and compressible flows: varying-area adiabatic flow, standing normal and oblique shock waves, Prandtl-Meyer flow, Fanno flow, Rayleigh flow, turbulent flow in ducts and boundary layers.

JME 374 Analysis and Design of Turbomachinery (3)
Prerequisite: Senior standing. The principles of thermodynamics and fluid dynamics applied to the analysis, design and development of turbomachinery for compressible and incompressible flows. Momentum transfer in turbomachines. Design of axial and radial compressors and turbines, diffusers, heat exchangers, combustors, and pumps. Operating characteristics of components and performance of power plants.

JME 376 The Engineering Properties of Materials (3)
Prerequisite: Junior standing. A detailed look at themechanical, chemical, and surface properties of materials. Topics include elastic properties; plastic deformation; viscoelastic behavior; chemical resistance; corrosion resistance; and the electromagnetic properties of metal, plastic, ceramic, and composite systems.

JME 378 Analysis and Design of Piston Engines (3)
Prerequisite: Senior standing. The principles of thermodynamics and fluid dynamics applied to the analysis, design and development of piston engines. Examination of design features and operating characteristics of diesel, spark-ignition, stratified-charge, and mixed-cycle engines. Study of the effects of combustion, fuel properties, turbocharging and other power-boosting schemes on the power, efficiency and emission characteristics of the engines.

JME 380 Building environmental Systems Parameters (3)
Sustainable design of building lighting and HVAC systems considering performance, life-cycle cost and downstream environmental impact. Criteria, codes and standards for comfort, air quality, noise/vibration and illumination. Life cycle and other investment methods to integrate energy consumption/conservation, utility rates, initial cost, system/component longevity, maintenance cost and building productivity. Direct and secondary contributions to acid rain, global warming and ozone depletion.

JME 381 Air-Conditioning Systems and Equipment I (3)
Prerequisite: Senior standing. Survey of air conditioning systems. Moist air properties and conditioning processes. Adiabatic saturation. Psychrometric chart. Environmental indices. Indoor air quality. Heat balances in building structures. Solar radiation. Space heating and cooling loads.

JME 382 Air-Conditioning Systems and Equipment II (3)
Prerequisite: Senior standing. Fluid flow, pumps, and piping design. Room air distribution. Fans and building air distribution. Mass transfer and measurement of humidity. Direct control of heat and mass transfer. Heat exchangers. Refrigeration systems. Absorption refrigeration.

JME 390 Senior Design Project (4)
Prerequisite: Senior standing. Working in small groups, students address design tasks assigned by faculty. Each group completes three design projects in a semester. Projects are chosen to emphasize the design process, with the designer choosing one of several paths to a possible result. Collaboration with industry is encouraged.

JME 394 Mechanical Engineering Design Lab (1)
Prerequisites: JME 204 and JME 222; JME 390 (may be take concurrently.) Students are assigned individual design problems of sufficient complexity to require integration of several machines or machine elements. Projects consist of an open-ended, original design or a creative redesign of a machine or a mechanical component or system. Manufacturing and testing of a prototype and performing laboratory evaluation of mechanical systems requiring the application of those engineering science principles inherent to mechanical engineering is expected of each student. Guidance and consultation are provided by the course instructors and staff.

Faculty

Victor Birman, Professor; Director
Ph.D., Israel Institute of Technology
James H. Hahn, P.E., Associate Professor Emeritus
Ph.D., University of Missouri-Rolla
C. Ben Basye, P.E., Professor Emeritus
Ph.D., Iowa State University
Anton de S. Brasunas, P.E., Professor Emeritus
Sc.D., Massachusetts Institute of Technology
David A. Shaller, Assistant Professor Emeritus
J.D., Cleveland State University

General Information

The UM-Rolla Engineering Education Center was started in 1964 at the request of St. Louis industry and with the encouragement of local universities. It offers master of science degrees in the following areas:

Aerospace engineering
Civil engineering
Computer engineering
Electrical engineering
Engineering management
Engineering mechanics
Environmental engineering
Manufacturing engineering
Mechanical engineering

Admission to candidacy for these degrees is granted by the University of Missouri-Rolla. Normally admission is granted to persons holding B.S. degrees in engineering from ABET-accredited schools and whose undergraduate GPA places them in the upper third of their graduating class.

An appropriately selected program of 30 credit hours is required for the master of science degree. Both thesis and non-these programs are available.

Course Listings

Course listings for the various semesters may be obtained by writing or phoning the Engineering Education Center. Course descriptions are listed in the UMR graduate catalog.

The Engineering Education Center also provides information to St. Louis area residents about UMR programs in Rolla. The center can assist area pre-engineering students with transfer to the Rolla campus and with entry into the cooperative training programs that exist 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.

Fees

Fees for Engineering Center programs are different from those on the UM-Rolla or UM-St. Louis campus. For information about the UM-Rolla graduate engineering evening program on the UM-St. Louis campus, write to UM-Rolla Graduate Engineering Education Center, University of Missouri, 8001 Natural Bridge Road, St. Louis, Missouri 63121, or phone (314) 516-5431. http://www.umr.edu/~umreec.

Students interested in Reserve Officer Training Corps programs may enroll in either the Army ROTC program at UM-St. Louis or the Air Force ROTC program sponsored at UM-St. Louis through Saint Louis University. These programs provide undergraduate and graduate students with the opportunity to combine academic study with a military officer training program.

For further information concerning the Army ROTC program, contact the Military Science Department at Washington University, telephone 935-5537 or check out our Web site at http://userfs.cec.wustl.edu/~rotc. For information on the Air Force ROTC program, contact the Aerospace Science Department at Saint Louis University, telephone 977-8227

Army ROTC

The purpose of the Military Science Department is to develop young men and women into junior commissioned officers for positions of responsibility in the Army Reserve, Army National Guard, or Active Army.

Benefits

Army ROTC offers UM-St. Louis students:

1) A challenging, important, well-paid job at graduation in one of the many professional fields that the modern Army has to offer. Army officers serve in such fields as intelligence, military police, communications, engineering, transportation management, finance, combat arms, hospital administration, nursing, and research and development. Starting salary with allowances of an active duty second lieutenant is approximately $27,000. Within four years he/she should be promoted to captain with a salary and allowances of nearly $48,000. Reserve officers attend one weekend per month and an annual two-week training camp.

2) College financing. All advance course and Army ROTC scholarship students receive $200/month stipend. Only scholarship students receive $450 for books and supplies. Also, advance course students may join the Reserves as an office trainee and receive pay while in college.

3) Full-time enrolled students may compete for the Army ROTC scholarship. The scholarship pays for tuition, fees, and books.

4) Option of two careers. Upon graduation and commissioning as officers in the U.S. Army, students may fulfill their obligation by serving on active duty or reserve duty. Reserve officers spend one weekend a month being a soldier. Officers who serve on active duty receive 30 days paid vacation every year, free medical and dental care, travel, and the opportunity to pursue advanced degrees with educational assistance from the Army on a fully funded or partially funded basis.

The Program

College students who complete the ROTC program earn commissions as second lieutenants in the U.S. Army. The ROTC program may be completed in several different ways as outlined below.

1) Four-Year Program. The military science program is traditionally offered as a four-year program. It is best to start as a freshman, but special arrangements can be made for those who start as sophomores. The first two years of military science are voluntary without service obligation, and are designed to give students a perspective on their leadership ability and what the Army can offer them. The student who decides to continue in ROTC and pursue a commission signs an agreement with the Department of the Army to accept a commission upon completion of the last two years of military science. In return the Army agrees to provide a subsistence allowance (up to $4,000) and to provide all necessary uniforms and military science books.

2) Two-Year Program. The two-year program is designed to provide greater flexibility in meeting the needs of students desiring commissions in the U.S. Army. UM-St. Louis students who did not participate in the four-year program and junior college transfer students are eligible for enrollment. Basic prerequisites for entering the two-year program are:

A) The students must be in good academic standing (minimum 2.0 GPA) and pass an Army medical examination.

B) The student must have two academic years of study remaining (undergraduate, graduate, or combination). The student will attend a six-week summer camp to catch up with the students in the four-year program. Attendance at the basic camp does not obligate the student in any way and is only intended to give the student a look at Army life and opportunities. The student will be paid approximately $750 for attendance at basic camp.

Veterans

Veterans of any of the armed forces may qualify for advanced placement and should contact the Military Science Department for details.

Scholarships

The Army ROTC currently has scholarships in effect, which pay toward tuition, fees, and books, and provide $200/month for the academic year.

These scholarships cover either four, three, or two years. UM-St. Louis freshmen and sophomores should apply in January for the two- and three-year scholarships. Scholarship students may incur a four-year active duty obligation; however, they may request reserve duty to serve with the Army National Guard or Reserve.

Qualifications
All students who desire to enter the Army Reserve Officer Training Corps must be U.S. citizens, in good physical condition, and have high moral character. Students must be at least 17 years old to enroll and not over 30 when they receive their commission. Additional qualifications to be admitted into the advanced course include an academic average of C or better and passing an Army medical examination.

Academics
UM-St. Louis Army Reserve Officers Training Corps academics consist of two parts:

1) Earning a degree in the student=s chosen academic subject.

2) Completing 18 credit hours (four-year program) or 12 credit hours (two-year program) of the military science curriculum. The courses in military science are college-level academic courses which receive full academic credit toward the student's elective degree requirements in the College of Business Administration and the College of Education. The curriculum consists of classroom instruction and a leadership laboratory in which students receive leadership experience.

Leadership Laboratory
Leadership laboratory is required of all students enrolled in military science courses. Classes are two hours every Thursday afternoon from 4 p.m. to 6 p.m., unless otherwise designated. In addition, students attend one field training exercise each semester. Leadership laboratory develops individual military skills and leadership ability through participation in drill and ceremonies, survival training, mountaineering, field-training exercises, and exposure to progressively greater responsibilities within the Cadet Corps organization.

Graduate Study
The Army realizes the importance of a graduate degree for its personnel. There are several programs available to assist ROTC graduates in obtaining an advanced degree. The Army sends selected second lieutenants immediately to graduate school (with full pay and allowances) to pursue advanced degrees in engineering and the physical sciences. Other officers may postpone active duty for two years to continue graduate study. Students who are accepted into medical school may take up to four years to complete their studies. There are numerous opportunities for an officer to complete a master=s degree in service and receive financial assistance from the Army.

Special Training
Selected volunteers may attend one of several special schools during the summer: the Airborne Course at Fort Benning, GA; Air Assault School at Fort Campbell, KY; or the Northern Warfare School in Alaska. Successful course completion earns the coveted badge (such as the jump wings or air assault wings) associated with each school. Special cadet troop leadership training is available on a limited basis. Students participating in the program live and work with an active Army unit during part of one summer.

Cadet Activities
Army ROTC students may participate in many extracurricular activities during the year. Social activities include the Army Military Ball, a fall canoe trip down the Meramec River, picnics, and informal parties. Army ROTC students also support various campus and community service activities. Interested students also participate in the Raider Club, Drill Team, Color Guard, and Ranger Challenge Team.

Course Descriptions

Military Science

101 Introduction to ROTC (2)
Make your first new peer group at college one committed to performing well and enjoying the experience. Increase self-confidence through team study and activities in basic drill, physical fitness, rappelling, leadership reaction course, first aid, making presentations and basic marksmanship. Learn fundamental concepts of leadership in a profession in both classroom and outdoor laboratory environments.

102 Introduction to Leadership (3)
Learn/apply principles of effective leading. Reinforce self-confidence through participation in physically and mentally challenging exercises with upper division ROTC students. Develop communication skills to improve individual performance and group interaction. Relate organizational ethical values to the effectiveness of a leader.

201 Self/Team Development (3)
Learn/apply ethics-based leadership skills that develop individual abilities and contribute to the building of effective teams of people. Develop skills in oral presentations, writing concisely, planning of events, coordination of group efforts, advanced first aid, land navigation and basic military tactics. Learn fundamentals of ROTC=s Leadership Development Program.

202 Individual/Team Military Tactics (3)
Introduction to individual and team aspects of military tactics in small unit operations. Includes use of radio communications, making safety assessments, movement techniques, planning for team safety/security and methods of pre-execution checks. Practical exercises with upper division ROTC students. Learn techniques for training others as an aspect of continued leadership development.

301 Leading Small Organizations I (3)
Series of practical opportunities to lead small groups, receive personal assessments and encouragement, and lead again in situations of increasing complexity. Uses small unit defensive tactics and opportunities to plan and conduct training for lower division students both to develop such skills and as vehicles for practicing leading.

302 Leading Small Organizations II (3)
Continues methodology of MS 301. Analyze tasks; prepare written or roal guidance for team members to accomplish tasks. Delegate tasks and supervise. Plan for and adapt to the unexpected in organizations under stress. Examine and apply lessons from leadership case studies. Examine importance of ethical decision making in setting a positive climate that enhances team performance.

401 Leadership Challenges and Goal Setting (3)
Plan, conduct and evaluate activities of the ROTC cadet organization. Articulate goals, put plans into action to attain them. Assess organizational cohesion and develop strategies to improve it. Develop confidence in skills to lead people to manage resources. Learn/apply various Army policies and programs in this effort.

402 Transition to Lieutenant (3)
Continues the methodology form MS 401. Identify and resolve ethical dilemmas. Refine counseling and motivating techniques. Examine aspects of tradition and laws as related to leading as an officer in the Army. Prepare for a future as a successful Army lieutenant

These courses are taught at Saint Louis University, Washington University, or University of Missouri-St. Louis. Students should check the *Schedule of Courses* each semester for locations.

Air Force ROTC

The objective of the Air Force Reserve Officer Training Corps is to qualify students for appointment as active duty second lieutenants in the United States Air Force. However, any student may enroll in the freshman/ sophomore-level aerospace studies courses, and students may also enroll in the junior/senior-level courses with permission of the professor of aerospace studies.

UM-St. Louis offers the two- and four-year AFROTC programs through an agreement with Saint Louis University.

The four-year program is tailored for students with three or more years of undergraduate studies remaining. Students with junior standing or above may apply for entry into the two-year program. Entry into the two-year program is competitive and is based on standardized test scores, academic major, grade-point average, physical examination, personal interview with the professor of aerospace studies, and successful completion of a summer field training session at an Air Force base. Applicants must be full-time students and must remain in good academic standing.

Reserve Officer Training Corps

The AFROTC Program is divided into the general military course (GMC), the freshman/sophomore level curriculum; and the professional officer course (POC), the junior/ senior level curriculum. The GMC covers two main themes; the Air Force today and the Air Force way. The courses of the POC emphasize the professional development of the future Air Force officer. The curriculum covers Air Force leadership and management and preparation for active duty. Field trips to Air Force bases supplement classroom instruction and familiarize the cadet with Air Force operations and organization.

To be commissioned, AFROTC students/cadets must:

1) Pass a medical exam at a military medical facility.
2) Obtain a favorable evaluation on an Armed Forces personal history security investigation.
3) Flying applicants must complete commissioning requirements before age 26-1/2, and nonflying applicants must complete commissioning requirements by age 30. However, the age limit for nonflying applicants may be extended to age 35 for outstanding individuals.
4) Be of good character (as determined by a favorable record with law enforcement authorities).
5) Successfully complete all AFROTC course requirements.
6) Complete at least a baccalaureate degree.

Air Force ROTC textbooks are loaned to all AFROTC students without charge. Students in the POC will receive a monthly subsistence allowance of $150 per month for a maximum of 20 months, an Air Force uniform, in excess of $700 for the summer field training course, and a travel allowance to and from the training location.

In addition to the AFROTC courses offered for academic credit, the Aerospace Studies Department sponsors the Arnold Air Society and Angel Flight. Arnold Air Society is a national honorary service organization, and membership is open to anyone interested in bringing to the local community a better understanding of the Air Force mission and its leaders.

AFROTC field training is offered during the summer months at selected bases throughout the United States, usually between a student=s sophomore and junior years. Students in the four-year program participate in four weeks of field training. Major areas of study include junior officer training, aircrew/aircraft orientation, career orientation, survival training, base functions and Air Force environment, and physical training.

Students applying for entry into the two-year program must successfully complete six weeks of field training prior to enrollment in the professional officer course. The major areas of study included in the six-week field training program are essentially the same as those conducted at four-week field training, plus the academic curriculum of the general military course including leadership laboratory. POC cadets are eligible for a $1,000 per semester federal AFROTC scholarship.

Leadership Laboratory is taken once per week throughout the student's enrollment in AFROTC. Instruction is conducted within the framework of an organized cadet corps with a progression of experiences designed to develop each student's leadership potential. Leadership laboratory involves a study of Air Force customs and courtesies, drill and ceremonies, career opportunities in the Air Force, and the life and work of an Air Force junior officer. It also includes field trips to Air Force installations throughout the United States.

Other training volunteers may attend various special cadet training programs such as light aircraft training, parachute jump training, and advance cadet training. Students participating in the latter work with an Air Force unit during part of the summer.

The Air Force offers four-, three-, and two-year scholarships to qualified students. These scholarships pay tuition, certain fees, and textbook cost. Scholarship recipients receive $150 per month subsistence allowance.

For further information on the Air Force ROTC program at UM-St. Louis, call (314) 977-8227, or at Southern Illinois University at Edwardsville (SIUE), call (618) 692-3180.

Aerospace Studies

The Aerospace studies program is divided into two parts: the general military course, the freshman/ sophomore level curriculum, and the professional officer course, the junior/senior level curriculum. The GMC covers two main themes: the Air Force today and the Air Force way. The courses of the POC emphasize the professional development of the future Air Force officer. The curriculum covers Air Force leadership and management and preparation for active duty. Field trips to Air Force bases supplement classroom instructions and familiarize the cadet with Air Force operations and organizations.

Leadership laboratory is taken two hours per week throughout the student's enrollment in the AFROTC. Instruction is conducted within the framework of an organized cadet corps with a progression of experiences designed to develop each student's leadership potential. The first two years of the leadership laboratory includes a study of Air Force customs and courtesies, drill and ceremonies, issuing military commands, instructing, directing and evaluating the preceding skills, studying the environment of an Air Force officer and learning about areas of opportunity available to commissioned officers. The last two years of lab consist of activities classified as advanced leadership experiences. They involve planning and controlling military activities of the cadet corps, preparation and presentation of briefings and other oral and written communications, and providing interviews, guidance, and information which will increase the understanding, motivation, and performance of other cadets.

AFROTC cadets must also successfully complete supplemental courses to enhance their utility and performance as commissioned officers. These include university courses in English composition and mathematical reasoning. Specific courses are designated by the professor of aerospace studies.

Cadets in the four-year program participate in four weeks of field training. Cadets in the two- or three- year programs (exception for prior AF service) must attend the six-week FT session, which is identical to the four-week program plus 90 hours of GMC curriculum. Field training is offered during the summer months at selected bases throughout the United States, usually between a student's sophomore and junior years. Major areas of study include Air Force orientation, officer training, aircrew/aircraft orientation, survival training, base functions, and physical training.

Students applying for entry into the two- or three- year program must successfully complete six weeks of field training prior to enrollment in the professional officer course. The major areas of study included in the six-week field training program are essentially the same as those conducted at four-week field training, plus the academic curriculum of the general military course including leadership laboratory. No direct academic credit is awarded for field training.

Federal scholarships are available for AFROTC cadets--any academic major may apply. Applications are to be submitted by detachment personnel to Headquarters Reserve Officers Training Corps, Maxwell Air Force Base AL.

Participation in AFROTC is not required to take aerospace courses.

Lower Division (General Military)

Aerospace studies courses (AS-101 through AS-202) are basic courses designed to acquaint students with the United States Air Force and the opportunities available as an officer. Grades earned in these courses will be computed in the student=s overall grade point average, but credit hours for these courses will not be included in the total hours for graduation.

Course Descriptions

AS-101/102 The Air Force Today (2)
A survey course designed to introduce students to the United States Air Force and Air Force Reserve Officer Training Corps. Featured topics include: mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force officer opportunities, group leadership problems, and an introduction to communication skills. Leadership Laboratory is mandatory for AFROTC cadets, and it complements this course by providing students with followership experiences. Classroom activity, two hours per week; Leadership Laboratory two hours per week, each semester.

AS-201/202 The Air Force Way (2)
Survey course designed to facilitate the transition from Air Force ROTC cadet to Air Force ROTC candidate. Featured topics include: Air Force heritage, Air Force leaders, Quality Air Force, an introduction to ethics and values, introduction to leadership, group leadership problems, and continuing application of communication skills. Leadership Laboratory is mandatory for Air Force ROTC cadets, and it complements this course by providing cadets with their first opportunity for applied leadership experiences discussed in class. Classroom activity, two hours per week; Leadership Laboratory two hours per week, each semester.

Upper Division(Professional Officer) Courses

Aerospace Studies courses AS-301 through AS-402 are advanced courses designed to improve communication and management skills required of Air Force officers. Credit hours of these courses may be included in the hours needed for graduation at the discretion of individual departmental chairpersons.

AS-301/302 Air Force Leadership and Management (3)
The study of leadership and quality management fundamentals, professional knowledge, Air Force doctrine, leadership ethics, and communication skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied. A mandatory leadership laboratory complements this course by providing advanced leadership experiences in officer type activities, giving students the opportunity to apply leadership and management principles of this course. Classroom activity, three hours per week; Leadership Laboratory two hours per week, each semester.

AS-401/402 Preparation For Active Duty (3)
Examines the national security process, regional studies, advanced leadership ethics, Air Force doctrine. Special topics of interest focus on the military as a profession, officership, military justice, civilian control of the military, preparation for active duty, and current issues affecting military professionalism. Within this structure, continued emphasis is given to refining communication skills. An additional Leadership Laboratory complements this course by providing advanced leadership experiences, giving students the opportunity to apply leadership and management principles of this course. Classroom activity, three hours per week; Leadership Laboratory two hours per week, each semester.

Field Training
Field Training provides leadership and officership training in a military environment, which demands conformity to high physical and moral standards. Within this structured environment, cadets are screened for officer potential as measured against field training standards. Motivation and professional development is achieved through various programs such as flight orientation, marksmanship, and survival training. Students in the four-year program participate in four weeks of field training. Field training is offered during the summer months at selected bases throughout the United States, usually between a student=s sophomore and junior years. Major areas of study include: Air Force Orientation, Officer Training, aircrew/aircraft orientation, survival training, base functions and physical training.

Reciprocal Programs
Unless otherwise stated, students interested in one of the following programs should contact the admissions office at the school where the program is offered.

Nebraska
The University of Nebraska in Lincoln offers programs for a limited number of Missouri residents in architecture, community and regional planning, construction management, and actuarial science where students may pursue bachelor's degrees.

Illinois
A cooperative agreement exists between Southern Illinois University-Edwardsville and UM-St. Louis which permits students of one institution to take courses at the other institution as a regular part of their academic program. For further information consult the registrar's office or the dean's office.

Kansas
The following programs are offered to Missouri residents at various Kansas universities:

Humanities University of Kansas, Lawrence, with an M.A. in Oriental languages and literature, and a B.A. and M.A. in Slavic languages and literature (not Russian). A Ph.D. in Slavic languages and literature is also offered.

Grain milling and technology Kansas State University, Manhattan, with a B.S., M.S., or Ph.D. in bakery science and management, feed science and management, or milling science and management.

Horticulture Kansas State University, Manhattan, with a B.S. in horticulture therapy.

Joint Programs in Law and Dentistry
The University of Missouri-St. Louis and the University of Missouri-Kansas City provide joint programs in law and dentistry for academically able students who are committed to public service. These special programs are designed to serve students seeking a career in public-service law or students who wish to practice dentistry in medically underserved communities.

UM-Kansas City will hold a reserved seat in its School of Law or in the School of Dentistry for qualified UM-St. Louis entering freshmen and make it available to them after they complete the required undergraduate studies at UM-St. Louis.

Study Abroad Programs
The University of Missouri-St. Louis is committed to broadening students' understanding of different cultures and preparing them for the global community in which we live. One of the most successful ways of achieving this "global mindset" is to study at an overseas location for a year, semester or summer. Spending time abroad as a student is an enriching experience both academically and personally, providing students with the opportunity to study within a different culture.

The Center for International Studies provides UM-St. Louis students with opportunities to study at over 75 different universities in more than 30 countries around the globe. Through individual advising at the center's Study Abroad Office, students can find the program best suited to their personal, academic, and career goals. Internship possibilities are also available for qualified students.

Fees and Financial Aid
The cost of the program depends on the services provided and the country and city of study. For most programs, participants continue to pay UM-St. Louis fees plus airfare, room and board, and spending money. Few programs require an additional fee. Students are usually housed in dormitories or are assisted in finding apartments. In most cases, students are able to apply financial aid to a study abroad program. Study abroad scholarships are available for qualified applicants through the Center for International Studies.

Application
Generally, applications are due at the end of January for fall, mid-February for summer, and the end of September for winter semester. Some programs require application two semesters prior to participation. Students should plan to spend at least one or two months researching a program before applying.

Participant selection is based on academic achievement, faculty recommendations, approval of the proposed course of study via the department/divisional advisory process, and familiarity with or willingness to learn the foreign language of instruction. Most programs are designed for undergraduate students in their junior or senior years of study; however, a limited number of programs for freshmen, sophomores, and graduate students are available.

For further information contact the Study Abroad Office, Center for International Studies, 304 SSB, 516-6497

Study Abroad Programs and Exchange Partners

Austria
Karl-Franzens-University Graz

Belgium
University of Antwerp

Canada
Carleton University
Dalhousie University
Ecole Polytechnique
McGill University
McMaster University
Saint Mary's University
Technical University of Nova Scotia
Université de Montreal
Université de Sherbrooke
Université du Quebec à Montréal
Université Laval
University of Calgary
University of Manitoba
University of New Brunswick
University of Ottawa
University of Waterloo
University of Western Ontario
York University

China
Nanjing University

Czech Republic
Masaryk University

Denmark
Aarhus University

England
University of East Anglia
University of Lancaster
Missouri London Program
Business Internship in London Program
Journalism Internship in London Program

Finland
University of Helsinki
University of Oulu
Seindjoki Polytechnic

France
Université Jean Moulin, Lyon(3)
Ecole Superieure de Commerce de Saint Etienne
University of Sciences and Technologies de Lille
Université Louis Pasteur, Strasbourg (1)
Université of Marc Bloch, Strasbourg (2)
Université Robert Schuman, Strasbourg (3)
Université Catholique de l'Ouest, Angers
Ecole Superieure des Sciences Commerciales d'Angers

Germany
University of Stuttgart
Ruhr University Bochum
University of Leipzig
Fachhochschule Jena
Hochschule Bremen
University of Bonn

Ghana
University of Ghana

Greece
Aristotle University of Thessaloniki

Hungary
Kossuth Lajos University

Iceland
University of Iceland

Ireland
National University of Ireland, Cork
National University of Ireland, Galway

Italy
University of Bologna
University of Parma

Japan
Obirin University
Semester in Nakajo Program
Toyo University

Lithuania
Vilnius University

Malta
University of Malta

Mexico
Centro de Enseñanza Técnica y Superior
Centro de Investigacíon y Docencia Económicas (CIDE)
El Colegio de Jalisco
Universidad de Guadalajara
ITESM-Guaymas Campus
Universidad Autonoma de Baja California
Universidad Nacional Autonoma de Mexico
Unviersidad of San Luis Potosi
Instituto del Estudios Superiores de Tamaulipas
Instituto Tecnologico Autonomo de Mexico (ITAM)
Instituto Tec. y de Est. Sup. de Monterrey (ITESM)
Universidad Autónoma de Guadalajara
Universidad Autonoma de Queretaro
Universidad de las Americas Puebla
Universidad Iberoamericana
Universidad La Salle
University of Guanajuato
Universidad Autonoma de Nuevo Leon

The Netherlands
Hogeschool Holland Business School
Hogeschool voor de Kunsten
University of Utrecht

Northern Ireland
University of Ulster, Magee College

Norway
University of Bergen

Portugal
University of Coimbra

Scotland
Heriot-Watt University

Slovenia
University of Ljubljana

South Africa
University of the Western Cape

Spain
Universidad Autónoma de Madrid
Universidad Complutense de Madrid
Universidad Santiago de Compostela

Sweden
Lund University

Switzerland
University of Basel

Taiwan
Yuan-Ze University
National Taiwan Normal University

International Studies Certificates Undergraduate

The Center for International Studies offers, in cooperation with the College of Arts and Sciences, certificate programs in Africana, East Asian, European, Latin American, and International Studies, and in cooperation with the College and the College of Business Administration, the International Business certificate. Students seeking certificates (except African Diaspora or International Business) must take an independent study course (three hours) in which a research paper will be written focusing upon some aspect of the particular field or on one of the fields offered in the program.

Requirements for Each Program

Africana Studies Certificate
Students seeking the Africana Studies Certificate have two options: an emphasis in African Studies and an emphasis in African Diaspora Studies.

I. African Studies:
1) At least **one** course in **two** of the following four areas for a total of nine hours:

Area 1: Anthropology
124, Cultures of Africa

Area 2: Art and Art History
117, African Art

Area 3: History
81, African Civilization to 1800
82, African Civilization Since 1800

Area 4: Political Science
258, African Politics

2) **One** course in **two** of the following areas, a total of six hours:

Area 1: Anthropology
234, Cultural Continuity and Change in Sub-Saharan Africa
235, Women in Sub-Saharan Africa

Area 2: Art and Art History
***215**, Topics in Tribal Arts

* **Note**: Students should take Art History 215 only when the topic is appropriate to Africa.

Area 3: History
380, West Africa to 1800
381, West Africa Since 1800
382, History of Southern Africa

Area 4: Sociology
245, Sociology of South Africa

3) An independent study course (three hours) in which a research paper will be written on some aspect of African Studies

II. African Diaspora Studies

1) **Interdisciplinary 40**: The Black World (3)

2) **One** course from **each** of the following areas, a total of six hours.

Area 1: Africa
Anthro 124: Cultures of Africa

History 81: African Civilization to 1800
History 82: African Civilization Since 1800

Area 2: Diaspora
Anthro 05: Human Origins
History 06, African-American History
History 83: The African Diaspora to 1800
History 84: The African Diaspora Since 1800
History 212: African-American History: From Civil Rights to Black Power

3. At least **one** course from **each** of the following areas, a total of six hours:

Area 1: Africa
Anthro 234: Cultural Continuity and Change in Sub-Saharan Africa
Anthro 235: Women in Sub-Saharan Africa
Art History 117: African Art
History 380: West Africa to 1800
History 381: West Africa Since 1800
History 382: History of Southern Africa
PolSci 258: African Politics
Sociology 245: Sociology of South Africa

Area 2: Diaspora
Comm 332: Intercultural Communication
English 70: African-American Literature
History 319, Topics in African-American History
History 385: African Diaspora to 1800
History 386: African Diaspora Since 1800
Music 6: Introduction to African-American Music
PolSci 232: African Americans and the Political System
***Psych 392**: Selected Topics in Psychology: African-American Psychology
Sociology 360: Sociology of Minority Groups

- **Note**: Students should take Psychology 392 only when the African American Psychology topic is offered.

East Asian Studies Certificate

1) First- and second-year Chinese, Japanese, Korean, or other appropriate Asian language (20 hours taken in four semesters).

2) **History 61 and History 62**, East Asian Civilization

3) **One** course in three of the following six areas, a total of nine hours:

Area 1: Anthropology
110, Cultures of Asia

Area 2: Art and Art History
107, The Arts of China
108, The Arts of Japan
208, Topics in Asian Art

Area 3: History
361, Modern Japan: 1850 to Present
362, Modern China: 1800 to Present
***393**, Senior Seminar

***Note** Students should take History 393 only when the topic is appropriate to East Asia.

Area 4 Music
9, Non-Western Music I
10, Non-Western Music II

Area 5: Philosophy
120, Asian Philosophy

Area 6: Political Science
155, East Asian Politics
***359**, Studies in Comparative Politics
***388**, Studies in International Relations

***Note** Students should take PolSci 359 or PolSci 388 only when the specific topic is appropriate.

European Studies Certificate

1) Four semesters of college work or the equivalent in a modern European foreign language.

2) **History 32**, Topics in European Civilization: 1715 to the Present.

3) **One** course **each** from at least **four** of the following eight areas, a total of 12 hours. Students should consult advisers at the Center to determine how these courses can best be arranged to meet their interests.

Area 1: Art and Art History
135, Renaissance Art
145, Baroque Art
235, Topics in Renaissance Art
245, Topics in Seventeenth- and Eighteenth-Century European Art
255, Topics in Nineteenth- and Twentieth-Century European Art

Area 2: Economics
238, Comparative Economic Systems

Area 3: English
127, Survey of European Literature from 1650 to the Second World War
128, The Contemporary World in Literature
132, English Literature II
323, Continental Fiction
346, Restoration and Eighteenth-Century Drama
364, The Eighteenth-Century English Novel
365, The Nineteenth-Century English Novel
372, Literature of the Late Nineteenth and Early Twentieth Centuries
383, Modern British Fiction

Area 4: History
31, Topics in European Civilization: Emergence of Western Europe to 1715
341, The Age of the Renaissance
342, The Age of Reformation
345, Europe 1763 - 1871, Revolution, Reaction and Reform
347, Europe in the Belle Epoque (1870-1914)
348, Europe 1900 - 1950: War and Upheaval
349, Europe, 1950 - Present: Peace and Prosperity
351, Contemporary France: Since 1870
352, Germany in the Modern Age
354 History of Russia From 1917-Present

Area 5: Foreign Languages and Literatures
FRENCH
110, Modern French Literature in Translation
150, European Literature in Translation: Special Topics
211, Contemporary French Culture
281, French Literature II: Nineteenth and Twentieth Centuries
341, Seventeenth-Century French Theatre and Poetry
342, Seventeenth-Century French Prose
353, Eighteenth-Century French Literature
354, Eighteenth-Century French Theatre and Novel
362, Nineteenth-Century French Novel
371, Twentieth-Century French Novel
375, Modern French Theatre

GERMAN
110, Masterpieces of German Literature in Translation
150, European Literature in Translation: Special Topics

201, Masterpieces of German Literature
202, The German Novelle and Drama
210, German Culture and Civilization
315, German Classicism and Romanticism
320, German Realism and Naturalism
345, Modern German Literature
397, Survey of German Literature Part I
398, Survey of German Literature Part II

SPANISH
110, Spanish Literature in Translation
150, European Literature in Translation: Special Topics
310, Spanish Literature from 1898 to 1939
315, Spanish Literature from 1939 to the Present
320, Realism and Naturalism in the Nineteenth-Century Spanish Novel
321, Poetry and Drama of the Nineteenth Century
325, Poetry and Drama of the Golden Age

Area 6: Music
322, Music of the Renaissance
323, Music of the Baroque
324, Music of the Classic Period
325, Music of the Romantic Period

Area 7: Philosophy
103, Early Modern Philosophy
104, Kant and Nineteenth-Century Philosophy
105, Twentieth-Century Philosophy
205, The Rationalists
206, The British Empiricists

Area 8: Political Science
251, Comparative Politics of Europe
256, Russia and the New Republics
284, European International Relations
***351**, Comparative Public Policy and Administration
***359**, Studies in Comparative Politics
***388**, Studies in International Relations
***Note** Students should take PolSci 351, 359, **or** 388 only when the topic is appropriately European.

Latin American Studies Certificate
1) Thirteen credit hours or the equivalent in Spanish.

2) **Either History 71**, Latin American Civilization, **or Spanish 211**, Hispanic Culture and Civilization: Spanish America.
3) A total of 12 hours from at least **three** of the following areas:
Area 1: Anthropology
134, The Inca, Aztec, and Maya
140, Cultures of Mexico and Central America
145, Indians of South America

Area 2: Art and Art History
119, Pre-Columbian Art of Mexico and Central America

Area 3: History
371, History of Latin America: To 1808
372, History of Latin America: Since 1808

Area 4: Political Science
253, Political Systems of South America
254, Political Systems of Mexico, Central America, and the Caribbean
***359**, Studies in Comparative Politics

***Note** Students should take PolSci 359 only when the topic is appropriate to Latin America.

Area 5: Spanish
111, Spanish-American Literature in Translation
211, Hispanic Culture and Civilization: Spanish America
281, Introduction to Hispanic Literature: Spanish America
340, Spanish-American Literature of the Nineteenth Century
341, Modernismo
345, Spanish-American Literature of the Twentieth Century
351, Spanish-American Fiction in the Twentieth Century
360, Spanish-American Poetry from Modernismo to the Present

International Studies Certificate

1) Satisfactory completion of the language requirements for the degree program in which the student is enrolled.

2) **PolSci 180**, World Politics.

3) A total of 12 hours from at least **three** of the following nine areas:

Area 1: Anthropology
201, Comparative Economic Behavior
202, Culture, Politics, and Social Organization

Area 2: Biology
120, Environmental Biology

Area 3: Business Administration
316, International Marketing
317, International Management
380, International Business

Area 4: Communication
332, Intercultural Communication
354, Comparative Telecommunication Systems
356, International Communication

Area 5: Economics
230, International Economic Analysis
231, International Finance
238, Comparative Economic Systems
331, International Economic Analysis: Finance

Area 6: Geography
102, World Regions

Area 7: History
345, Europe 1763 - 1871, Revolution, Reaction and Reform
347, Europe in the Belle Epoque (1870-1914)
348, Europe 1900 - 1950: War and Upheaval
349, Europe, 1950 - Present: Peace and Prosperity

Area 8: Political Science
80, Global Issues
282, United States Foreign Policy
285, International Organizations and Global Problem Solving
289, Middle Eastern Politics
385, International Law
386, Studies in War and Peace
388, Studies in International Relations

Area 9: Sociology
314, Social Change
342, World Population and Ecology
354, Sociology of Business and Work Settings

International Business Certificate
1) Students must complete a minimum of 12 hours in the Business Internship Program in London or in some other approved overseas study program.

2) **One** course from **Area 1 and one** from **Area 2**, a total of six hours.

Area 1: Business Administration:
316, International Marketing
317, International Management
380, International Finance

Area 2: International Studies:
Anthro 238: Culture and Business in East Asia
Econ 230: International Economic Analysis
Econ 231: International Finance
Econ 238: Comparative Economic Systems
Econ 240: Economic Development
PolSci 283: International Political Economy
PolSci 388: Studies in International Relations. (International Relations of East Asia)
Sociology 241: Selected Topics in Macro-sociology.(Work and Industry in Japan)
Sociology 354: Sociology of Business and Work Settings

In lieu of a course from Area 2, students may substitute one course (3 hours) at the advanced level of a foreign language. Advanced level is defined as a course beyond the 13 hour introductory language sequence.

3) An independent study course is not required for this certificate option.

Note: Students participating in other approved overseas study programs such as Hogeschool Holland Business School, Ecole Superieure de Commerce de Saint Etienne, or Université Jean Moulin, may also qualify to apply 12 credit hours toward the International Business Certificate.

Graduate Certificate in International Studies
A Graduate Certificate in International Studies is a program of study featuring advanced, multidisciplinary course work designed for individuals, including teachers and other professionals, who wish to expand their knowledge and understanding of international and cross-cultural affairs. The Certificate is sponsored by the Center for International Studies, and the Departments of Economics, History, Foreign Languages and Literatures, and Political Science. A broad set of course offerings is available in these and other departments, with the flexibility for students to tailor the program to their particular interests and needs. The program has been developed as a vehicle for bringing together the resources of a distinguished faculty in international studies and for providing an opportunity for further graduate learning.

Applicants to the Certificate program must meet the general requirements for admission to Graduate School as explained in the graduate study section of this Bulletin. The Certificate is awarded after completion of 18 hours, including a minimum of 12 hours drawn from a list of core courses and an additional six hours selected from a wide variety of offerings in eight different disciplines. No more than 12 hours may be from any one discipline. Students may simultaneously earn a graduate degree and count credits earned in their degree program toward the Certificate when appropriate.

Requirements
Students must complete at least 12 hours chosen from the following list of core courses:
Anthropology
425, Peoples and Cultures of Southeast Asia
430, Global Refugee Crisis
Business Administration
416, International Finance, Investment, and Commercial Relations
417, International Business Operations
443, International Accounting
Economics
430, International Trade
431, International Monetary Analysis
History
410, Readings in European History to 1715
415, Readings in European History Since 1715
420, Readings in East Asian History
425, Readings in Latin American History
430, Readings in African History
Political Science
450, Proseminar in Comparative Politics

451, Seminar in Comparative Politics
480, Proseminar in International Relations
481, Seminar in International Relations
488, Studies in International Relations
Sociology
410, Comparative Social Structures

Students may complete an additional six hours chosen from the following:
Business Administration
316, International Marketing
317, International Management
* **380**, International Finance

* Note: Students may not count both Bus. Admin. 416 and 380.
Communication
332, Intercultural Communication
354, Comparative Telecommunication Systems
356, International Communication
Criminology and Criminal Justice
305, Comparative Criminology and Criminal Justice
Economics
331, International Economic Analysis: Finance
395, Special Readings
English
323, Continental Fiction
History
314, American Foreign and Military Affairs, 1900-Present
320, History of Feminism in Western Society
345, Europe 1763 - 1871 Revolution, Reaction and Reform
347, Europe in the Belle Epoque (1870 - 1914)
348, Europe 1900-1950: War and Upheaval
349, Europe, 1950-Present: Peace and Prosperity
351, Contemporary France: Since 1870
352, Germany in the Modern Age
353, Russian History to 1917
354, History of Russia from 1917-Present
355, History of Spain
361, Modern Japan: 1850 to Present
362, Modern China: 1800 to Present
372, History of Latin America: Since 1808
381, West Africa: Since 1800
382, History of Southern Africa
390, Special Readings
Foreign Languages and Literatures
French 362, Nineteenth-Century French Novel
French 365, Modern French Poetry
French 371, Twentieth-Century French Novel
French 375, Modern French Theatre
German 315, German Classicism and Romanticism
German 320, German Realism and Naturalism
German 345, Modern German Literature
German 398, Survey of German Literature Part II
Spanish 310, Spanish Literature from 1898 to 1939
Spanish 315, Spanish Literature from 1939 to Present
Spanish 320, Realism and Naturalism in the Nineteenth-Century Spanish Novel
Spanish 321, Poetry and Drama of the Nineteenth Century
Spanish 340, Spanish-American Literature of the Nineteenth Century
Spanish 341, Modernismo
Spanish 345, Spanish-American Literature of the Twentieth Century
Spanish 351, Spanish-American Fiction in the Twentieth Century
Spanish 360, Spanish-American Poetry from Mocernismo to the Present
Music
325, Music of the Romantic Period
326, Music of the Twentieth Century
Political Science
351, Comparative Public Policy and Administration
359, Studies in Comparative Politics
385, International Law
386, Studies in War and Peace
388, Studies in International Relations
485, Directed Readings and Research in International Relations
Sociology
342, World Population and Ecology

The video instructional program offers an alternative for the student who is far from campus, whose physical disability, work schedule, or other responsibilities make it difficult for him/her to attend traditional classes. Video lessons for various courses are available for viewing on cable television stations as well as in UM-St. Louis libraries.

St. Louis Area Cable Stations
Continental Cable, and United Video in St. Louis County; AT&T Cable in the city will air courses over the Higher Education Channel (HEC). (Charter, Continental, United Video & AT&T Cable).

Course Listings
The following courses from the UM-St. Louis curriculum are offered:

Anthropology

019 Archaeology
This telecourse uses dramatic onsite filming to enable students to explore how archaeologists reconstruct ancient societies and explain how they evolved. Students will understand how archaeology and anthropology interact, with emphasis on how people have behaved in the past. Acc@

025 World Cultures
This telecourse is an ethnographic survey of the major culture areas of the world. It is an introductory cultural anthropology course that studies the structure and process of culture. This course satisfies the Cultural Diversity requirement.

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

350 Special Studies
This telecourse offers a glimpse into the science of anthropology through a variety of approaches, theories, controversies, and solutions encountered in the field. Students will gain insight into the practices of foreign cultures and the beliefs of their own culture in addition to the importance of diversity of human behavior.

Biology

001 General Biology (For Non-Science Majors)
This telecourse provides a firm foundation in the fundamental principles of biology. "cc"

120 Environmental Biology (3)
This telecourse provides a survey of the current outlook for the global environment, describing threats that different natural systems face and the ties that bind human society to the environment. It also provides an examination of the biological basis of current environmental problems, with emphasis upon resources, energy, pollution and conservation. "cc"

Communication

070 Introduction to Cinema
This telecourse examines the history, rhetoric, and aesthetics of film. The content is designed to bring Hollywood filmmaking into clear focus as an art form, as an economic force, and as a system of representation and communication. Film theory and criticism will be studied, as well as major genres, authors, and artists. Introduction to Cinema explores how Hollywood films work technically, artistically, and culturally. The course also probes the deeper meaning of American movies--the hidden messages of genres, the social and psychological effects of Hollywood film style, and the mutual influence of society and popular culture on filmmaking. "cc"

232 Effective Communication in the Organization: Tool for Leadership (3)
Prerequisites: Junior standing or consent of instructor. Telecourse designed to equip students with communication skills applicable to the organizational context. The course will present effective strategies for the articulation of ideas, with particular emphasis on the development of leadership skills.

Education

308 Foundations of Adult Basic Education (3)
This telecourse discusses the various characteristics of the adult learner, including needs, interests, physiological factors, interpersonal relations, and communications. The video demonstrations present teaching practices in adult basic education. This course focuses on the need of corporate and industry trainers as well as ABE and GED teachers.

You will work with topics in teaching basic reading: word recognition, comprehension, writing for the student=s needs, basic and intermediate mathematical skills, selection and use of materials, learning contracts, learning styles, and other methods to individualize instruction, as well as student recruitment and retention and corporate classroom management. This is an important class offered at a time when there are more adult students than teachers.

History

031 Topics in European Civilization: Emergence of Western Europe to 1715
This telecourse offers lectures and discussions on the development of Western European society and tradition from approximately 800 to 1715. "cc"

032 Topics in European Civilization:1715 to the Present
This telecourse offers lectures and discussions on the development of Western European society and tradition from 1715 to the present. "cc"

History 31 or History 32 may be taken separately.

150 The People's Century, Part I
This telecourse provides unique insight into the turbulent events of the last 100 years by combining rare archival film footage with the testimony of ordinary people who lived through the century=s sweeping changes and who recount their firsthand experiences. "cc"

350 The People's Century, Part I, Special Studies
This telecourse provides unique insight into the turbulent events of the last 100 years by combining rare archival film footage with the testimony of ordinary people who lived through the century's sweeping changes and who recount their experiences first hand as well as special readings, reports and/or research. "cc"

Psychology

003 General Psychology
This telecourse is an introductory college level course that covers the fundamental principles and major concepts of psychology. The content is designed to provide a broad introductory survey of the general principles of human behavior. "cc"

245 Abnormal Psychology
Prerequisite: Psych 03, General Psychology. This telecourse introduces the major theoretical models for explaining and treating disorders - psychodynamic, behavioral, cognitive and biological. Ten of the 13 programs feature specific disorders, including anxiety disorders, personality disorders, the schizophrenias, sexual disorders, substance abuse, and the disorders of childhood. The first program concerns assessment, while the last two provide information on treatment and prevention. This approach serves the introductory abnormal psychology student, while allowing individual faculty latitude to underscore the approach to which they subscribe. "cc"

268 Human Growth and Behavior
Prerequisites: Psych 3. This telecourse uses special readings, reports, and/or field research as well as video and audio courses to explore the stages of life as an introduction to developmental psychology.

280 The Psychology of Death and Dying
(Same as Gerontology 280.) Prerequisite: Psych 3. This telecourse will address the psychological aspects of death and dying for both adults and children. The psychological reactions of terminally ill patients and their families will also be examined, and therapeutic interventions will be discussed.

Social Work

280 Human Behavior in the Social Environment (3)
Prerequisite: Biology 1 and Sociology 160 or Psyc 1 160 or permission of instructor. This telecourse will focus on the normative stages in the life span, specifically how human development is affected by the physical environment and social status characteristics. Empirical information and theoretical views on human development will be included. Human development will be viewed as a complex interaction of individual developmental stages with family, social

312 Women's Social Issues
Prerequisites: Social Work 280 or consent of the instructor. This telecourse is designed to help students identify gender stereotypes and barriers and how they impact on women's lives. This course will help students become more sensitive to the social and welfare concerns of women. The course also explores how gender intersects with other social systems, such as age, class, disability, ethnicity, race, religion, and sexual orientation. Emphasis will be placed on integrating a knowledge base of women's needs with professional social work practice.

Sociology

010 Introduction to Sociology
This telecourse is an introductory college level course designed to give students an in-depth look at sociological approaches to human behavior, including types of social organizations, patterns of social interaction, and social influences on individual conduct.

CBHE Articulation Agreement

The Coordinating Board of Higher Education Articulation 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.

1) Communication skills in the English language, three courses--at least two of which must be written; one oral communication course is recommended.

2) Humanities, three courses from at least two disciplines.

3) Physical and/or biological sciences, two courses including at least one with its associated laboratory component.

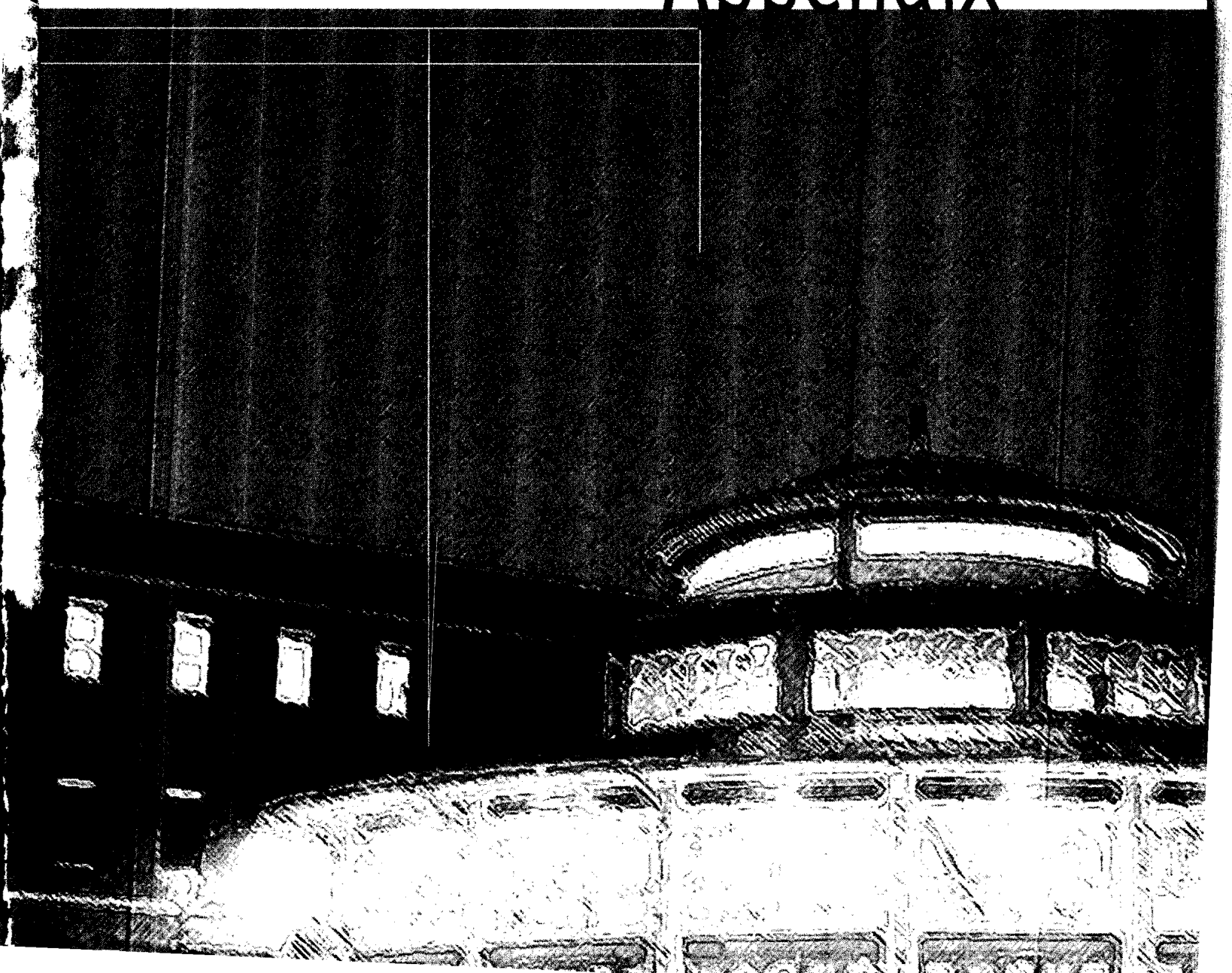
4) Mathematics, one course--college algebra, an alternative course that includes a significant component of college algebra, or a course which has college algebra as a prerequisite.

5) Social and behavioral sciences, three courses from at least two disciplines.

All institutions shall recognize the validity of other institutions' general education requirements when the minimum requirements as specified above are met. However, some foreign language and/or upper- division general education courses or upper-division graduation requirements may be required by the receiving institution whenever all native students are obligated to satisfy the same requirements.

Baccalaureate professional schools or programs may specify exceptions to the credit-hour and course- distribution minimums established in this section by promulgating these exceptions and by establishing specialized articulation programs related to associate of science degrees as detailed in that section of these transfer guidelines. In these instances, transferring students are not exempted from satisfying the specialized lower-division requirements of departments or divisions of an institution into which a student wishes to transfer.

Appendix



Code of Student Conduct

200.010 Standard of Conduct Amended March 20, 1981; August 3, 1990; May 19, 1994

A student enrolling in the university assumes an obligation to behave in a manner compatible with the university's function as an educational institution.

A. JURISDICTION OF THE UNIVERSITY OF MISSOURI generally shall be limited to conduct which occurs on the University of Missouri premises or at university-sponsored or university-supervised functions. However, nothing restrains the administration of the University of Missouri from taking appropriate action, including, but not limited to, the imposition of sanctions under Section 200.020(C), against students for conduct on or off university premises in order to protect the physical safety of students, faculty, staff and visitors.

B. CONDUCT for which students are subject to sanctions falls into the following categories:

1. Academic dishonesty, such as cheating, plagiarism or sabotage. The Board of Curators recognizes that academic honesty is essential for the intellectual life of the university. Faculty members have a special obligation to expect high standards of academic honesty in all student work. Students have a special obligation to adhere to such standards. In all cases of academic dishonesty, the instructor shall make an academic judgment about the student=s grade on that work and in that course. The instructor shall report the alleged academic dishonesty to the Primary Administrative Officer.
a. The term **cheating** includes but is not limited to(I) use of any unauthorized assistance in taking quizzes, tests, or examinations; (ii) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; (iii) acquisition or possession without permission of tests, or other academic material belonging to a member of the university faculty or staff; or (iv) knowingly providing any unauthorized assistance to another student on quizzes, tests, or examinations.
b. The term **plagiarism** includes, but is not limited to: (I) use by paraphrase or direct quotation of the published or unpublished work of another person without fully and properly crediting the author with footnotes, citations or bibliographical reference; (ii) unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials; or (iii) unacknowledged use of original work/material that has been produced through collaboration with others without release in writing from collaborators.
c. The term **sabotage** includes, but is not limited to, the unauthorized interference with, modification of, or destruction of the work or intellectual property of another member of the university community.

2. Forgery, alteration, or misuse of university documents, records or identification, or knowingly furnishing false information to the university.

3. Obstruction or disruption of teaching, research, administration, conduct proceedings, or other university activities, including its public service functions on or off campus.

4. Physical abuse or other conduct which threatens or endangers the health or safety of any person.

5. Attempted or actual theft of, damage to, or possession without permission of property of the university or of a member of the university community or of a campus visitor.

6. Unauthorized possession, duplication or use of keys to any university facilities or unauthorized entry to or use of university facilities.

7. Violation of university policies, rules or regulations or of campus regulations including, but not limited to, those governing residence in university-provided housing, or the use of university facilities, or the time, place and manner of public expression.

8. Manufacture, use, possession, sale or distribution of alcoholic beverages or any controlled substance without proper prescription or required license or as expressly permitted by law or university regulations.

9. Disruptive or disorderly conduct or lewd, indecent, or obscene conduct or expression.

10. Failure to comply with directions of university officials acting in the performance of their duties.

11. Illegal or unauthorized possession of firearms, explosives, other weapons, or dangerous chemicals.

12. Actual or attempted theft or other abuse of computer time, including but not limited to:
a. Unauthorized entry into a file to use, read, or change the contents, or for any other purpose.
b. Unauthorized transfer of a file.
c. Unauthorized use of another individual=s identification and password.
d. Use of computing facilities to interfere with the work of another student, faculty member or university official.
e. Use of computing facilities to interfere with normal operation of the university computing system.
f. Knowingly causing a computer virus to become installed in a computer system or file.

Student Disciplinary Matters

Rules of Procedures in Student Disciplinary Matters Adopted November 8, 1968, Amended March 20, 1981; December 8, 1989; and May 18, 1994

200.020 RULES OF PROCEDURES IN STUDENT CONDUCT MATTERS

A. PREAMBLE. The following rules of procedure in student conduct matters are hereby adopted in order to insure insofar as possible and practicable (a) that the requirements of procedural due process in student conduct proceedings will be fulfilled by the university, (b) that the immediate effectiveness of Article V of the Bylaws of the Board of Curators relating to student conduct and sanctions may be secured for all students in the University of Missouri, and 8 that procedures shall be definite and determinable within the University of Missouri.

B. DEFINITIONS. As used in these rules, the following definitions shall apply:

1. Primary Administrative Officers. As used in these procedures, APrimary Administrative Officer@ is charged with the responsibility for the administration of these student conduct procedures and refers to the person or persons on each campus designated.

2. Student Panel. A panel of students appointed by the Chancellor, from which shall be selected by the Chair, upon the request of a student charged before the Student Conduct Committee, not more than three (3) students to serve with the Student Conduct Committee.

3. Student. A person having once been admitted to the university who has not completed a course of study and who intends to or does continue a course of study in or through one of the campuses of the university. For the purpose of these rules, student status continues whether or not the university=s academic programs are in session.

4. Student Conduct Committee. As used in these procedures, AStudent Conduct Committee,@ hereinafter referred to as the Committee, is that body on each campus which is authorized to conduct hearings and to make dispositions under these procedures or a Hearing Panel of such body as herein defined.

C. SANCTIONS.

1. The following sanctions may be imposed upon any student found to have violated the Student Conduct Code; more than one (1) of the sanctions may be imposed for any single violation:
a. Warning. A notice in writing to the student that the student is violating or has violated institutional regulations
b Probation. A written reprimand for violation of specified regulations. Probation is for a designated period of time and includes the probability of more severe sanctions if the student is found to be violating any institutional regulation(s) during the probationary period.
c. Loss of Privileges. Denial of specified privileges for a designated period of time.
d. Restitution. Compensation for loss, damage or injury to the university or university property. This may take the form of appropriate service and/or monetary or material replacement.
e. Discretionary Sanctions. Work assignments, service to the university or other related discretionary assignments.
f. Residence Hall Suspension. Separation of the student from the residence halls for a definite period of time, after which the student is eligible to return. Conditions for readmission may be specified.
g. Residence Hall Expulsion. Permanent separation of the student from the residence halls.
h. University Dismissal. An involuntary separation of the student from the institution for misconduct apart from academic requirements. It does not imply or state a minimum separation time.
I. University Suspension. Separation of the student from the university for a definite period of time, after which the student is eligible to return. Conditions for readmission may be specified.
j. University Expulsion. Permanent separation of the student from the university.

2. Temporary Suspension. The Chancellor or designee may at any time temporarily suspend or deny readmission to a student from the university pending formal procedures when the Chancellor or designee finds and believes from available information that the presence of a student on campus would seriously disrupt the university or constitute a danger to the health, safety or welfare of members of the university community. The appropriate procedure to determine the future status of the student will be initiated within seven (7) calendar days.

D. RECORDS RETENTION. Student conduct records shall be maintained for five (5) years after university action is completed.

E. POLICY AND PROCEDURES.

1. Primary Administrative Officers. The Chief Student Affairs Administrator on each campus or designee is the primary officer except in cases of academic dishonesty, where the Chief Academic Administrator responsible for administering the Student Conduct Code or designee is the primary administrative officer.

2. Preliminary Procedures. The Primary Administrative Officer shall investigate any reported student misconduct before initiating formal conduct procedures and give the student the opportunity to present a personal version of the incident or occurrence. The Primary Administrative Officer may discuss with any student such alleged misconduct and the student shall attend such consultation as requested by the Primary Administrative Officer. The Primary Administrative Officer, in making an investigation and

disposition, may utilize student courts and boards and/or divisional deans to make recommendations.

3. Informal Dispositions. The Primary Administrative Officer shall have the authority to impose appropriate sanctions and shall fix a reasonable time within which the student shall accept or reject a proposed informal disposition. A failure of the student either to accept or reject within the time fixed shall be deemed to be an acceptance and, in such event, the proposed disposition shall become final upon expiration of such time. If the student rejects informal disposition it must be in writing and shall be forwarded to the Committee. The Primary Administrative Officer may refer cases to the Committee without first offering informal disposition.

4. Formal Procedure and Disposition.
a. Student Conduct Committee:
1) The Committee shall be appointed by the Chancellor and shall have the authority to impose appropriate sanctions upon any student or students appearing before it.
2) The Committee, when appropriate or convenient, may be divided by the Chair of the Committee into Hearing Panels, each panel to be composed of at least five (5) Committee members, which may include a maximum of two (2) students, present at the hearing, including a designated chair. A Hearing Panel has the authority of the whole Committee in those cases assigned to it. The Chair of the Committee or of a Hearing Panel shall count as one (1) member of the Committee or Hearing Panel and have the same rights as other members.
3) Each Chancellor shall appoint a panel of students, to be known as the Student Panel. Upon written request of a student charged before the Committee, made at least seventy-two (72) hours prior to the hearing, the Chair of the Committee or Hearing Panel shall appoint from the Student Panel not more than three (3) students to sit with the Committee or two (2) students to sit with the Hearing Panel (as stated in 4.a.(2)) for that particular case. When students from the Student Panel serve at the request of a student charged, they shall have the same rights as other members of the Committee or Hearing Panel.
b. General Statement of Procedures. A student charged with a breach of the Student Conduct Code is entitled to a written notice and a formal hearing unless the matter is disposed of under the rules for informal disposition. Student conduct proceedings are not to be construed as judicial trials and need not wait for legal action before proceeding; but care shall be taken to comply as fully as possible with the spirit and intent of the procedural safeguards set forth herein. The Office of the General Counsel shall be legal adviser to the Committee and the Primary Administrative Officer.

c. Notice. The Primary Administrative Officer shall initiate student conduct proceedings by arranging with the Chair to call a meeting of the Committee and by giving written notice by certified mail or personal delivery to the student charged with misconduct. The notice shall set forth the date, time and place of the alleged violation and the date, time and place of the hearing before the Committee. Notice by certified mail may be addressed to the last address currently on record with the university. Failure by the student to have a current correct local address on record with the university shall not be construed to invalidate such notice. The notice shall be given at least seven (7) consecutive days prior to the hearing, unless a shorter time be fixed by the Chair for good cause. Any request for continuance shall be made in writing to the Chair, who shall have the authority to continue the hearing if the request is timely and made for good cause. The Chair shall notify the Primary Administrative Officer and the student of the new date for the hearing. If the student fails to appear at the scheduled time, the Committee may hear and determine the matter.

5. Right to Petition for Review (other than university expulsion, university dismissal or university suspension).
a. In all cases where the sanction imposed by the Committee is other than university expulsion, university dismissal, or university suspension, the Primary Administrative Officer or the Student may petition the Chancellor or designee in writing for a review of the decision within five (5) calendar days after written notification. A copy of the Petition for Review must also be served upon the nonappealing party within such time. The Petition for Review shall state the grounds or reasons for review, and the nonappealing party may answer the petition within five (5) calendar days.
b. The Chancellor or designee may grant or refuse the right of review. In all cases where the Petition for Review is refused, the action of the Committee shall be final. If the Chancellor or designee reviews the decision, the action of the Chancellor shall be final unless it is to remand the matter for further proceedings6. Right of Appeal (university expulsion, university dismissal or university suspension only).
a. When a student is expelled, dismissed or suspended from the university by the Committee, the Primary Administrative Officer or the student may appeal such decision to the Chancellor or designee by filing written notice of appeal with the Chancellor within ten (10) calendar days after notification of the decision of the Committee. A copy of the Notice of Appeal will contemporaneously be given by the student to the Primary Administrative Officer or by the Primary Administrative Officer to the student. The appealing party may file a written memorandum for consideration by the Chancellor with the Notice of Appeal, and the Chancellor may request a reply to such memorandum by the appropriate party.
b. The Chancellor or designee shall review the record of the case and the appeal documents and may affirm, reverse or remand the case for further proceedings and shall notify each party in writing of the decision on the appeal. The action of the Chancellor shall be final unless it is to remand the matter for further proceedings.

7. Status During Appeal. In cases of suspension, dismissal or expulsion where a Notice of Appeal is filed within the required time, a student may petition the Chancellor in writing for permission to attend classes pending final determination of appeal. The Chancellor may permit a

student to continue in school under such conditions as may be designated pending completion of appellate procedures, provided such continuance will not seriously disrupt the university or constitute a danger to the health, safety or welfare of members of the university community. In such event, however, any final sanctions imposed shall be effective from the date of the action of the Committee.

8. Student Honor System. Forums under the student honor systems established for investigating facts, holding hearings, and recommending and imposing sanctions are authorized when the student honor code or other regulations containing well defined jurisdictional statements and satisfying the requirements of Article V of the Bylaws of the Board of Curators have been reduced to writing and have been approved by the Chancellor and the Board of Curators and notice thereof in writing has been furnished to students subject thereto. Procedures shall satisfy the requirements of the Board of Curators> Bylaws, Article V, and shall contain procedures herein before stated insofar as appropriate and adaptable to the particular situation and shall be approved by the Chancellor and the General Counsel. Students subject to student honor systems shall have the rights of appeal as set forth in Section 200.020 E.6 and 7.)

F. HEARING PROCEDURES.

1. Conduct of Hearing. The Chair shall preside at the hearing, call the hearing to order, call the roll of the Committee in attendance, ascertain the presence or absence of the student charged with misconduct, read the notice of hearing and charges and verify the receipt of notices of charges by the student, report any continuances requested or granted, establish the presence of any adviser or counselor of the student, and call to the attention of the student charged and the adviser any special or extraordinary procedures to be employed during the hearing and permit the student to make suggestions regarding or objections to any procedures for the Conduct Committee to consider.
a. Opening Statements
1) The Primary Administrative Officer shall make opening remarks outlining the general nature of the case and testify to any facts the investigation has revealed.
2) The student may make a statement to the Committee about the charge at this time or at the conclusion of the university's presentation.
b. University Evidence.
1) University witnesses are to be called and identified or written reports of evidence introduced as appropriate.

2) The Committee may question witnesses at any time.
3) The student or, with permission of the committee, the adviser or counselor may question witnesses or examine evidence at the conclusion of the university's presentation.
c. Student Evidence.
1) The student shall have the opportunity to make a statement to the Committee about the charge.
2) The student may present evidence through witnesses or in the form of written memoranda.
3) The Committee may question the student or witnesses at any time. The Primary Administrative Officer may question the student or witnesses.
d. Rebuttal Evidence. The Committee may permit the university or the student to offer a rebuttal of the other=s presentation.
e. Rights of Student Conduct Committee. The Committee shall have the right to:
1) Hear together cases involving more than one (1) student which arise out of the same transaction or occurrence, but in that event shall make separate findings and determinations for each student;
2) Permit a stipulation of facts by the Primary Administrative Officer and the student involved;
3) Permit the incorporation in the record by a reference of any documentation, produced and desired in the record by the university or the student charged;
4) Question witnesses or challenge other evidence introduced by either the university or the student at any time;
5) Hear from the Primary Administrative Officer about dispositions made in similar cases and any dispositions offered to the student appearing before the Committee;
6) Call additional witnesses or require additional investigation;
7) Dismiss any action at any time or permit informal disposition as otherwise provided;
8) Permit or require at any time amendment of the Notice of Hearing to include new or additional matters which may come to the attention of the Committee before final determination of the case; provided, however, that in such event the Committee shall grant to the student or Primary Administrative Officer such time as the Committee may determine reasonable under the circumstances to answer or explain such additional matters;
9) Dismiss any person from the hearing who interferes with or obstructs the hearing or fails to abide by the rulings of the Chair of the Committee;
10) Suspend summarily students from the university who, during the hearing, obstruct or interfere with the course of the hearing or fail to abide by the ruling of the Chair of the Committee on any procedural question or request of the Chair for order.

2. Rights of Students Upon Hearing. A student appearing before a Committee shall have the right to:
a. Be present at the hearing;
b. Have an adviser or counselor and to consult with such adviser or counselor during the hearing;
c. Have students from the Student Panel sit with the Committee or Hearing Panel;
d. Hear or examine evidence presented to the Committee;
e. Question witnesses present and testifying;
f. Present evidence by witnesses or affidavit;
g. Make any statement to the Committee in mitigation or explanation of the conduct in question;
h. Be informed in writing of the findings of the Committee and any sanctions it imposes; and
I. Request review or appeal to the Chancellor as herein provided.

3. Determination by the Student Conduct Committee. The Committee shall then make its findings and determinations in executive session out of the presence of the Primary Administrative Officer and the student charged. Separate findings are to be made:
a. As to the conduct of the student, and
b. On the sanctions, if any, to be imposed. No sanctions shall be imposed on the student unless a majority of the Committee present is reasonably convinced by the evidence that the student has committed the violation charged.

4. Official Report of Findings and Determinations. The Committee shall promptly consider the case on the merits and make its findings and determination and transmit them to the Primary Administrative Officer and the student charged forthwith.

5. Other Procedural Questions. Procedural questions which arise during the hearing not covered by these general rules shall be determined by the Chair, whose ruling shall be final unless the Chair shall present the question to the Committee at the request of a member of the Committee, in which event the ruling of the committee by majority vote shall be final.

6. General Rules of Decorum. The following general rules of decorum shall be adhered to:
a. All requests to address the Committee shall be addressed to the Chair.
b. The Chair will rule on all requests and points of order and may consult with Committee's legal adviser prior to any ruling. The Chair's ruling shall be final and all participants shall abide thereby, unless the Chair shall present the question to the Committee at the request of a member of the Committee, in which event the ruling of the Committee by majority vote shall be final.
c. Rules of common courtesy and decency shall be observed at all times.
d. An adviser or counselor may be permitted to address the Committee at the discretion of the Committee. An adviser or counselor may request clarification of a procedural matter or object on the basis of procedure at any time by addressing the Chair after recognition.
7. Record of Hearing. A taped or stenographic record of the hearing shall be maintained. The notice, exhibits, hearing record and the findings and determination of the Committee shall become the "Record of the Case" and shall be filed in the Office of the Primary Administrative Officer and for the purpose of review or appeal be accessible at reasonable times and places to both the university and the student.

8. Sexual Assault. In cases of alleged sexual assault:
a. The accuser and the accused are entitled to the same opportunities to have others present during a campus disciplinary proceeding;
b. The accuser and the accused shall be informed of the outcome of any campus disciplinary proceeding brought alleging a sexual assault.

Financial Aid Appeals

The University of Missouri-St. Louis has an established financial aid appeals procedure. An aid applicant can raise questions or appeal the offer, or lack of an offer, of financial aid if not satisfied. The general provisions for appeals procedures are as follows:

1) An aid applicant who is not satisfied with the fact that no aid was offered, or was not pleased with the type and/or amount of aid that was offered, may make a written appeal to the Student Financial Aid Appeals Committee reconsideration of the aid request and/or ask for a personal hearing.

2) If on review of all the facts of the case, including any new information which the applicant may provide, the Committee can a) approve an exception to university policy; b) deny the request; c) approve a modified version of the request.

3) If the Appeals Committee cannot provide a satisfactory solution, he/she may refer the written appeal with all pertinent information to the Director of Financial Aid. Where academic progress is an issue, the student may ask an academic adviser or counselor to write or speak in the student's behalf. If a satisfactory solution is worked out, the case is closed.

4) If step three did not solve the problem, it is referred to the campus Faculty-Senate Committee on Student Aid. In ordinary practice it is rare for a case to be appealed beyond this step.

5) If, however, the applicant is still not satisfied after review by committee, the case is to be referred to the Chancellor.

6) The next appeal is the President.

7) The final university appeal would be for the President to refer a case to the Board of Curators.

Grievance About Grade

On each campus of the University of Missouri it is the Chancellor who is ultimately responsible to the President and the Board of Curators for all campus programs, policies, and activities. On the University of Missouri-St. Louis campus the Chancellor has delegated responsibility for overseeing the grade appeal process to the Vice Chancellor for Academic Affairs. The Vice Chancellor is therefore responsible for assuring that grade appeals are handled in a fair and timely manner. More specifically, that officer is responsible for seeing that the procedures outlined below are appropriately followed.

Informal Procedures
At any time after the awarding of a grade, for a course or an assignment in a course, a student may discuss the grade with her or his instructor and request that the instructor review

the grade. If the instructor does review the grade he or she is, of course, free to change the grade or not as is appropriate.

Formal Procedures
The following procedures apply if the above informal procedure does not resolve a dispute concerning a grade to the student's satisfaction and if the process is initiated within thirty working days of the start of the first regular semester (fall or winter) following the semester for which the grade was given, or thirty days after the assignment of the grade (whichever is later).

1. If the student has not already done so, he or she discusses the contended grade fully with the course instructor. The student should prepare for this meeting by taking all relevant written work (test, reports, etc.) with him/her. If the issue is not resolved, and the student wishes to pursue the appeal, she or he should consult the administrative officer of the department or discipline housing the course in question. (This officer will normally be someone below the level of the Dean.) The administrative officer will discuss the appeal with the course instructor, and will inform the student of the result of this discussion. (That result may be the instructor's agreement to change the grade, her or his refusal to change the grade, or her or his agreement to discuss the case further with the student.) The administrative officer may require that the student put the appeal in written form before the administrative officer discusses it with the instructor.

2. If the matter remains unresolved, the student may, within 10 working days of being notified of the result of the discussion between the administrative officer and the instructor, or within 10 working days of her or his last discussion with the instructor, submit a detailed written statement of the complaint to the administrative officer. The administrative officer will refer it to a faculty committee composed of at least three faculty members in the department or unit offering the course or if such are not available, in closely allied fields. This committee will investigate the matter, meeting, as it may deem necessary, with the student, the instructor, and possibly others. Following its inquiries and deliberations, but prior to making its final recommendations, the faculty committee will submit a copy of its findings to the course instructor. If the course instructor elects to comment on the findings to the committee, this must be done in writing within 7 working days. After further consideration, but within 30 working days after receiving the student's statement, the faculty committee will submit its findings with its recommendations and reasons for those recommendations directly to the course instructor, with a copy to the administrative officer.

3. If the faculty committee recommends that the grade be changed, the administrative officer will ask the instructor to implement the recommendation. If the instructor declines, the administrative officer will change the grade, notifying the instructor and the student of this action. Only the administrative officer, upon the written recommendation the faculty committee, will effect a change in grade over the objection of the instructor who assigned the original grade.[1]

4. If the faculty committee recommends that the grade not be changed, the administrative officer will notify the student of this action. The student may then appeal to the dean of the school or college within which the course in question is housed, who will determine whether the above procedures have been properly observed. If the Dean determines that the procedures have not been appropriately followed, *and that their not being followed may have substantively affected the outcome*, the case will be returned to the faculty unit for review by the same, or, if the Dean so determines, by a different committee.

5. If the Dean denies the procedural appeal the student may ask the Vice Chancellor for Academic Affairs, acting as the Chancellor's designee, to conduct a procedural review. The Vice Chancellor is not obligated to conduct such a review and will normally do so only where there is compelling evidence of procedural irregularities. If the Vice Chancellor finds the procedures have not been appropriately followed, *and that their not being followed may have substantively affected the outcome*, the case will be returned to a lower level for rereview. As the Vice Chancellor is acting as the designee of the Chancellor, there is no appeal beyond this level.

Student Organization Policy

Policy on Student Organizations

The university recognizes that the acquisition of knowledge is not confined to the formality of the classroom and that much can be gained through the activities of student organizations. To assure maximum freedom for students and to assure that organizational activities are orderly, responsible, and appropriate to the mission of the university, certain principles and procedures are established through which organizations gain university recognition.

I Procedures for Recognition

A. To obtain recognition or to register, an organization shall submit to the Vice Chancellor for Student Affairs, through the Office of Student Activities, a recognition or registration form which shall include:
1) The name of the organization.
2) A statement of the general purpose of the organization and the means for accomplishing it. The statement should

[1] Under current campus policy, transcript notation of 'DL' automatically becomes an F after one regular semester. These changes, which the Registrar is mandated to make, are not considered grade changes and are consistent with this Grade Appeal Policy. Students may appeal these changes provided the appeal is initiated within 30 working days of the notification of the change.

demonstrate that the organization's purpose is to broaden the scope of general learning, extend knowledge of specialized areas, or to serve the professional, cultural, social or recreational interests of the university community, consistent with the educational goals of the university. The statement must not conflict with policies governing recognized organizations as listed below.
3) The names of at least three officers or responsible representatives, including student numbers, addresses and telephone numbers; these persons must be students registered at the university of Missouri-St. Louis.
4) A statement of any affiliation with any other organization not registered with the university, and a copy of the organization's constitution.
5) Organizations seeking recognition must include a copy of their constitution and/or by-laws, the name of a UM-St. Louis faculty or staff member who agrees to serve as an adviser, and the name of a student member of the organization who will serve as the organization's representative on the Student Government Association.
6) Upon submission of the recognition or registration form, the organization shall be granted temporary privileges until the request for recognition is acted upon by the Senate Student Affairs Committee or the request to register is approved by the Director of Student Activities or his/her designee.

B. To maintain recognition or registration, an organization must update their recognition form or re-register with the Office of Student Activities no later than two weeks following the beginning of the fall semester.

II Privileges of Recognized Organizations

1) Use of campus facilities and services for organizational activities as provided in the university regulations.

2) Use of the university name in connection with publicity, but only for identification purposes, and in no way to imply support of the university for any position of the organization.
3) Participation in university-sponsored events.
4) Application for supplemental financial assistance.
5) Participation as a voting member of Student Government Association. Organizations who register may not apply for supplemental assistance and may not be voting members of Student Government Association.

III Policies Governing Recognized or Registered Organizations

1) Organizations shall comply with the Rules and Regulations of the University of Missouri and the St. Louis campus.
2) Organizations' membership policy shall not discriminate for reasons of color, creed, national origin or gender. Any organization may petition to the Vice Chancellor for Student Affairs for exemption from the requirement as it applies to gender. Academic and professional organizations which have discriminatory membership policy based on gender shall not be recognized.
3) Organizations' membership shall not be subject to approval by anyone other than the local campus membership.
4) Organizations are expected to maintain fiscal responsibility.
5) Registered organizations are encouraged to seek the advice of faculty and other members of the university community.
6) Recognized organizations are required to seek the advice of faculty and other members of the community.
7) Recognized organizations are required to participate in the Student Governance process.

IV Procedure for Review of Grievances

A. Any member of the university community may bring charges against a recognized organization for breach of the above policies or procedures.

B. Such charges, except those pertaining to discrimination, are brought initially to the Vice Chancellor for Student Affairs, who may:
1) Dismiss the charges, in which case an appeal may be made to the Senate Student Affairs Committee.
2) Settle the charges in a way acceptable to both parties or,
3) Refer the charges to the Senate Student Affairs Committee.

C. Penalties may range from withdrawals of one or more privileges to withdrawal of recognition or registration. Assessment of penalties shall also provide for the conditions leading to reinstatement of such privileges for recognition.

D. Either party to the charges may appeal the decision of the Senate Student Affairs Committee to the Chancellor.

Policy on Hazing

Hazing, defined by the Fraternity Executive Association and accepted by the University of Missouri-St. Louis, is any intentional action taken or situation created, whether on or off university premises, that produces mental or physical discomfort, embarrassment, harassment, or ridicule. This includes but is not limited to: paddling in any form, creation of excessive fatigue, physical or psychological shocks, wearing apparel publicly which is conspicuous and not normally in good taste, engaging in public stunts and buffoonery, morally degrading or humiliating games and activities, involuntary labor, or any activity not consistent with the University of Missouri Board of Curators Standard of Student Conduct. The University of Missouri-St. Louis does not condone or tolerate hazing of any type by an organization, or by an individual against another individual.

The Office of Student Activities will investigate any incident in which a charge of hazing has been made. university recognition may be temporarily withdrawn pending hearings and due process procedures.

Should it be determined that a student organization or any of its members is guilty of hazing as previously defined, sanctions may include but are not limited to:

A. Automatic and indefinite suspension of campus recognition or registration with an accompanying loss of all campus privileges (i.e. use of facilities, student services, etc.);

B. Disciplinary action against those members involved in the incident(s) including suspension or expulsion from the university.

Implementation: Each organizational president (or equivalent officer) is required to read and sign the university's Policy on Hazing at the first regular meeting at which he or she presides. This policy, signed by the incoming president (or equivalent officer), must accompany any notification of a change in officers submitted to the Office of Student Activities. Failure to do so will result in the automatic imposition of inactive status on the organization with an accompanying loss of all university privileges until such time as the signed policy is submitted.

The University of Missouri-St. Louis is an affirmative action/equal opportunity employer committed to excellence through diversity.

Therefore, the university enthusiastically complies with and vigorously enforces each Federal and State Executive Order, law and regulation, University of Missouri Rules and Regulations and University of Missouri-St. Louis directive

that prohibits discrimination against employees, students, and others based upon age, ancestry, color disability, national origin, race, religion, sex, or veteran status.
The above compliance is established upon, but not limited to, the following employment and education related equal opportunity laws:
Civil Rights Act of 1964, Title VII, as amended
Executive Order 11246, Equal Employment Opportunity
Equal Pay Act of 1963, as amended
Age Discrimination in Employment of 1967, as amended
Vietnam Era Veterans Readjustment Assistance Act of 1974, as amended Executive Order 11141, Age Discrimination
Rehabilitation Act of 1973, Section 503, as amended
Rehabilitation Act of 1973, Section 504, as amended
Civil Rights Act of 1964, Title VI, as amended
education Amendments of 1972, Title IX
Americans with Disabilities Act of 1990

Based upon the foregoing documents, the Board of Curators of the University of Missouri has adopted the appropriate equal opportunity policies and procedures. The Chancellor is responsible for the implementation of equal opportunity at UM-St. Louis. Assisting the Chancellor and each Vice Chancellor is the Office of Equal Opportunity (OEO).

All equal opportunity functions for the campus are centralized in the OEO.

Equal Opportunity Policies of the University of Missouri-St. Louis

The following university policies govern the Office of Equal Opportunity (OEO): Equal Employment/Educational Opportunity Policy--The Curators of the University of Missouri do hereby reaffirm and state the policy of the University of Missouri on Equal Employment/Educational Opportunity, Sexual Harassment.

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, disability, or status as a Vietnam era veteran. Equal opportunity is and shall be also provided for all students and applicants for admission in compliance with existing legislation.

University of Missouri Equal Opportunity Statement

The University of Missouri-St. Louis is committed to equal employment and educational opportunities without regard to conditions of race, color, sex, religion, national origin, age, physical ability, veteran status, or individuals with HIV, AIDS, or ARC.

Each administrative unit of the university employing personnel, admitting students, or entering into contracts is charged with implementation of the university's commitments, and maintenance of records to demonstrate good faith efforts, in admission and training, recruiting and hiring, compensating and promoting, layoff and dismissal, granting of tenure, contracting and purchasing, and access to facilities and programs.

As an employer of persons and as an institution accountable to taxpayers and the general public, the university must have administrative and management practices that are designed for the best use of talent for operational effectiveness and efficiency.

(1) Recruitment and employment of personnel
a. Recruitment of professors and academic personnel in research and continuing education/extension is primarily the responsibility of deans, directors, chairpersons, and department heads.
b. Recruitment of administrative, service, and support staff, except for top-ranking administrative personnel, is primarily the responsibility of the personnel office of each campus, and the director of Human Resources for the University of Missouri-St. Louis administration. Selection is the responsibility of the administrative head of the employing unit.

c. Administrative efforts are made to recruit and employ minorities, women, the handicapped, and members of protected age groups.
d. The university maintains relationships with governmental agencies, community groups, and other organizations which may be of assistance in furthering recruitment and employment of minority groups, handicapped persons, and women into departments and units which have imbalances. Personnel sources are advised of the university's commitment to equal opportunity and affirmative action.
e. Imbalances exist when available talent among specified minorities, women, handicapped, or protected age group members is proportionately underrepresented in a particular personnel category in the university.

Underrepresentation is determined by an analysis of the appropriate employment market which is generally national or regional for major administrators, professors, and academic personnel in research and continuing education/extension. The appropriate employment market is generally the state or local community for most administrative positions and for service and support staff.
f. Advertisement and notices of employment opportunities indicate a filing date for consideration.
g. Notice of employment and training opportunities are made to existing personnel.
h. Employment applications meet federal and state requirements relating to equal opportunity.
I. The Office of Equal Opportunity maintains records to demonstrate efforts and results of efforts to achieve equity and to act affirmatively and reasonably to correct imbalances.

(2) Salaries, wages, and benefits
a. University compensation and benefit programs are administered without regard to conditions of race, color, sex, religion, national origin, age, physical ability, or veteran status.
b. The salary range for academic positions is determined in advance of recruitment on the basis of prevailing national levels and departmental scales for the educational attainment, experience, and specialty desired.

(3) Facilities, activities, and working conditions
a. University facilities are maintained on an equitable and nondiscriminatory basis.
b. Physical facilities have been adapted within the limits of the financial resources available to insure access to the university by the physically handicapped.
c. Opportunities for involvement in university activities are provided on an equitable or nondiscriminatory basis.

(4) Promotion and training
a. Promotions, contract renewals, the granting of tenure, and reductions in force of academic personnel are handled in accordance with established university procedures and qualification criteria for all persons and free of discrimination.
b. University policy requires that promotions, demotions, layoffs, recalls from layoffs, transfers, and temporary hires for service and support personnel are determined without regard to conditions of race, color, sex, religion, national origin, age, physical ability, or veteran status.
c. Participation in training and educational programs sponsored by the university, including apprenticeships, is open to all employees within eligible job classifications.
d. The university offers developmental programs for professional and personal growth to enhance promotion potential.

(5) Student admission and retention
a. The university gives students equal access to its academic programs without regard to conditions of race, color, sex, religion, national origin, age, or physical ability. Furthermore, the university seeks to recruit, enroll, retain, and graduate minority group members and women in those fields in which they are underrepresented.
b. The University of Missouri has a unique responsibility for graduate and professional public higher education in the state of Missouri. Therefore, academic departments offering doctoral and/or advanced professional programs in disciplines and professions in which there is a deficiency of minorities and women have adopted methods to encourage enrollment, retention, and graduation of minority group members and women.
c. Affirmative action is taken to offer graduate teaching and research assistantships to minorities and women.
d. Business, government, industry, and labor are solicited to assist and provide support to minorities and women through financial aid and by providing work experiences as they pursue academic objectives.
e. Personnel representatives of prospective employers using university services and facilities to interview and recruit students must be equal opportunity employers, and must give all qualified students equal opportunity for interviews, without regard to conditions of race, color, sex, religion, national origin, age, disability, or veteran status.

(6) Appeal and grievance procedures
a. Grievance procedures are available for the processing of complaints and grievances of alleged discrimination based on conditions of race, color, sex, religion, national origin, age, physical ability, or veteran status.
b. A student grievant has access to the student grievance procedures through the Office of Student Affairs, the school or college, the campus, and central administration.
c. The Office of Equal Opportunity currently provides advice and information to grievants on the grievance procedures.

(7) Records and reports
a. The administrative head of each university unit must be prepared to demonstrate that equal opportunity is practiced and that affirmative action is taken in recruiting and employment of full-time and part-time personnel, admission and retention of students, provision of facilities and programs, and purchasing and contracting.

b. Each responsible administrative unit of the university must be prepared to show that procedures followed and selections made are in compliance with policies on equal employment and affirmative action. Admissions applications are retained for one year and employment applications are retained for one year.

University business involving contracts and bids for various services are retained in compliance with University of Missouri record management policies.
c. Those responsible for recruiting, admitting, and retaining students "undergraduate, graduate and professional" maintain files and records documenting efforts to provide equal opportunity and act affirmatively to attract and retain minority group members, women, and older and handicapped persons. A report is made annually to the appropriate administrative committee.
d. Campus administrative officers have records demonstrating efforts to provide equal opportunity and show affirmative action in the interests of minority group members, women, and handicapped and older persons in the availability and use of university facilities, including recreational facilities.
e. Those responsible for personnel recruitment and employment personnel, including graduate teaching and research assistants, have records that reflect their adherence to equal opportunity and affirmative action practices.
f. Academic or administrative units receiving complaints or grievances based on allegations of discrimination report those cases to the Office of Equal Opportunity.

(8) Reviewing and monitoring
a. A university Committee on Equal Employment Opportunity and Affirmative Action (EEO/AA) is appointed annually by the Chancellor.
b. EEO/AA committee membership includes a reasonable cross section of personnel, including a representation of women, minorities, and the handicapped.
c. The EEO/AA committee advises the Director of Equal Opportunity on matters relating to affirmative action and university equal employment policy.
d. Administrative officers (chancellor, vice chancellors, deans, directors, department chairpersons, and all other supervisory personnel) are responsible for implementation of equal opportunity and affirmative action policies and practices within their areas of jurisdiction, and the effectiveness of implementation will be an element in the evaluation of the performance of each officer.

(9) Dissemination
a. Equal opportunity and affirmative action policies and programs are disseminated throughout the university and discussed at appropriate school, college, departmental, management, and supervisory meetings. The subjects covered include attraction, admission, and retention of students; recruitment, employment, training, promotion, and transfer of employees.
b. University employees, faculty, staff, and students are kept informed of equal opportunity programs and affirmative action goals through campus publications and communications, the Personnel Policy Manual, the Faculty Handbook, divisional and departmental meetings, staff orientation programs, and posters.
c. Copies of the Equal Employment and Affirmative Action policies are available to a cross section of community organizations, news media, area colleges, secondary schools and recruiting sources.
d. Copies of the Affirmative Action Policy will be made available on request to employees, applicable governmental agencies, and contractors or subcontractors.
e. University invitations to bid, purchase orders, and specifications to architects and engineers contain the university's equal opportunity policy.
f. University correspondence, employment notices and advertising, academic information, and other public notices contain the university's equal opportunity phrase.

Sexual Harassment

This University of Missouri policy aims for an increased awareness regarding sexual harassment by making available information, education and guidance on the subject for the university community.

A. Policy Statement--It is the policy of the University of Missouri, in accord with providing a positive discrimination -free environment, that sexual harassment in the work placeor the educational environment is unacceptable conduct. Sexual harassment is subject to discipline, up to and including separation from the institution.

B. Definition--Sexual harassment is defined for this policy as either:

(I) unwelcome sexual advances or requests for sexual activity by a university employee in a position of power or authority to a university employee or a member of the student body, or
(ii) other unwelcome verbal or physical conduct of a sexual nature by a university employee or a member of the student body to a university employee or a member of the student body, when:
1. Submission to or rejection of such conduct is used explicitly or implicitly as a condition for academic or employment decisions; or
2. The purpose or effect of such conduct is to interfere unreasonably with the work or academic performance of the person being harassed; or
3. The purpose or effect of such conduct to a reasonable person is, to create an intimidating, hostile, or offensive environment.

C. Non-Retaliation--This policy also prohibits retaliation against any person who brings an accusation of discrimination or sexual harassment or who assists with the investigation or resolution of sexual harassment.

Notwithstanding this provision, the university may discipline an employee or student who has been determined

to have brought an accusation of sexual harassment in bad faith.

D. Redress Procedures--Members of the university community who believe they have been sexually harassed may seek redress, using the following options:
1. Pursue appropriate informal resolution procedures as defined by the individual campuses. These procedures are available from the campus Affirmative Action/Equal Opportunity Officer.

2. Initiate a complaint or grievance within the period of time prescribed by the applicable grievance procedure. Faculty are referred to Section 370.010, "Academic Grievance Procedures"; staff to Section 380.010, `"Grievance Procedure for Administrative, Service and Support Staff"; and students to Section 390.010, "Discrimination Grievance Procedure for Students."

Pursuing a complaint or informal resolution procedure does not compromise one's rights to initiate a grievance or seek redress under state or federal laws.

E. Discipline--Upon receiving an accusation of sexual harassment against a member of the faculty, staff, or student body, the university will investigate and, if substantiated, will initiate the appropriate disciplinary procedures. There is a five-year limitation period from the date of occurrence for filling a charge that may lead to discipline.

An individual who makes an accusation of sexual harassment will be informed:
1. At the close of the investigation, whether or not disciplinary procedures will be initiated; and
2. At the end of any disciplinary procedures, of the discipline imposed, if any.

Auxiliary Aids for Students with Disabilities

240.040 Policy Related to Students with Disabilities
Executive Order No. 21, 11-1-84; Amended 2-25-97.

A. EQUALITY OF ACCESS

The University of Missouri (UM) strives to assure that no qualified person with a disability[1] shall, solely by reason of the disability, be denied access to, participation in, or the benefits of any program or activity operated by UM. Each such qualified person shall receive reasonable accommodations to provide equally effective access to educational opportunities, programs, and activities in the most integrated setting appropriate unless provision of such reasonable accommodation would constitute an undue hardship on the university or would substantially alter essential elements of the academic program or course of study or would otherwise compromise academic standards. This policy shall apply to all programs, services, and activities of the university, including but not limited to recruitment, admissions, registration, financial aid, academic programs, advising, counseling, student health, housing and employment.

B. FEDERAL AND STATE LAWS

This policy is intended to be consistent with Section 504 of the Rehabilitation Act of 1973, which states that no recipient of federal financial assistance may discriminate against qualified individuals with disabilities solely by reason of disability. This policy is also intended to be consistent with the Americans with Disabilities Act of 1990 and the Missouri Human Rights Act.

C. FACILITIES

Each program or activity, when viewed in its entirety, shall be accessible to otherwise qualified and eligible students with disabilities. Facilities, or parts of facilities, constructed or renovated for UM use will be designed and built so that they are accessible to and usable by persons with disabilities, in accordance with the ADA Accessibility Guidelines or other accessibility standards properly adopted by the campus. Accessible on-campus housing and food service will be provided at the same cost and with the same program options to qualified students with disabilities as are afforded to non-disabled students. When any UM classes, programs or activities are held in private facilities, thorough efforts shall be made to obtain facilities which are accessible.

D. COORDINATION OF PROGRAMS AND SERVICES FOR STUDENTS WITH DISABILITIES

1. Campus disability support service (DSS) offices or other designated campus units are responsible for coordination of programs, services, and classroom accommodations for qualified applicants for admission and qualified enrolled students with disabilities. Such coordination relates solely to disability issues. Determinations as to whether a student is otherwise qualified often will be based on the academic requirements developed by the faculty. Specific services available to qualified students with disabilities will be provided by the university in conformity with the requirements of federal and state law.

1. From the U.S. Justice Department's ADA Title II Technical Assistance Manual, Section II-2.8000: Qualified individual with a disability. In order to be an individual protected by Title II, the individual must be a "qualified" individual with a disability. To be qualified, the individual with a disability must meet the essential eligibility requirements for receipt of services or participation in a public entity's programs, activities, or services with or without: 1) Reasonable modifications to a public entity's rules, policies, or practices; 2) Removal of architectural, communication, or transportation barriers; or 3) Provision of auxiliary aids and services.

The "essential eligibility requirements" for participation in many activities of public entities may be minimal. For example, most public entities provide information about their programs, activities, and services upon request. In such situations, the only "eligibility requirement" for receipt of such information would be the request for it. However, under other circumstances, the "essential eligibility requirements" imposed by a public entity may be quite stringent.

2. Determinations as to whether requested services and requested accommodations are required will be made initially by the Coordinator of DSS. Accommodation of the disability will be determined by the coordinator and faculty member, and if either disagrees with the prescripted accommodation, such disagreement shall be described in writing promptly and submitted to the Chancellor or his/her designee for resolution in a prompt manner.

3. Initial determinations and any disagreements submitted to the Chancellor or his or her designee will take into consideration all relevant factors including, but not limited to, the following:
a. current documentation of the specific disability and of the need for the requested services or accommodations;
b. the essential elements of the academic program or course of study being pursued;
c. the fact that the law does not require a university to substantially alter essential elements of its academic program or course of study or to otherwise compromise its academic standards.

4. All students seeking disability-related services and/or accommodations must disclose the presence of a specific disability to DSS. Before receiving requested services and/or accommodations, the student will be required to provide the DSS office with current medical or other diagnostic documentation of a disability from a qualified physician or other qualified diagnostician, as well as current documentation of the need for accommodations. In cases where existing documentation is incomplete or outdated, students may be required to provide additional documentation at the student's expense.

5. It is the student's responsibility to self-identify, to provide current and adequate documentation of his/her disability, and to request classroom accommodations, through the DSS office. The appropriate documentation must be provided in a timely manner to ensure full resolution of accommodations prior to the student's entrance into the program or course of study. Documentation review and accommodations planning by DSS, including consultation with faculty and/or other campus entities that may be affected in providing accommodations, will be done on an individualized case-by-case basis.

6. Reasonable classroom accommodations will be provided to otherwise qualified and eligible students with disabilities who have self-identified and who have provided satisfactory documentation in support of their timely request for such accommodations, in compliance with federal and state mandates. These accommodations shall not affect the substance of the educational programs or compromise educational standards.

7. In addition to providing accommodations needed to ensure nondiscrimination in access to educational opportunities by otherwise qualified students with disabilities, the university is responsible for ensuring that no qualified disabled student is denied the benefits of or excluded from participation in a university program because of the absence of auxiliary aids, services, and/or other reasonable accommodations. Auxiliary aids, services, and/or other accommodations include but are not limited to interpreters (sign or oral), readers, scribes, adaptive equipment, and other appropriate services or equipment necessary for course or program accessibility.

8. While funding for accommodations to ensure equally effective access is provided by the university, funding for auxiliary aids, accommodations, and/or services in some instances may be shared with state vocational rehabilitation agencies. The law does not require and the university does not provide prescription devices or other devices/services of a personal nature (e.g. personal attendants) for students with disabilities.

E. ESTABLISHMENT OF CAMPUS POLICIES
Chancellors are directed to establish campus policies and/or procedures consistent with this order. These should cover, at a minimum, treatment of disability- related information and appropriate regard for confidentiality, responsibilities of students in applying for services through DSS, timelines to assure that students make accommodation requests in a timely manner, guidelines to assure that disability documentation is reasonably current, a description of the process of individualized assessment of each student's disability documentation and accommodation request(s), the role of faculty in determining the essential elements of the academic program or course of study and the academic standards involved in the accommodations planning and review process within the context of academic program requirements, and processing of complaints and grievances including a procedure for appeal when faculty and/or academic administrators or administrators in other involved campus entities do not agree with the DSS on the requirements of this policy.

ILLUSTRATION: The medical school at a public university may require those admitted to its program to have successfully completed specified undergraduate science courses.

AIDS Policy Statement
Current knowledge indicates college and university students or employees with AIDS, ARC, or a positive antibody blood test do not pose a health risk to either students or employees in a usual academic or residential setting. The policy of University of Missouri is to permit students and employees with AIDS to continue to engage in as many of their normal

pursuits as their condition allows. Managers should be sensitive to the medical problem and ensure that such employees are treated consistent with the treatment of other employees. Students will be allowed to continue their enrollment and activities (including continued residency in student housing) as long as they continue to meet academic standards and medical evidence indicates their conditions are not a threat to themselves or others. Every effort will be made to maintain confidentiality at all times.

The university also has a legitimate interest in the welfare of all students, employees, and visitors to the campus. Every reasonable precaution will be taken to minimize the risk that an employee's or student's condition will present a health and/or safety hazard to others.

The university will not discriminate against individuals with HIV infection, AIDS or ARC, but this protection does not include individuals with secondary infections or diseases that would constitute a direct threat to the health or safety of others or who may because of the disease or infection be unable to perform duties of their employment. In such cases, the appropriate university personnel or student policy will determine what changes, if any, will be made in the student's or employee's academic or work program.

In the event of public inquiry concerning AIDS on campus, the Chancellor or the Chancellor's designee will provide appropriate information on behalf of the university. Existing policies regarding confidentiality of employee and student records will be followed.

Consistent with its concern for students and employees with AIDS, the university offers a range of resources through the AIDS Task Force on each campus and through other campus services.

a. Student, employee, and management education and information;
b. Referral to agencies and organizations that offer supportive services for life-threatening illnesses;
c. Consultation to assist employees in effectively managing health, leave, and other benefits.

The AIDS Task Force on each campus will continue to meet periodically to review and update policy and to make recommendations as new medical facts become available. Each Task Force will continue to encourage programs to educate all members of the campus community about the reality of AIDS.

To address specialized needs, each campus is authorized to adopt and implement special policies related to AIDS which are consistent with this policy statement.

The Office of Equal Opportunity is located in 414 Woods Hall. The telephone number is 516-5695.

Affirmative Action on Committee Appointments PolicyCAs a part of the implementation of the Affirmative Action Plan of the University of Missouri, any person appointing any committee for the university or any campus, in selecting the membership, shall give due consideration to the inclusion in such membership of women and minorities unless membership thereon is ex-officio.

UM Board of Curators Policy on Maintaining a Positive Work and learning Environment

1. The University of Missouri is committed to providing a positive work and learning environment where all individuals are treated fairly and with respect, regardless of their status. Intimidation and harassment have no place in a university community. To honor the dignity and inherent worth of every individual student, employee, or applicant for employment or admission is a goal to which every member of the university community should aspire and to which officials of the university should direct attention and resources.

2. With respect to students, it is the university's special responsibility to provide a positive climate in which students can learn. Chancellors are expected to provide educational programs and otherwise direct resources to creative and serious measures designed to improve interpersonal relationships, to help develop healthy attitudes toward different kinds of people, and to foster a climate in which students are treated as individuals rather than as members of a particular category of people.

3. With respect to employees, the strength we have as a university is directly related to maintaining a positive work environment throughout the institution. The university should provide a positive recruiting and work environment focused on the duties and skills of the work to be performed. It is the expectation of the university that all employees and potential employees will be treated on the basis of their contribution or potential contribution without regard to personal characteristics not related to competence, demonstrated ability, performance, or the advancement of the legitimate interests of the university. The General Officers are expected to provide training programs for supervisors to assist in achieving this objective.

4. With respect to violations of the policy, faculty, staff and students may utilize their respective grievance procedures approved by the Board of Curators. The approved grievance procedures are as follows: Grievance procedure in Section 370.010 for faculty; grievance procedure in Section 380.010 for staff; and grievance procedure in Section 390.010 for students, and each such procedure shall be deemed as amended to include grievances filed under this policy. This policy shall not be interpreted in such a manner as to violate the legal rights of religious organizations, or military organizations associated with the Armed Forces of the United States of America.

Other Procedures or Regulations

Discrimination Grievance Procedure for Students
390.010
December 17, 1982, and January 25, 1990

A. GENERAL

1. It is the policy of the University of Missouri to provide equal opportunity for all enrolled students and applicants for admission to the university on the basis of merit without discrimination on the basis of their race, color, religion, sex, national origin, age, or disability, or Vietnam era veteran status. Sexual harassment shall be considered discrimination because of sex.

2. To insure compliance with this policy, all University of Missouri prospective or enrolled students shall have available to them this student discrimination grievance procedure for resolving complaints and/or grievances regarding alleged discrimination.

3. This grievance procedure neither supersedes nor takes precedence over established university procedures of due process for any and all matters related to Academic Dishonesty, Grade Appeals, Traffic Appeals, Disciplinary Appeals, or other specific campus procedures which are authorized by the Board of Curators and deal with faculty/staff responsibilities.

4. These proceedings may be terminated at any time by the mutual agreement of the parties involved.

NOTE: A grievance concerning specific incidents filed under this discrimination grievance procedure shall not be processed on behalf of any student who elects to utilize another university grievance procedure. In addition, the filing of a grievance under these procedures precludes the subsequent use of other university grievance or appeals procedures for the same incident.

B. DEFINITIONS

1. A complaint is an informal claim of discriminatory treatment. A complaint may, but need not, constitute a grievance. Complaints shall be processed through the informal procedure herein set forth.

2. A grievance is the written allegation of discrimination which is related to:
a. Recruitment and admission to the institution.
b. Admission to and treatment while enrolled in an education program.
c. Employment as a student employee on campus.
d. Other matters of significance relating to campus living or student life, including, but not limited to:
Assignment of roommates in resident halls; Actions of fraternities and sororities; Membership in and/or admission to clubs/organizations; Student Health Services; Financial aid awards.

3. A student is any person who has applied for admission or readmission, or who is currently enrolled, or who was a student of the university of Missouri at the time of the alleged discrimination.

4. Persons with disabilities--For the purpose of this student discrimination grievance procedure, a "person with a disability" has been substituted for "handicapped individual" (Section 504, Rehabilitation Act of 1973) and shall be defined as " .any person who
a. Has a physical or mental impairment which substantially limits one or more of such person's major life activities,
b. Has a record of such impairment, or
c. Is regarded as having such an impairment."

For purpose of this definition, A "major life activity" means any mental or physical function or activity which, if impaired, creates a substantial barrier to employment and/or education.

Any reference in this document to written materials or to written or oral presentations within the student discrimination grievance procedure may be adjusted to accommodate persons with disabilities for whom the stated materials or required presentations would not be appropriate. Cost of such accommodation will be borne by the university, with no charge to the individual.

5. Appropriate Administrative Officer--The primary administrative officer on the staff of the Chancellor (in the area of Student Affairs/ Services, Administrative Services, Development, and Academic Affairs) having administrative responsibility for the unit in which the discrimination is alleged to have occurred.

6. Grievance Consultant--At any step the Director of Equal Opportunity or of Affirmative Action may be asked to serve as a consultant by any of the parties involved in this grievance procedure.

C. COMPLAINTS

1. Policies and Procedures--A student with a complaint will be provided with copies of appropriate policies and procedures pertaining to student complaints and grievances, and the Chief Student Personnel Administrator or his/her designee and the Officer for Equal Opportunity or for Affirmative Action shall be available to assist the student in understanding the opportunities afforded through such policies and procedures. The student may choose to have an adviser participate in any stage of the grievance procedure, subject to the restrictions of the hearing procedures set forth in Section 390.010 F.

2. Joint Complaint--If more than one student is aggrieved by the same action, these students may, by mutual written agreement among themselves, file with the Chief Student Personnel Administrator a complaint and pursue their complaints jointly under this grievance procedure. If the

number of students in such a case is so large as to make it impracticable for them to be heard individually in a joint proceeding, they may, by mutual agreement, elect one or more of their number to act on behalf of them all.

3. Students may informally discuss a complaint with the relevant supervising administrator. Every reasonable effort should be made to resolve the matter informally at this administrative level. If a satisfactory resolution is not reached, the student may pursue the matter through each level of administrative jurisdiction up to and including the Appropriate Administrative Officer, or file a grievance within the time specified in D.1.b.

4. Complaints Involving Recruitment
a. Undergraduate applicants must first present complaints about recruitment to the Director of Admissions. If a satisfactory resolution is not reached, the applicant may appeal the matter to the immediate supervising officer of the Director of Admissions.
b. Applicants for graduate study may request a meeting with the academic department head and the dean of the college, or their designees, who are actually involved in the recruitment effort to discuss the matter informally. If a satisfactory resolution is not reached, the applicant may appeal to the Dean of the Graduate School and finally to the Appropriate Administrative Officer.

5. Complaints Involving Admissions (Undergraduate or Professional)
a. Undergraduate and professional student applicants shall present complaints to the Director of Admissions or to the dean of the school or college, depending upon where the application was originally filed.
b. This university official shall compare the person's academic qualifications against the official university admissions criteria and review the denial. If the denial is sustained, the applicant may appeal this decision to the official=s immediate supervisor or to the appropriate admissions committee.

6. Complaints Involving Admissions (Graduate)--
Applicants to the Graduate School may ask for a meeting with the academic department head of the program to which the applicant was seeking admission.

This official shall explain the reasons for the denial of recommendation for admission. If a satisfactory resolution is not reached, the applicant may then appeal to the Dean of the Graduate School or to the appropriate admissions committee. If the denial is upheld, the applicant may appeal the decision to the appropriate administrative officer.

7. Complaints Involving Admissions to or Treatment in an educational Program or in the Granting of Assistantships -
An undergraduate or graduate student enrolled at the institution who has a discrimination complaint involving admission to or treatment in an educational program or in the granting of assistantships may request a conference with the appropriate department head and with the dean of the school or college (or the dean's designee) to discuss the matter informally. If a satisfactory resolution is not reached, the student may present a grievance pursuant to Section 390.010 F.

8. Complaints Involving Nonacademic Matters Related to Campus Living and Student Life--A currently enrolled student who has a university-related complaint concerning discrimination in nonacademic matters including but not limited to assignment of roommates, actions of fraternities and sororities, membership in and/or admissions to clubs/organizations, student health services and financial aid awards may request a conference with the appropriate administrative supervisor, department head and/or director to discuss the matter informally. If a satisfactory resolution is not reached, the student may present a grievance pursuant to Section 390.010 D.

9. Complaints Involving Student Employment on Campus .
A student enrolled at the university who alleges that discrimination occurred either in applying for work or while working as a student employee at a university job may request a conference with the supervisor, department head or director of the employing unit to discuss the matter informally. If a satisfactory resolution is not reached, the student may present a grievance pursuant to Section 390.010 D.

10. Complaints Involving Financial Aid (Undergraduate, Graduate, Professional):
a. Undergraduate, graduate, and professional student aid applicants shall present complaints to the Director of Student Financial Aid where the application was originally filed or the award originally made.
b. This university official shall compare the person=s financial and academic qualifications against the official university financial aid criteria and review the award, amount, or denial of the aid. If the original judgment is sustained, the applicant may appeal this decision to the official's immediate supervisor or to the appropriate financial aid committee.

D. INITIATING A GRIEVANCE

1. Policies and Procedures-- student with a grievance will be provided copies of appropriate policies and procedures pertaining to student complaints and grievances, and the Chief of Student Personnel Administrator or designee and the Office for Equal Opportunity or for Affirmative Action shall be available to assist the student in understanding the opportunities afforded through such policies and procedures. The student may choose to have an adviser participate in any stage of the grievance procedure, subject to the restrictions of the hearing procedures set forth in Section 390.010 F.
a. Joint Grievance--If more than one student is aggrieved by the same action, these students may, by mutual written agreement among themselves, file with the Chief Student Personnel Administrator a grievance and pursue their grievances jointly under this grievance procedure. If the

number of students in such a case is so large as to make it impractical for them to be heard individually in a joint proceeding, they may, by mutual agreement, elect one or more of their number to act on behalf of all of them.
b. Regardless of their nature, all discrimination grievances are to be filed with the Chief Student Personnel Administrator. A grievance must have been filed by a student within one-hundred-eighty (180) calendar days of the date of the alleged discriminatory act.

2. Filing a Grievance
a. All grievances must be presented in writing and contain the following information:
1) A clear concise statement of the grievance which includes the name of the person(s) against whom the grievance is made, the date(s) of the alleged
discrimination and a statement describing the specific supporting evidence;
2) A brief summary of the prior attempts to resolve the matter which includes the names of persons with whom the matter was discussed and the results of those previous discussions;
3) A specific statement of the remedial action or relief sought.
b. Within seven (7) working days, the original grievance form with an explanation will be returned to the student if, in the judgment of the Chief Student Personnel Administrator, the statements are vague or do not meet the above requirement. The student may make the necessary corrections and resubmit the grievance within seven (7) days.

3. Any grievance not filed within the time limits specified in Section 390.010 D.1.B shall be deemed waived by the grievant. The Chief Student Personnel Administrator may extend the time limits only if adequate cause for an extension of the time limits can be shown by the student.

4. For informational purposes, copies of the grievance shall be forwarded to the Appropriate Administrative Officer and the Director of Equal Employment and/or Affirmative Action.

5. Within fifteen (15) working days of receipt of a grievance that satisfies the requirement of Section 390.010 D.1.b, the Appropriate Administrative Officer with the consent of the parties involved may establish an informal hearing with the aggrieved student, the responding faculty/staff/organization, the respondent's supervisor and the Appropriate Administrative Officer's designee. The Appropriate Administrative Officer shall not involve himself/herself in this meeting. If this informal means of resolving the grievance fails, a grievance committee will be impaneled as called for in Section 390.010 E.1.

E. FORMATION OF GRIEVANCE COMMITTEE

1. It is the Appropriate Administrative Officer's responsibility to initiate the selection of the grievance committee within fifteen (15) working days after the request for the formation of a grievance committee or after the completion of the informal hearing provided for in Section 390.010 F.5 without satisfaction to the grievant.

2. A grievance hearing panel shall be established by October 1 of each year from which a grievance committee should be constituted. The panel shall consist of ten (10) faculty, ten (10) staff and ten (10) students. Selection of the panel will be made by the Chief Student Personnel Administrator from recommendations by the appropriate faculty, staff and student associations. Selection of membership will consider sex, race, disability, academic rank, student classification and employee classification. Membership on the hearing panel shall be for two years. A member's term shall expire on September 30 of the second year unless he/she is serving at that time on hearing committee still in the process of reviewing an unresolved grievance. In such case, the member's term shall expire as soon as the committee has submitted a written report of its findings and recommendations to the Appropriate Administrative Officer.

3. A hearing committee shall be composed of five (5) members. The grievant shall select two (2) members from the grievance hearing panel provided by the Chief Student Personnel Administrator. The responding faculty/staff/ organization shall select two (2) members from the grievance hearing panel. Both parties should have their selections made within 15 working days of the receipt of the request. The four committee members shall then select an additional member from the grievance hearing panel to serve as chair. Neither members of the immediate departmental unit nor student members of pertinent student organizations involved in the grievance shall be eligible to serve on the committee.

4. Any person selected to a grievance committee will be expected to serve on such committee and to be present at all sessions. If a member is absent from a single session, he/she will be required to review all tapes or transcribed proceedings of that session prior to the next meeting of the committee. Should a member be absent from two sessions or should a member request to be excused from service for reasons of illness, necessary absence from the campus or other hardship, then that member shall be replaced in the same manner used in the original selection (see Section 390.010 E.3). If a member is unable or ineligible to serve for whatever reason, the replacement shall review all tapes or written transcripts and all submitted evidence prior to service on the committee. Five members of the hearing committee, duly selected as in Sections 390.010 E.3 and E.4 must attend the opening and closing session of the hearing.

F. HEARING PROCEDURES FOR FORMAL GRIEVANCES

1. It shall be the responsibility of the Appropriate Administrative Officer to coordinate the procedures contained herein, to make provisions for hearing rooms, to coordinate secretarial and recording services and to otherwise serve the grievance committee as needed.

2. At the first organizational meeting of the grievance committee, the committee shall elect a chairperson from among the members to preside over subsequent meetings.

Then the chairperson shall schedule a hearing at the earliest convenient time when all affected parties can be present.

3. A quorum consists of a minimum of four members of the committee except as provided by Section 390.010 E.4.

4. The grievance committee shall invite the grievant and the responding person to all hearings. Attendance at the hearings shall be limited to persons who have an official connection with the case as determined by the chairperson. The grievant and the responding person may choose to be accompanied by an adviser. Others whose participation in the hearing is considered essential in order to assist the committee in establishing the facts of the case shall appear before the committee only long enough to give testimony and to answer questions of committee members.

5. It is within the duties and responsibilities of all members of a grievance committee to commit themselves to observe procedures consistent with fairness to all parties concerned. For example, it is a matter of principle that members of the grievance committee will not discuss a case with anyone outside of the hearing process and that their finding will not be influenced by anything other than the evidence presented to them in meetings in which all affected parties are present.

6. The grievance committee shall set forth the rules of procedure for the hearing within the guidelines set forth herein. The chairperson may, for good cause and with the concurrence of a majority of the entire committee, authorize deviation from the suggested format, in which case the principal parties shall be notified.
a. The grievant shall be heard first in all phases of a grievance hearing and shall be primarily responsible for the presentation of his/her position.
b. The adviser of the grievant or respondent may advise that person and may briefly explain his or her position but shall not be permitted to testify or to cross-examine.
c. A reasonable time limit should be established for opening and closing statements and shall be announced prior to the hearing.
d. Length of hearing sessions may be established in advance; every effort should be made to conduct the hearing as expeditiously as possible, with equal fairness to both parties.
e. The interested parties shall provide the chairperson with the names of the adviser and potential witnesses at least forty-eight (48) hours prior to the hearing. It is the responsibility of the interested party, working with the chairperson, to ensure the presence of these individuals in a timely manner.
f. After initial witnesses for both parties have been heard, such witnesses may be recalled for additional questioning if requested by either party or the grievance committee. The committee may call new witnesses whose testimony it deems relevant or helpful.
g. In order to promote the truthful, unfettered exchange of information and ideas, all testimony pertaining to the grievance hearing shall be held in confidence.
h. Only evidence relevant to the grievance may be introduced. Questions regarding the admissibility of evidence shall be decided by the chairperson.

7. At any point in the proceedings prior to the time at which the committee reaches its final decision, the grievant may withdraw any portion or all of the grievance with the consent of a majority of the committee members and of the respondent. In all cases of withdrawal at the consent of the committee and of the respondent, the grievant shall not have the privilege of reopening the same grievance at any time in the future. In the event that the student refuses to participate further in the committee hearing, the committee may choose to continue the case or to move to closure with an appropriate closing statement as per Section 390.010 F.9.

8. A confidential tape recording of the grievance hearing shall be made and will be accessible to the parties involved, the committee, the Appropriate Administrative Officer, the Chancellor, the President, members of the Board of Curators and authorized representatives on a need-to-know basis. Either party to the grievance may request that the committee provide a written transcript of testimony. The cost of preparation of such a transcript is to be paid by the party making such request unless Section 390.010 B.4 is applicable. After the report of the grievance committee has been prepared, the tapes and relevant materials will be sealed and filed in the Appropriate Administrative Office. Unless extraordinary circumstances apply, these materials will be destroyed at the end of five years.

9. At the conclusion of the grievance hearing, the members of the grievance committee shall meet in closed session to deliberate upon their findings. A majority vote of the entire committee shall be required on all decisions. The grievance committee shall make a written report on findings and recommendations to the Appropriate Administrative Officer of the university, with copies to the grievant(s) and the responding person(s). The written report will contain:
a. A statement of the purpose of the hearing,
b. Issues considered,
c. A summary of the testimony and other evidence presented, **d.** Findings of fact as developed at the hearing, and
e. Recommendations for final disposition of the case.

10. The Appropriate Administrative Officer will make his/her decision. This decision and the actions that have

been taken shall be presented to both parties in writing. If the administrative officer does not accept the recommendations of the grievance committee, a written statement of the reasons for so ruling must be given to both parties and to the chairperson of the committee.

11. If requested by the grievant or the responding party, normally within seven (7) calendar days of the notification of the decision, the decision of the Appropriate Administrative Officer may be subject to a review of the records by the Chancellor. Any review and decision by the Chancellor shall be made normally within thirty (30) calendar days. The decision of the Chancellor can be appealed to the President, who shall have thirty (30) calendar days in which to make a decision, which shall be final.

12. Grievances shall receive prompt attention. The hearing and the report of the grievance committee shall normally be completed within sixty (60) calendar days of the formation of the grievance committee, and a final decision shall be made by the Appropriate Administrative Officer normally within ten (10) calendar days thereafter. In any case in which these time schedules should prove to be inadequate, the committee shall present, in writing, an amended time schedule to all parties involved.

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