1997

Western Michigan University Undergraduate Catalog 1997-1999

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Western Michigan University

Undergraduate Catalog
Kalamazoo, Michigan
1997 • 1999

Western Michigan University is located in Kalamazoo, midway between Chicago and Detroit. Three major highways, Amtrak, commercial airlines, and numerous bus routes connect the city with other midwestern cities. The population of Kalamazoo is 81,000. Kalamazoo County has a population of 227,000.

The provisions of this catalog, any other catalog, policy, rules, codes, guidelines, or information issued by the University (collectively "requirements") shall not be considered to be a contractual or otherwise binding obligation of the University. The University reserves the right to change, delete, or add to requirements at any time without prior notice. Such changes may include, but not be limited to, modification or discontinuance of programs, as well as modification or discontinuance of specific courses. In the event such action is taken, students affected will be advised by their units of the options available to them to complete their degrees. The University will assist students in finding alternate ways to complete programs or course work which is as compatible as possible with that which was altered or discontinued. The University further reserves all rights regarding the dismissal, suspension, withdrawal, denials of requests or applications, and impositions on records of students, at all times.

Western Michigan University requires that all students demonstrate skills in reading, writing, mathematics, and computer literacy deemed appropriate and sufficient by the University before the awarding of any degree. These requirements may be met, at the discretion of the University, through regular courses of study or special testing.

Western Michigan University retains the right to rescind any WMU degree which was obtained improperly, including but not limited to as a result of misrepresentations or false information and/or in violation of University requirements. Before making any final decision to rescind a degree, however, the University will afford the student with an opportunity to be heard in accordance with University requirements in effect at the time of the discovery of the alleged offense.

HOW TO READ THIS CATALOG

This catalog begins with general information about Western and being a student here. This material is organized based on the following themes:

- Admission Policies and Procedures
- Student Fees
- Financial Assistance and Scholarships
- Academic Policies and Procedures
- Registration, Records, and Regulations
- Services for Students
- University Services
- Student Rights and Responsibilities
- Degrees and Curricula

The remaining information covers academic programs and courses; it is organized by academic colleges and departments. The table of contents in the front of the catalog, the glossary that follows, and the index at the end will help you locate and understand specific information.

Above all, when you have questions regarding this catalog or some other aspect of life at Western Michigan University, be sure to ask for a clarification from your academic advisor or from the department involved.
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## General Information

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- Chemical Engineering (CHEM)
- Chinese (CHIN)
- Communication (COM)
- Computer Science (CS)
- Education and Professional Development (ED)
- Electrical and Computer Engineering (ECE)
- Employee Assistance Programs (EAP)
- Engineering and Applied Sciences (College of) (ENGR)
- Environmental Studies (ENV)
- Environmental Studies and Sustainability (ENVS)
- Fine Arts (ART)
- French (FREN)
- German (GER)
- Gerontology (GRI)
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- Health and Human Services (HHS)
- History (HIST)
- Holistic Health Care (HOL)
- Honors (HPRS)
- Industrial and Manufacturing Engineering (IME)
- Japanese (JPNS)
- Journalism (JRN)
- Latin (LAT)
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Glossary of Terms

Academic advisor
A faculty or professional staff member trained to help students select courses and plan programs.

Academic dismissal
Dismissal from a college or program for not maintaining the required grade point average (GPA). Dismissal indicates that a student is no longer a member of the University community.

Advanced placement
Credit granted for examination programs or for transfer work.

Audit
Registering for and attending class(es) regularly without being held responsible for the work required for credit. Not eligible to sit for examinations. No credit hours are earned, and full tuition must be paid. The grade "AU" appears on the record.

Baccalaureate-level writing requirement
An upper-division requirement for all students. Each academic department designates courses to fulfill this requirement.

Bachelor’s degree
A degree granted after completing a specified amount of academic study beyond the completion of high school and fulfilling all graduation requirements.

Board
A term used for the meal plan (as in, room and board) at the University.

Class load
The number of credit hours carried by a student each semester or session. A first semester freshman may not enroll for more than eighteen hours of work except by special permission, which is seldom granted unless the curriculum demands it. This regulation applies to total credit for work taken by extension or in some other institution, in addition to credit earned in residence at Western. The normal maximum load for the spring or summer session is nine hours.

Class standing
A classification based on the number of credit hours earned which indicates the level of a student.

Freshman
A student credited with 0-25 hours inclusive.

Sophomore
A student credited with 26-55 hours inclusive.

Junior
A student credited with 56-87 hours inclusive.

Senior
A student credited with 88 or more hours.

Cognate
A course related to the courses in a major program or to a degree requirement.

College
An administrative division of the University housing one or more academic departments or schools.

College-level writing requirement
A lower-division writing requirement for all students. On the basis of test scores a basic writing course may be required as a prerequisite.

Computer usage requirement
A requirement that all students demonstrate computer literacy by course, test, or program.

Continuing education unit
Recognition for participation in a non-credit program or workshop.

Corequisite
A course that must be taken at the same time as another course.

Course numbering system
The course numbering system is limited to three digits. The first digit indicates the level of work. The second digit indicates an area of study within the series or level. The third digit indicates the specific course number in each area and each series. Undergraduate courses are numbered from 000 through 499. Graduate courses are numbered 600 through 799. Courses numbered 800 through 999 are for graduate and advanced undergraduate students.

Course Numbers
Levels
0- 99 Non-credit courses
100- 199 Terminal course credit that may not be applied toward degree programs
200- 299 Courses primarily for Sophomores
300- 399 Courses primarily for Juniors and Seniors
400- 499 Courses primarily for Seniors
500- 599 Courses for graduate students and advanced undergraduate students
600- 699 Courses for graduate students only
700- 799 Graduate seminars, theses, independent research, etc.

Credit/no credit
A method used to evaluate performance in courses which does not have to be repaid; usually based on need.

Credit
A course which will count as credit toward a degree but is not a specific program requirement.

Degree student
A student who has been admitted to a degree category and is seeking a bachelor's, master's, or doctoral degree in a planned course of study.

Distribution requirement
A General Education requirement. Each undergraduate candidate must complete at least one course in each of eight (8) distribution areas: fine arts; humanities; United States: Cultures and Issues; other cultures and civilizations; social and behavioral sciences; natural science with lab; natural science and technology; health and well-being.

Elective
A course which will count as credit toward a degree but is not a specific program requirement.

Emphasis
A designated group of courses within a major program.

Full-time student
An undergraduate student who enrolls for twelve credit hours during Fall or Winter or for six credit hours during Spring or Summer. The University does allow full-time status to some co-op and intern classes, when it is the only class allowed a student during a semester or session.

University Housing has its own regulations on the definition of hours needed to be eligible for housing contracts. Students should contact the University Housing Office for this information.

Good standing
A designation that signifies that a student is eligible to continue, to return, or to transfer elsewhere. It implies good academic standing; that is, an overall GPA of 2.00 or better.

Graduate
A faculty or professional staff member trained to help students select courses and plan programs.

Grant
Financial assistance awarded to a student which does not have to be repaid; usually based on need.

Good standing
A term used for the meal plan (as in, room and board) at the University.

Grants
A complete program of studies, as defined by a college, leading to a baccalaureate (undergraduate) degree.

Deadline
The date by which certain information must be received by any given office or unit.

Dean's list
A public announcement at the end of fall and winter semesters listing students who have achieved a specified grade point average (GPA) or level of achievement established by the University.

Degree student
A student who has been admitted to a degree category and is seeking a bachelor's, master's, or doctoral degree in a planned course of study.

Distribution requirement
A General Education requirement. Each undergraduate candidate must complete at least one course in each of eight (8) distribution areas: fine arts; humanities; United States: Cultures and Issues; other cultures and civilizations; social and behavioral sciences; natural science with lab; natural science and technology; health and well-being.

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The above definitions are Western Michigan University regulations and may or may not be accepted by other agencies.

Good standing
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Grade point
The numerical value given to letter grades. For example an "A" is equivalent to 4 points per semester hour, a "B" to 3.5 points, a "C" to 3 points and so on. No points are earned for an "F" grade. Also referred to as "honor points."

Grade point average (GPA)
A student's scholastic average computed by dividing total grade or honor points by total credit hours attempted.

Grant
Financial assistance awarded to a student which does not have to be repaid; usually based on need.

Academic dismissal
Dismissal from a college or program for not maintaining the required grade point average (GPA). Dismissal indicates that a student is no longer a member of the University community.

Advanced placement
Credit granted for examination programs or for transfer work.

Audit
Registering for and attending class(es) regularly without being held responsible for the work required for credit. Not eligible to sit for examinations. No credit hours are earned, and full tuition must be paid. The grade "AU" appears on the record.

Baccalaureate-level writing requirement
An upper-division requirement for all students. Each academic department designates courses to fulfill this requirement.

Bachelor's degree
A degree granted after completing a specified amount of academic study beyond the completion of high school and fulfilling all graduation requirements.

Board
A term used for the meal plan (as in, room and board) at the University.

Class load
The number of credit hours carried by a student each semester or session. A first semester freshman may not enroll for more than eighteen hours of work except by special permission, which is seldom granted unless the curriculum demands it. This regulation applies to total credit for work taken by extension or in some other institution, in addition to credit earned in residence at Western. The normal maximum load for the spring or summer session is nine hours.

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An administrative division of the University housing one or more academic departments or schools.

College-level writing requirement
A lower-division writing requirement for all students. On the basis of test scores a basic writing course may be required as a prerequisite.

Computer usage requirement
A requirement that all students demonstrate computer literacy by course, test, or program.

Continuing education unit
Recognition for participation in a non-credit program or workshop.

Corequisite
A course that must be taken at the same time as another course.

Course numbering system
The course numbering system is limited to three digits. The first digit indicates the level of work. The second digit indicates an area of study within the series or level. The third digit indicates the specific course number in each area and each series. Undergraduate courses are numbered from 000 through 499. Graduate courses are numbered 600 through 799. Courses numbered 800 through 999 are for graduate and advanced undergraduate students.

Course Numbers
Levels
0- 99 Non-credit courses
100- 199 Terminal course credit that may not be applied toward degree programs
200- 299 Courses primarily for Sophomores
300- 399 Courses primarily for Juniors and Seniors
400- 499 Courses primarily for Seniors
500- 599 Courses for graduate students and advanced undergraduate students
600- 699 Courses for graduate students only
700- 799 Graduate seminars, theses, independent research, etc.

Credit/no credit
A method used to evaluate performance in courses which does not have to be repaid; usually based on need.

Credit
A course which will count as credit toward a degree but is not a specific program requirement.

Degree student
A student who has been admitted to a degree category and is seeking a bachelor's, master's, or doctoral degree in a planned course of study.

Distribution requirement
A General Education requirement. Each undergraduate candidate must complete at least one course in each of eight (8) distribution areas: fine arts; humanities; United States: Cultures and Issues; other cultures and civilizations; social and behavioral sciences; natural science with lab; natural science and technology; health and well-being.

Elective
A course which will count as credit toward a degree but is not a specific program requirement.

Emphasis
A designated group of courses within a major program.

Full-time student
An undergraduate student who enrolls for twelve credit hours during Fall or Winter or for six credit hours during Spring or Summer. The University does allow full-time status to some co-op and intern classes, when it is the only class allowed a student during a semester or session.

University Housing has its own regulations on the definition of hours needed to be eligible for housing contracts. Students should contact the University Housing Office for this information.

The above definitions are Western Michigan University regulations and may or may not be accepted by other agencies.

Good standing
A designation that signifies that a student is eligible to continue, to return, or to transfer elsewhere. It implies good academic standing; that is, an overall GPA of 2.00 or better.

Grade point
The numerical value given to letter grades. For example an "A" is equivalent to 4 points per semester hour, a "B" to 3.5 points, a "C" to 3 points and so on. No points are earned for an "F" grade. Also referred to as "honor points."

Grade point average (GPA)
A student's scholastic average computed by dividing total grade or honor points by total credit hours attempted.

Grant
Financial assistance awarded to a student which does not have to be repaid; usually based on need.
Guest student
A degree student from another college who is taking courses at Western Michigan University for one semester. The credits earned are usually transferred back to the student's home institution.

Hold
A barrier placed on a student's ability to register for classes as a result of an unfulfilled monetary obligation or other action by the University.

Honors
Designation indicated on the college degree and transcript to reflect outstanding scholarship.

Honors College (Lee Honors College)
An academic administrative unit of the University whose mission is to design and foster curricular and co-curricular programs for the academically-talented student.

Honors courses
Special courses offered by Western’s Lee Honors College designed to pose intellectual challenge and give personal attention to particularly able students.

Incomplete
A course grade ("I") granted only if a student is temporarily unable to complete course requirements because of unusual circumstances. Student must be passing the course to be eligible for an "I."

Independent study
A course of study undertaken outside the classroom by a student under the supervision of one or more faculty members.

Intellectual skills requirements
The requirement that all students demonstrate entry-level competency in reading, writing, and mathematics by test or course.

Interdisciplinary
Designating a combination of subject matter from two or more disciplines within a course or program.

Internship
Work in a firm or agency related to a student’s major program and/or career plans. Usually involves earning college credit and may involve receiving payment.

Loan
Financial assistance to students which must be repaid. Low interest loans are available and financial need may or may not be a factor.

Lower division
Courses at the 100–200 level; freshman or sophomore standing.

Major
A concentration of related courses generally consisting of thirty to fifty semester hours of credit.

Michigan residence requirements
The requirements for identifying or establishing permanent residence in Michigan for tuition assessment purposes.

Minor
A concentration of courses generally consisting of a minimum of twenty semester hours of credit.

Non-degree student
A student who has been admitted to a non-degree category and is not currently seeking a bachelor's degree.

Part-time student
An undergraduate student who takes fewer than twelve hours during a semester or fewer than six hours during a session.

Portfolio
A collection of work (e.g., paintings, writings, etc.) which may be used to demonstrate competency in an academic area.

Prerequisite
A requirement, usually the completion of another course, which must be met before a student may register for a course.

Proficiency
A General Education requirement. Each undergraduate candidate must show proficiency in four (4) areas: college-level writing; baccalaureate-level writing; college level mathematics or quantitative reasoning, enhanced proficiency (one of six options).

Readmission
An appeal procedure for a student who has been dismissed or suspended. Consult your college advising office to begin the procedure. Readmission must be sought in the area of intended study.

Re-entry
An enrollment procedure followed by a student who was previously enrolled in good standing at Western Michigan University but whose attendance was interrupted for two consecutive semesters, including the summer session.

Registration
The process of enrolling in and paying tuition and fees for courses each semester or session.

Residence requirement
The requirement that a minimum of 30 semester hour of course work for the bachelor's degree be completed at Western Michigan University. In addition, 10 of the last 30 credits must be completed at WMU.

Scholarship
Financial assistance to students awarded on the basis of academic achievement. Financial need may or may not be a factor.

Self-instructional course
A credit-bearing course designed for the student unable to attend an on-campus class.

Semester
A unit of time, 15 weeks long, in the academic calendar.

Semester hour
The unit of credit is the semester hour; the number of semester hours credit given for a course or from the University. Deadlines for the last day to withdraw from a course without academic penalty (grade of "W" is on the transcript) is noted each semester or session in the Directory of Classes. Students who do not follow the official procedure when withdrawing from a class will earn the grade of "F" for that course; the "X" grade carries no honor points and affects the GPA in the same manner as an "E" or failing grade.

Withdrawal
An official procedure for withdrawing from a course or from the University. Deadlines for the last day to withdraw from a course without academic penalty (grade of "W" is on the transcript) is noted each semester or session in the Directory of Classes. Students who do not follow the official procedure when withdrawing from a class will earn the grade of "F" for that course; the "X" grade carries no honor points and affects the GPA in the same manner as an "E" or failing grade.

Teachable major/minor
A state-approved major/minor program for teacher certification at the secondary and/or elementary level.

Transcript
A copy of a student's permanent academic record at a particular institution.

Transfer credit
Credit earned at another accredited institution and accepted towards a Western Michigan University degree. Grades earned at another institution do not transfer and hence do not affect the WMU GPA.

Transfer credit evaluation
An official statement which indicates the number and type of transfer credits awarded.

Tuition
The amount of money which must be paid for courses based on the number of credits for which the student registers.

Unit of credit
The unit of credit is the semester hour; the number of semester hours credit given for a course generally indicates the number of periods a class meets each week.

Upper division
Classification of students with 56 or more semester hours of credit earned towards a bachelor’s degree; courses at the 300, 400, and 500 levels.

Withdrawal
An official procedure for withdrawing from a course or from the University. Deadlines for the last day to withdraw from a course without academic penalty (grade of "W" is on the transcript) is noted each semester or session in the Directory of Classes. Students who do not follow the official procedure when withdrawing from a class will earn the grade of "F" for that course; the "X" grade carries no honor points and affects the GPA in the same manner as an "E" or failing grade.

Student employment
Part-time jobs made available to students with financial need through federally-funded programs (Work-Study) and to students without need through the Student Employment Office.

GLOSSARY OF TERMS 5
1997–99 Calendar

Fall Semester, 1997
September 2, Tuesday
Advising Day
September 3, Wednesday
Classes Begin
October 17, Friday
Western Spirit Day Recess
October 18, Saturday
Homecoming
November 26, Wednesday
Classes Dismissed at Noon
November 27–28, Thursday and Friday
Thanksgiving Recess
December 1, Monday
Classes Resume
December 15–19
Final Examination Week
December 20, Saturday
Semester Ends—Commencement

Winter Semester, 1998
January 5, Monday
Advising Day
January 6, Tuesday
Classes Begin
January 19, Monday
MLK Day Convocations and Activities
March 2, Monday
Semester Recess
March 9, Monday
Classes Resume
April 20–24
Final Examination Week
April 25, Saturday
Semester Ends—Commencement

Spring Session, 1998
May 4, Monday
Classes Begin
May 25, Monday
Memorial Day Recess
June 24, Wednesday
Session Ends
June 27, Saturday
Commencement

Summer Session, 1998
July 6, Monday
Classes Begin
August 26, Wednesday
Session Ends

Fall Semester, 1998
September 8, Tuesday
Advising Day—Classes Begin 4:00 p.m.
September 9, Wednesday
Classes Begin—Full Schedule
October/November
Western Spirit Day Recess and Homecoming
November 25, Wednesday
Classes Dismissed at Noon
November 26–27, Thursday and Friday
Thanksgiving Recess
November 30, Monday
Classes Resume
December 14–18
Final Examination Week
December 19, Saturday
Semester ends—Commencement

Winter Semester, 1999
January 4, Monday
Advising Day—Classes Begin at 4 p.m.
January 6, Tuesday
Classes Begin—Full Schedule
January 18, Monday
MLK Day Convocation and Activities
March 1, Monday
Semester Recess
March 8, Monday
Classes Resume
April 19–23
Final Examination Week
April 24, Saturday
Semester Ends—Commencement
### Spring Session, 1999
- **May 5, Wednesday**: Classes Begin
- **May 31, Monday**: Memorial Day Recess
- **June 25, Friday**: Session Ends
- **June 26, Saturday**: Commencement

### Summer Session, 1999
- **July 7, Wednesday**: Classes Begin
- **August 27, Friday**: Session Ends

### Fall Session, 1999
- **September 7, Tuesday**: Advising day—Classes begin 4:00 p.m.
- **September 8, Wednesday**: Classes Begin—Full Schedule
- **October / November**: Western Spirit Day recess and Homecoming
- **November 24, Wednesday**: Classes dismissed at Noon
- **November 25-26, Thursday and Friday**: Thanksgiving Recess
- **November 29, Monday**: Classes Resume
- **December 13-17**: Final Exam Week
- **December 18, Saturday**: Semester ends—Commencement

### 1997

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About Western Michigan University

Mission of the University

Western Michigan University has identified five major goals to guide its development during the decade of the 1990s:

1. Offer instructional programs of academic excellence reflecting the high quality of the faculty and students, the depth and breadth of the curriculum and co-curriculum emphasizing personal growth and development, the enhanced facilities and learning resources, and the continuing assessment of learning and the learning process.

2. Increase the graduate enrollment, expand external support for research, facilitate scholarship and creative activity, and reward professional accomplishments of faculty, staff, and students.

3. Assist regional and state economic development through on- and off-campus instruction, applied research centers, and technical assistance to business, industry, government, and the schools.

4. Meet the needs of the citizenry by providing leadership and sponsorship of and participation in cultural events and civic activities.

5. Increase the diversity of the student body, faculty, and staff and enhance the multicultural nature of the University community.

The University provides to students a balanced educational experience, including co-curricular activities that contribute to personal growth and help to develop leadership skills. Student organizations, campus residence hall life, athletic events, multicultural programs, intercollegiate athletics, and intramural activities together with formal academic endeavor constitute the University environment. Western Michigan University has distinctive strengths in its graduate and professional programs based on strong foundations in liberal and general education. The University has attracted and retains an outstanding faculty, and several of its departments have achieved national and international recognition. Faculty and program quality together provide a basis for responding positively to the challenges and opportunities of the future.

The University's commitment to the discovery and dissemination of new knowledge and insight facilitates and rewards faculty and student research, scholarship, and creative activity. The University provides students a lifelong love of learning and a desire for involvement in the world of learning, and to enable students to acquire mastery of a field of inquiry or profession sufficient for an understanding of its methods, its subject matter, and its future in our world.
In 1915 Western Michigan University was placed on the approved list of the North Central Association of Colleges and Secondary Schools. The following year it was approved by the organization which, in time, evolved into the present National Council for Accreditation of Teacher Education. The National Council for Accreditation of Teacher Education has accredited the College of Education which includes the following programs:

• bachelor's programs for preparation in early childhood; elementary, middle and junior high school; secondary education; and special education.

• master's programs in early childhood; reading, teaching in the elementary school; teaching in the middle school; and health, physical education and recreation.

• master's and doctorate programs in counselor education; science education; and special education.

• master's, educational specialist, and doctorate programs in educational leadership.

Programs in the Department of Art are accredited by the National Association of Schools of Art and Design.

Programs in the Haworth College of Business are accredited by the American Assembly of Collegiate Schools of Business.

Programs in the Department of Chemistry are accredited by the American Chemical Society.

The computer science-theory and analysis major in the Department of Computer Science is accredited by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board, Inc.

The baccalaureate programs in aeronautical, computer, electrical, industrial, and mechanical engineering are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The baccalaureate programs in manufacturing engineering technology and engineering graphics and design technology are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology.

The baccalaureate programs in aviation maintenance technology, advanced technology and maintenance management, and aviation flight science are accredited by the Council on Aviation Accreditation.

The dietetics program in the Department of Family and Consumer Sciences is approved by the American Dietetics Association.

In the Department of Counselor Education and Counseling Psychology: school counseling, student affairs, and community agency counseling programs are accredited by the Council for Accreditation of Counseling and Related Educational Programs and the counseling psychology doctoral program is accredited by the American Psychological Association.

Programs in the Department of Dance are accredited by the National Association of Schools of Dance.
For More Information Contact . . .

Western Michigan University
Kalamazoo, MI 49008-3899
University Telephone
616/387-1000
Fax
616/387-0968
Dean of Admissions and Orientation
Including Admissions, University Literature, Credit Acceptance.
Director of Career Services
Including Educational Placement, Arts and Sciences and Fine Arts Placement, Business and Industrial Placement, Health and Human Services Placement.
Dean of the College of Arts and Sciences
Dean of the Haworth College of Business
Dean of the College of Education
Including matters relating to Vocational Education.
Dean of the College of Engineering and Applied Sciences
Dean of the College of Fine Arts
Dean of the College of Health and Human Services
Dean of Continuing Education
Including Off-Campus Courses and Programs, Consultative Services to Schools, Self-Instructional and Telecourse Programs; and Weekend College and Special Programs.
Director of Counseling and Testing Center
Dean of the Graduate College
Dean of The Lee Honors College
Dean of Students
Including Disabled Student Resources and Services, Off-Campus Life, Residence Life, Student Life, Student Judicial Affairs, University Recreation Programs and Facilities.
Director of Off-Campus Life
Executive Director for International Affairs
Registrar
Including Credits, Provisional and Permanent Certification, Transcripts, Records, Allocation
Director of Registration
Including Registration, Course Time Schedules, Student I.D.'s.
Director of Residence Hall Life
Residence Hall Programs, Residence Hall Policies, Residence Hall Staff Hiring and Training.
Director of Student Financial Aid
Including Scholarships, Grants, Loans, and Work-Study Employment.

Office of Student Employment Referral Service
Including Student Work-study Placement, Off- and On-Campus Part-time Employment, Summer Jobs, Internships, Externships, and other career related employment opportunities.

Director of Student Life
Including Campus Programming; Greek Life; Leadership Development Student Organizations; Lesbian, Bisexual and Gay Men's Issues; Women's Resources and Services; Religious Activities; Western Student Association (WSA); Campus Activities Board (CAB); Student Budget Allocation Committee (SBAC); WIDR-FM.

Manager of Residence Hall Facilities
Manager of WMU Apartments
Physical Facilities and Campus Map

EAST CAMPUS
Brink Printing Services (12)—University print shop and duplicating service.
Campus Services Building (22)—Offices for Campus Facility Development, Freight, Postal, and Delivery, Purchasing, and University Stores.
East Hall (01)—Offices for the Library, Archives, Department of Art Faculty, Studios, and Art Gallery.
H.O.I. Building (18)—Landscape Services.
Montague House (19)—Offices of American Association of University Professors.
North Hall (03)—Library storage, Industrial Design, Psychology.
Oakland Recital Hall and Campus Cinema (09)—Presents art, foreign and foreign language films for the University and the community. The Campus Cinema may be rented for various like endeavors. The building features a beautiful lobby entrance, 200 beautifully restored seats, and 16 and 32 mm and video projection capability.
Physical Plant (21)—Physical Plant Department, Trades maintenance shops, grounds crews, University garage, and Transportation Services.
Speech and Hearing Building (05)—Department of Speech Pathology and Audiology.
University Medical and Health Sciences Center (17)—Michigan State University/Kalamazoo Center for Medical Studies, WMU Unified Clinics.
Walwood Union (10)—Harold and Beulah Mackay Alumni Center, WMU Foundation, Department of Public Administration, Medieval Studies, Cistercian Studies, Research and Sponsored Programs, and Legal and Legislative Affairs, Office of Marketing, Public Relations and Communications.
West Hall (04)—Department of Geology Research, Psychology.
E. Wilbur Building (140)—Office of the Department of Nursing, Building Custodial and Support Services.

WEST CAMPUS
John T. Bernhard Center (59)—This facility the campus center for students, faculty, administrators, staff, parents, and community members. It offers a wide variety of services. For dining, the BC Caffeina offers daily luncheon specials and deli-delivery service. Also available are the fast food restaurants in the Bronco Mall. WMU Catering Services offers unique and diversified services to complement small-to-large departmental, business and social functions. The Bernhard Center also houses a computer lab, greeting cards and gifts shop, meeting rooms, ombudsman and dining services offices, computer store, band and Bronco Card Office. A bowling alley, video arcade, billiards room and programming office are located in the Games Area of the Bronco Mall.
Brown Hall (42)—Classrooms for the Departments of Communication, English, and Foreign Languages and Literatures.
Computer Center (29)—University computing Center, which houses all computing operations and staff for academic and administrative computing. Telecommunications, Student Labs (Mac, IBM and UNIX), the Faculty Development Lab, and the Multi-Purpose Enabling Technology Lab (METL).
Dalton Center (82)—Dean, College of Fine Arts. Departments of Music and Dance, Music and Dance library and classrooms.
Dunham Hall (63)—Classrooms for the Departments of Comparative Religion, History, Economics. Computer Science, Philosophy, and Political Science. Offices and facilities of the Department of Television Services.
Ellsworth Hall (58)—Offices for Career Services, Continuing Education, Evaluation Center, International Student Services, Minority Student Services, Physician Assistant Program, Student Employment Referral Services, and Women's Resources and Services.
Everett Tower (57)—Faculty offices for Departments of Physics, Geology, and Mathematics and Statistics.
Faunce Student Services Building (77)—Offices for the Vice President for Student Affairs, Dean of Students, Counseling and Testing Center, Financial Aid, Disabled Student Resources and Services, Student Judicial Affairs, Off-Campus Life, Residence Hall Life, Student Life, Western Herald/Western Student Association (WSA), WIDR-FM, and selected student organizations.
Fetzer Center (84)—A professional environment for management-oriented conferences, seminars, workshops, training and development programs, and social functions for the University and community.
Friedmann Hall (67)—Offices for dean of College of Arts and Sciences. Faculty offices for Departments of Computer Science, Economics, History, Philosophy, and Political Science. WMUK-FM studios. Women's Studies.
Gilmore Theatre Complex (41)—Offices and classrooms for the Department of Theatre. The University Theatre presents productions in the 600-seat Laura V. Shaw proscenium theatre, the 100-seat Zacch L. York arena theatre and the 270-seat multi-form theatre.
Henry Hall (60)—Offices for the Dean of the College of Health and Human Services. Residence hall.
Hoejke Hall (65)—Temporary offices for Departments of Biological Sciences, Geography, and Occupational Therapy Residences Hall.
Kanley Memorial Chapel (31)—The campus religious center, made possible through a gift from the estate of the late William Kanley, an alumnus.
Knauss Hall (69)—Instructional facility with four lecture halls and exhibit space.
Knollwood Building (39)—Department of Art, ceramic and sculpture studios.
Knollwood Metal Building (34)—Department of Art foundry and kilns.
Lee Honors College (24)—Honors College offices and classrooms.
McCracken Hall (27)—Departments of Chemistry, Paper Science and Engineering, and Biology and Biomedical Sciences.
Miller Auditorium (40)—Cultural center for the performing arts of music, opera, drama, and dance. The auditorium has a capacity of 3,500, with seating arranged on three levels in continental style.
Moore Hall (47)—Offices and classrooms for the School of Social Work, Departments of Anthropology, Comparative Religion, and Philosophy, and the Center for Academic Support Programs.
Oaklands (33)—Home of two former University presidents. Currently used for receptions and official gatherings.
Public Safety Building (51)—Security, Police.
Public Safety Annex (70)—Parking Bureau.
Rood Hall (56)—Classrooms for the Departments of Physics, Geology, Mathematics and Statistics, Computer Science, and Institute of Water Sciences. A 12-million electron volt linear accelerator.
St. Aidan's (86)—The Children's Place Day Care Center offers services to the children of Western Michigan University students, faculty and staff. Business offices are located on the upper level, and the children occupy the lower level, which has a large activity room, gathering area, quiet reading room, and a kitchenette. Directly outside the lower level is a secure playground with a sand box, tricycle riding area and an abundance of green space.
Sangren Hall (38)—Office for the Dean of the College of Education. Faculty offices and classrooms; the Departments of Education, Special Education, Art, Blind Rehabilitation, and Sociology; the Educational Resources Center; and the Reading Center and Ohio.
Schneider Hall (83)—Offices for the dean of the Haworth College of Business. Faculty offices and classrooms for the Departments of Accountancy, Business Information Systems, Finance and Commercial Law, Management, and Marketing.
Seibert Administration Building (32)—University administration offices, offices of Admissions, Registrar and Customer Account Services.

Sindecuse Health Center (55)—Ambulatory care medical center for the University Community, including Urgent Care, Pharmacy, Laboratory, X-ray, Health Resource Center, and Sports Medicine Clinic. Worker's Compensation-ERTW, Substance Abuse, and Employee Assistance Program offices. Nursing, Occupational Therapy, and Physician Assistant Program classrooms and labs.

Sprau Tower (43)—Offices of the Departments of Communication, English, and Foreign Languages and Literatures. Black Americana Studies Program.

Trimpe Building (35)—Classroom and office space for vocational education, Water Resource Management Research Office, and Faculty Senate.

Waldo Library (61)—The library's total collection numbers more than two million bibliographic items, including books, bound periodicals, recordings, maps, documents, and materials in microform. Also located in the building are the University Archives, the Audiolvision Film Library, and Visually Handicapped Reading Services.

Wood Hall (36)—Currently closed for renovation. Wood Hall will re-open in the Fall of 1998 and house offices, classrooms, and labs for the Departments of Biological Science, Chemistry, Geology, Geography, Psychology and Science Studies. The attached Science Pavilion will open in the Fall of 1999 and house research labs for the sciences.

OFF-CAMPUS

Aviation Building—Department of Aeronautical Engineering, shops, laboratories, and classroom for aircraft design.

Aviation Administration and Flight Operations (180)—Located in the newly renovated W.K. Kellogg Airport Terminal in Battle Creek. Facility houses administrative offices, flight planning, dispatch and briefing/briefing rooms.

Aviation Education Center (181)—Located in Battle Creek adjacent to the Administration and Flight Operations Building. New 16,000 square foot facility includes classrooms, simulator lab, library, faculty offices, conference room and testing room.

Aviation Maintenance Building (182)—Located in Battle Creek on the School of Aviation Sciences campus; along with the existing hangar, the facility includes a maintenance hangar, six (6) test cells, electrical lab, hydraulic lab, airframe lab, and power plant lab.

Kleinstuch Nature Preserve—Given in 1922 by Mrs. Caroline Hubbard Kleinstuch, this fifty-acre tract near the campus and inside the city of Kalamazoo provides instructional space for biological sciences.

ATHLETIC FACILITIES

Bowling Alley—Twenty bowling lanes available in the Bernhard Center (59) for physical education classes and recreation.

Ebert Softball Field (103)—A collegiate softball field immediately adjacent to Hyames Field.

Gabel Natatorium (53)—Facilities include a swimming pool 120 feet by 50 feet, seating capacity of 400, movable bulkhead, two one-meter and one three-meter diving boards, classrooms, locker facilities, staff offices.

Goldsworthy Valley Soccer Field (104)—Regulation soccer field with natural turf and spectator seating.

Hyames Field (16)—A collegiate baseball field with seating for 2,500 immediately adjacent to Ebert Softball Field.

Intramural Fields (180)—Located in the newly renovated W.K. Kellogg Airport Terminal in Battle Creek. Facility houses administrative offices, flight planning, dispatch and briefing/briefing rooms.

Kanley Field (50)—A running track with all-weather surface. Includes a regular field hockey and field events course on the infield.

Lawson Ice Arena (53)—Facilities include a regular hockey rink, 85 feet by 200 feet; seating capacity of 4,300; four one-wall handball courts, weight room; and dressing rooms for women and men.

Oakland Gymnasium (96)—Located on the East Campus, this building houses the Department of Military Science (ROTC).

Read Fieldhouse/University Arena (62)—Provides indoor facilities for intercollegiate athletic programs in basketball, gymnastics, volleyball, and track. The University Arena has a seating capacity of 5,800.

Sorenson Tennis Courts (102)—Twenty asphalt courts in the Elsworth Hall-Goldsworthy Valley area accommodate physical education classes, intramural and recreational sports, and the intercollegiate tennis program.

Student Recreation Center (49)—Eight basketball courts, eight badminton courts, two tennis courts, seven volleyball courts, one climbing wall, jogging track, swimming pool with "swirl" pool, two floor hockey courts, two indoor soccer areas, weight and fitness rooms, golf driving range area, baseball and softball infield areas, two batting cages, an archery range, three aerobics rooms, ten racquetball courts. Offices for the Department of Health, Physical Education, and Recreation, and University Recreation Programs and Facilities.

Waldo Stadium (15)—An intercollegiate football stadium with seating for 30,000. It is used for recreation, intramural activities, and instruction, in addition to competitive athletics.

WMU Soccer Complex—Located adjacent to the campus on Parkview Avenue. Includes one (1) regulation competition field and two (2) practice fields.
ADMISSION POLICIES AND PROCEDURES

Admission Policies
Western Michigan University admits students whose educational backgrounds indicate a high probability for success in college work. In reviewing applications from prospective freshmen, the University will give primary consideration to high school grades in college preparatory subjects, mix of college prep courses, scores on the SAT/ACT, and trend of grades throughout high school. To give each student with evidence of probability for success the fullest possible consideration, seventh and/or eighth semester high school senior year transcripts may be required, an admission interview may be requested, and/or individual attributes and special abilities may be considered.

Freshmen applicants are expected to complete the Presidents Council of Michigan Public Universities Requirements. These include four units of English, three of math (including intermediate algebra), three of social studies, and two of natural sciences. Students who are fully admissible under other requirements may still be admitted with deficiencies in Presidents Council Requirements. Academic advisors will assist students in completing the deficiencies with regular University courses during their first semester at WMU.

Offers of admission made to students still in high school are conditional pending graduation from high school and the University’s review of final senior year grades. Poor performance may result in a change of admission status or withdrawal of the offer.

In reviewing applications from prospective transfer students, the University will make decisions on the basis of previous college work (and high school grades if fewer than twenty-six semester hours will be transferred). At least a “C” average in transferable work would be required for initial consideration.

Offers of admission made to students currently enrolled in another college or university are conditional pending successful completion of work in progress. Poor performance may result in a change in admission status or withdrawal of the offer.

The University recognizes the need for educational opportunities for people of widely varying ages and backgrounds. Therefore, special admission programs are available for students who demonstrate potential to be academically successful at the University. In addition, the University provides access to adults who are returning to school after a considerable absence.

Admission to Western Michigan University is non-discriminatory.

ADVANCED PLACEMENT PROGRAM (APP)
The Advanced Placement Program (APP) at Western Michigan University provides the opportunity for students to earn college credit while still in high school. Complete information on APP awards at Western is found in the Registration, Records, and Regulations section of this catalog.

COLLEGE LEVEL EXAMINATION PROGRAM (CLEP)
CLEP provides the opportunity for students to earn college credit by examination for learning gained through personal reading, job experience, or other types of noncredit study. Complete information on Western’s participation in CLEP is found in the Registrar’s Records, and Regulations section of this catalog.

Admission Procedures

Regular Degree Bound Students

FRESHMEN
To be considered for freshman admission, with no previous college work, students should:
1. Submit an application (available from high school counselors or the WMU Office of Admissions and Orientation) with a nonrefundable $25 application fee;
2. Have their high school send an official copy of their transcript directly to the Office of Admissions and Orientation (transcripts brought or sent by students cannot be accepted as official);
3. Make arrangements to take the examinations of the American College Testing (ACT) Program with results sent directly to Western Michigan University (ACT College Code 2066). (Note: Students with superior ACT scores may apply through a simplified process. Details will be sent to those who are eligible); and
4. For those who have completed a General Educational Development (GED) Test, submit official GED scores as well as a high school transcript.

Students whose native language is not English will be required to demonstrate proficiency in the English Language prior to enrollment at Western Michigan University. See International Students in this section.

When to apply
Students should submit applications for fall semester during the fall preceding their enrollment (high school students may apply for freshman admission after completion of the junior year). Application by January 1 ensures full consideration for scholarships, financial aid, Honors College admission, housing, and orientation. Transfer students should apply in January for the fall semester, in September for the winter semester, and in December for the spring and summer sessions.

Admission interviews
In order to make the best possible decision for an individual student, an admissions officer may require a personal interview to clarify or explain parts of the application materials.

Campus visits
The University recommends that every student make a campus visit to help with college decision making. The Office of Admissions and Orientation offers three visit options: Western Fridays on selected dates throughout the academic year with a general session, meetings with college representatives, a campus tour, and lunch in a residence hall; Saturday Views on selected dates during the academic year with a general session, tour of campus, and lunch in a residence hall; and daily campus tours. Students are encouraged to make an appointment with an admissions counselor and/or an advisor during any of these visit options. Students should arrange campus visits with the Campus Visit Coordinator at least ten days in advance.

Notification of status
The University notifies freshman applicants of their admission status on a rolling basis. When all materials are on file and the Admissions Committee acts, students will receive written notice. The decision may be to admit, to request additional grades, test scores, or an interview; or to ask the applicant to begin another college and transfer to the University after establishing a successful college record.

Admission of students to freshman status while they are still in high school is conditional upon their graduation from high school and the University’s review of their final grades. Poor performance in the senior year may cause a change in admission status or withdrawal of the admissions offer.

Orientation
All first-time freshmen are required to attend a University Orientation session. Two and one half day programs include placement testing, advising, course selection, meetings with various campus services, and registration for classes. Orientation Student Leaders, upperclass WMU students, assist freshmen to make friends and feel comfortable on the campus as well as to plan for a successful academic transition from high school to college. Orientation sessions for parents are held in conjunction with freshman sessions. Information is sent automatically to all admitted students.

TRANSFERS
To be considered for admission as a transfer from another college or university, students should:
1. Submit an application (available from community college counseling offices or the WMU Office of Admissions and Orientation) with a $25 nonrefundable application fee;
2. Request that each college attended send an official transcript directly to the Office of Admissions and Orientation at WMU (transcripts brought or sent by the student cannot be accepted as official). Failure to report all colleges attended will invalidate the application and may result in dismissal if admitted. Transfer credit will not be
enrollment at Western; and
3. If transferring fewer than twenty-six college semester hours, submit a high school transcript.

Prospective transfer students whose native language is not English will be required to demonstrate proficiency in the English language prior to enrollment in the University. For details see International Students in this section.

When to apply
Transfer students applying for fall semester should apply before March 1 for fullest consideration.

Office of Admissions and Orientation, 1
information elsewhere in this catalog.

requirements. Credit earned by examination
work transferring to WMU. "D" grades may not
the transfer institution was at least a 2.0 for
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When to apply
Transfer students applying for fall semester should apply before March 1 for fullest consideration.
Students' grades and progress are reviewed by the Alpha coordinator before the end of each semester. All students who have met the contract conditions will be permitted to continue in the Program. If contract stipulations are met, students are eligible to continue their college work in good standing.

THE MARTIN LUTHER KING, JR., PROGRAM

The Martin Luther King, Jr., Program is a probationary student development program that has been in existence at WMU since 1968. Named in honor of the late Dr. King, this particular program has the distinction of being the forerunner of similar programs throughout the United States. Designed to encourage students to pursue a college education, the original program provided scholarships and remedial help through a Kellogg Foundation grant. In its present form it is a year-round program, beginning in the freshman year, which seeks to:

1. Encourage students who have the academic potential to be successful in college.
2. Provide supportive services—such as academic advising, vocational and personal counseling, tutoring, and testing—to meet each individual's needs; and
3. Support students through completion of thirty-six credit hours at the University.

Interested students should apply through the regular University admission process for freshman students (a counselor, caseworker, minister, or other person familiar with the family's circumstances may request an application waiver). The Office of Admissions and Orientation will notify students eligible for consideration, and the program representative will arrange a personal, on-campus session to help in making admission decisions.

Students selected for admission, and their parents/guardians, must:

1. Sign and return a contract accepting terms of the program, and
2. Complete and mail all financial aid forms.

Program students begin in WMU's fall session. Enrollment allows students to make better adjusted to college and improves the transition from high school. Each student is assigned a peer counselor, a graduate or upperclass student who functions as friend, student evaluator, liaison, and resource person. The counselors and the full-time administrative staff work in conjunction with other University departments to provide personal attention and supportive services.

The MLK Program does not offer any direct financial assistance to its participants. All WMU students interested in financial assistance must apply through the Office of Student Financial Aid and Scholarships. Awards are made on the basis of need as determined through the applications.

GOLD PROGRAM

A voluntary support program for selected, regularly admitted, freshmen, the Gold Program provides students with:

- Admission to University Curriculum;
- A personal advisor;
- Enrollment in UNIV 101 Freshman Seminar;
- Tutorial services;
- Interest assessment to help with selection of a major;
- Exploration of career options; and
- Individualized course plans for freshman year studies.

Eligible students will receive an invitation to enter the Gold Program after admission to the University. Gold advisors will assist students at Orientation.

Nontraditional Admission Programs

PERMISSION TO TAKE CLASSES

Students whose education has been interrupted by a period of five years may wish to apply for nondegree Permission to Take Classes (PTC) status. Students applying for this status:

1. Should complete a regular application for admission and indicate PTC for program choice;
2. Will be admitted to nondegree status if they have not attended any school or college for at least five years;
3. May register for any course for which the prerequisites have been met. PTC students generally will take only two courses per semester; and
4. May enroll in subsequent terms for up to a total of 26 credits in nondegree status, providing they meet University probation and dismissal standards (see Academic Standards, the Registration, Records, and Regulations section of this catalog).

Students in this PTC status may apply for degree admission after they have completed at least fifteen semester hours with a 2.0 grade point average. Admission to the degree program will be determined by review of performance in Western Michigan University courses. Students who have attended another school or college within the past five years may apply for this PTC status, but must also submit transcripts from all colleges and universities attended (and high school if they have completed fewer than 26 transferable college credits or have not attended any college).

Admission to PTC status would be determined by review under the same standards used for degree admission. Students admitted through this review would be eligible to enroll in courses for which prerequisites have been met and could enroll in courses for up to a total of 26 hours, providing they remain in good academic standing. Students admitted in this way would also be able to change to degree status at any time, providing they were in good standing at WMU.

Certain University courses and financial aid may not be available to PTC students. Acceptance to PTC status does not constitute admission to a degree program at Western Michigan University.

GUEST STUDENTS

Students who are currently in attendance and eligible to return to a college of university in good standing (at least a 2.0 grade point average) at another college or university may apply to Western Michigan University to take classes as a guest student. Guests should work with their home institution in advance to determine the appropriate classes to be taken at WMU. Guest admission does not constitute degree admission to WMU. Guest applications are available from the Office of Admissions and Orientation or the Office of the Registrar at all Michigan colleges and universities.

HIGHER SCHOOL GUESTS

Students who wish to take courses at the University while still in high school should submit a regular application and a High School Guest Request Form (available from the Office of Admissions and Orientation). Seniors with at least a 3.25 high school grade point average will normally be admitted. Younger students with an outstanding record will be considered for enrollment on a case by case basis. In either instance, admission is as a guest student and does not constitute degree admission. Students who wish to apply for degree admission must be considered under regular admission standards.

PROJECT SCOPE (Senior Citizens' Opportunity Program in Education)

Persons 62 years of age and older may enroll in some University classes on a seats available basis without charge, under these guidelines:

1. Students should apply as a Senior Citizen under the regular admission process on the day before classes begin (the application fee will be waived). No student is required to declare himself or herself a Senior Citizen student unless seeking enrollment without charge;
2. As soon as the application is processed, students may complete regular registration, without charge;
3. Students must register their vehicles and pay for a student parking sticker or use metered parking.

All eligible students registering under Project SCOPE will be listed on official class rolls, will receive a grade, and will have all academic work recorded on a permanent student record.

Readmission

Students who make an initial enrollment at Western but do not return the following semester/term will have one year's valid admission status in which to reenroll, providing they left in good standing and have not attended another college since leaving WMU. After one year, students in good standing and with no college work since leaving WMU may reactivate their admission status by completing a readmission form.

Students who leave the University in good standing and subsequently take additional college work must complete a readmission form and have official transcripts sent from each institution attended. The readmission decision will be made under existing transfer admission standards.

Dismissed students applying for readmission must complete a readmission application and obtain an authorized college advisor's approval for readmission. University students who have been dismissed will normally not be readmitted for at least one fifteen week semester. The University will require evidence that the causes of past academic problems have been removed before approving readmission.

Forgiveness policy

WMU students who apply for readmission as undergraduates after at least ten years out of higher education will be readmitted through the Office of Admissions and Orientation. They may also apply, through the Office of the Registrar, to the transfer program at Western Michigan University. Students who have attended another school or college during the past five years may apply for nondegree Permission to Take Classes. Admission to PTC status would be determined by review under the same standards used for degree admission. Students admitted in this way would also be able to change to degree status at any time, providing they were in good standing at WMU. Guests should work with their home institution in advance to determine the appropriate classes to be taken at WMU.

FORGIVENESS policy

WMU students who apply for readmission as undergraduates after at least ten years out of higher education will be readmitted through the Office of Admissions and Orientation. They may also apply, through the Office of the Registrar, to the transfer program at Western Michigan University. Students who have attended another school or college during the past five years may apply for nondegree Permission to Take Classes. Admission to PTC status would be determined by review under the same standards used for degree admission. Students admitted in this way would also be able to change to degree status at any time, providing they were in good standing at WMU.
STUDENT FEES

FEES

ADMISSION VALIDATION DEPOSIT
(Entering Students) A $50 deposit applicable to fall student fees is required for all admitted beginner, transfer, and former students. The deposit must be paid by May 1 for those admitted before that date, and upon admission for those admitted after that date. The deposit is not refundable after May 1. Detailed information is provided on the Certificate of Admission from the Office of Admissions and Orientation.

APPLICATION FEE
A non-refundable fee of $25 must accompany each application for admission.

AUDIT FEES
Auditors (students who register for classes but do not desire credit) are governed by the same regulations as students desiring credit.

ENROLLMENT FEE
For all students registered in on-campus courses, the enrollment fee incorporates all required fees with the exception of the student organizations' assessment fee into a single per capita assessment. The enrollment fee for students registered in on-campus classes is as follows:

- **Full-time**
  - Fall and Winter: $289.00
  - Spring and Summer: $114.20
- **Part-Time**
  - Fall and Winter: $120.00
  - Spring and Summer: $60.00

Full-time students are defined as those enrolled for 7 or more credit hours per semester or 4 or more credit hours per session.

FLIGHT INSTRUCTION
Based on the courses taken, fees range from $690 to $9,000 per course. For specific course fee information, consult the School of Aviation Sciences.

GRADUATION FEE
A graduation fee of $30 is due and payable at the time a student applies for graduation with the Registrar's Office.

LATE REGISTRATION FEE
A late registration fee of $50.00 is assessed to each new on-campus registrant starting at 12:01 a.m. the third day of classes. This fee does not apply to those students completing drop-add procedures, only to students who did not register prior to the first day of classes. This fee is a charge for special handling required. It is not refundable.

LATE ADD FEE
A late add fee is assessed for each class for which the student is allowed to register after the close of the drop/add period for that term. This fee is a charge for special handling required. It is not refundable.

RESIDENCE HALL ROOM AND DINING
Cost of room and dining in 1997-98 for 20 meals per week is $2,179* for fall semester and $2,219* for winter semester, per student; for 15 meals per week it is $2,160* for fall semester and $2,182* for winter semester, per student; for 10 meals per week it is $1,923* for fall semester and $1,947* for winter semester, per student. The rate for room only is $912* for the fall semester and $903* for the winter semester, per student. A first payment of $400 to be applied toward room and dining payment will be required with the signed contract before a housing assignment is made. Note: Includes $25 deferred maintenance fee and $8 program development fee. Room and dining rates are reviewed annually by the Board of Trustees and as of this printing are not yet determined for 1998-99.

All prices quoted are on the basis of two or more students per room. Due to the unsettled condition of prices for food, labor, and utility, the University reserves the right to increase the charge during the year if, in its opinion, such an increase is necessary.

NEWLY ADMITTED STUDENTS
For all students registered in on-campus courses, the enrollment fee incorporates all required fees with the exception of the student organizations' assessment fee into a single per capita assessment. The enrollment fee for students registered in on-campus classes is as follows:

- **Full-time**
  - Fall and Winter: $289.00
  - Spring and Summer: $114.20
- **Part-Time**
  - Fall and Winter: $120.00
  - Spring and Summer: $60.00

Full-time students are defined as those enrolled for 7 or more credit hours per semester or 4 or more credit hours per session.

STUDENT ASSESSMENT FEE
A student assessment fee (SAF) of $8.00 per semester and $4.00 per session will be collected from all graduate and undergraduate students at the time of registration. This assessment is for the support of student organizations and agencies. The student organizations and agencies use this money to enhance the out-of-classroom experience on campus. The following is a sample of the programs funded in previous years: Bronco Bash, Homecoming, College Bowl, Miller Movies, Bernie's Afterhours, Bernhard Center Center Stage, lectures, etc.

TUITION AND FEES
Student fees are assessed on a credit hour basis. See Fee Revisions. Fees per credit hour for 1997-98 are listed below.

- **Resident Undergraduate—Lower Division**
  - Fall Semester: $98.75
  - Spring Semester: $110.95
- **Resident Graduate**
  - Fall Semester: $141.75
  - Spring Semester: $141.75
- **Non-Resident Undergraduate—Lower Division**
  - Fall Semester: $250.65
  - Spring Semester: $291.75
- **Non-Resident Graduate**
  - Fall Semester: $344.60
  - Spring Semester: $344.60

Those undergraduate students who have not completed fifty-six credit hours by the start of each semester/session will be classified Lower Division. Those undergraduate students who have completed fifty-six credit hours will be classified as Upper Division.

 Fee Revisions
Fees and costs pertain to the 1997–98 academic year, except as noted, and are subject to change by action of the Board of Trustees. Questions concerning current fee schedules should be directed to the Office of the Director of Accounting Services.

Complete Withdrawal From All Courses
Students completing withdrawal from all classes must enter this information into the touchtone registration system by the close of drop/add days in order to process their withdrawal and assure a 100 percent refund. Students who find it impossible to be on campus to process a complete withdrawal and do not have access to touchtone phones may write to the Registrar's office, Room 3210 Seibert Administration Building, for aid in processing their withdrawal. All written requests for complete withdrawal must bear the appropriate postmark date for consideration of any refund (see Refund Policies).

Refund Schedule
FOR COMPLETE WITHDRAWAL OF ALL COURSES
The Directory of Classes (class schedule) for the appropriate semester/session should be consulted for the refund policy that pertains to complete withdrawal.

Note: The withdrawal date for refund purposes will normally be determined by the date that the Registrar receives a Change of Enrollment Request form or an Appeal to Withdraw form.

FLIGHT INSTRUCTION FEES
Refund of flight instruction fees will be made in accordance with the policy established by the School of Aviation Sciences.

Refunds
STUDENT FEES
Changes in student credit hour load prior to the end of the final day for adding a course are considered to be reassessments, and a refund will be granted, in full, for any net reduction in the credit hour load. After the final day for adding a course, there is no reassessment or refund for reduction in credit hour load. An increase in credit hour load will result in an upward adjustment of the fee assessment. Students should refer to the current directory of classes (Class Schedule) for complete information pertaining to the University's refund policy.
Residency

The following policy adopted by the Board of Trustees of Western Michigan University applies to all students:

1. Since normally a student comes to Western Michigan University for the primary or sole purpose of attending the University rather than to establish a domicile in Michigan, one who enrolls in the University as a non-resident shall continue to be so classified throughout his/her attendance as a student, unless and until he/she demonstrates that his/her previous domicile has been abandoned and a Michigan domicile established.

2. The residence of a student who is a minor follows that of his/her parents or legal guardians, except that a minor student who comes to the institution from another state or country cannot be registered as a resident of this state on the basis of having a resident of this state as a guardian, except on permission of the Board of Trustees.

3. No student 18 years of age or older shall be eligible for classification as a resident unless the student shall be domiciled in Michigan and has resided in Michigan continuously for not less than one year immediately preceding the first day of classes of the term for which classification is sought.

4. A student shall not be considered domiciled in Michigan unless the student is in continuous physical residence in this state for one year and intends to make Michigan his/her permanent home, not only while in attendance at the University but thereafter as well, and has no domicile elsewhere.

5. The residence of a student who otherwise would be classified as a non-resident will follow that of his/her spouse if the spouse would qualify as a resident for tuition purposes.

6. An alien lawfully admitted for permanent residence in the United States and who has obtained his/her permanent visa, and his/her spouse and minor children, who have met the other requirements herein for residence, may register as residents of this state.

7. A student may register as a student of this state if: (a) the parent or legal guardian of a minor student, or (b) a student who is at least 18 years of age has been employed as a migrant worker in Michigan for a minimum of two months each year for three of the past five years, or a minimum of three months each year for two of the past five years prior to the date of the proposed enrollment. Proof and verification of employment is required.

Migrant worker in Michigan is defined as one who travels to the state of Michigan in pursuance of seasonal agricultural or related industrial employment.

Please note that the deadline for applying for a change in resident classification is 20 days after the first day of classes for each semester.

Full-Time Student Status

Full-time students are defined by credit hours enrolled in a given semester or session as follows:

Fall/Winter Semester
Undergraduate ......................... 12 hours
Graduate ............................... 9 hours
Doctoral ............................... 6 hours

Spring/Summer Session
Undergraduate ......................... 6 hours
Graduate ............................... 5 hours
Doctoral ............................... 4 hours

The University does allow full-time status to some of co-op and intern classes, when it is the only class allowed a student during a semester or session.

University Housing has its own regulations on the definition of hours needed to be eligible for housing contracts. Students should contact the University Housing Office for this information.

The above definitions are Western Michigan University regulations and may or may not be accepted by other agencies.
FINANCIAL AID AND SCHOLARSHIPS

Western's Student Financial Aid Office administers a variety of student financial aid programs designed to aid students who are in need of additional financial support. Five types of financial aid programs are available: scholarships, grants, employment opportunities, loans, and tuition plans. The federal and state governments, colleges and universities, private associations, companies, and private citizens are sources of financial aid.

The information in this section describes both need- and non-need-based financial aid programs based upon the 1997–98 award year criteria at the time of this editing. Should federal, state, or university regulations and procedures change for the 1997–98 and subsequent award years, the University will be responsible for administering these programs according to updated descriptions and criteria.

Applying for Financial Aid
To determine eligibility for need-based financial aid programs, students must file a Free Application for Federal Student Aid (FAFSA). The FAFSA is available from high schools, from Western’s Student Financial Aid ofice, and from other higher education institutions. Returning applicants will receive a Renewal FAFSA at their home addresses by late December. Students may file the FAFSA as soon as January 1 of the award year for which they are planning to attend Western.

The FAFSA gathers information regarding the parent's and student's income, assets, and other related information to determine the expected family contribution (EFC). The amount of need-based financial aid is determined by subtracting the EFC from the cost of attendance. The cost of attendance is based on an estimation of tuition, fees, books, supplies, housing, food, transportation, and personal expenses. The amount of aid not based upon need (non-need programs) is also determined by subtracting eligible need based financial aid programs and other resources received from the cost of attendance.

Besides filing the FAFSA, other documents and processes may be required before an award notice or payment is processed. Written communications will be mailed to students identifying what is required as a result of application edits, specific programs awarded, or general eligibility requirements. Application edits may require copies of Federal tax returns, or asset documentation. Social security matches may require copies of social security card or driver's license. Immigration and Naturalization Service matches may require copies of INS documents.

Program related documents may include loan promissory notes, or verification of Michigan residency for state programs. Entrance counseling attendance is also required for first time loan borrowers at Western.

Awarding Process
Considering the amount of student's financial need, the Financial Aid Office automatically considers students for all types of Federal, state, and institutional grants, employment, and loans. Any scholarships, stipends, or other resources will be assessed first before awarding need based financial aid. Additional eligibility factors will be considered in determining the type and amount of aid programs in the award package.

In general the eligibility factors that are reviewed are citizenship, residency, class level, grade level, enrollment hours, enrollment terms, degree status, default status, and good academic standing. Most financial aid programs require a minimum enrollment equivalent to half time status to be eligible for payment. Awards are initially based on full time enrollment and adjusted to reflect actual enrollment after the term begins.

Any additional resources, changes to funding or regulations may affect student's financial aid awards. If the information received affects student's financial aid awards, a Revised Award Letter will be mailed.

Payment Process
Financial aid payments are credited on or before the first day of the term to a student's account. Payments are disbursed each term based upon the program eligibility requirements, and minimum enrollment requirements are verified at the time of each disbursement. Any excess funds remaining will be mailed to a student's local address.

Maintenance Requirements
To continue receiving financial aid, regulations require monitoring a student's satisfactory progress towards a degree. A review of a student's cumulative grade point average, the percentage of hours attempted and passed, and the total hours attempted is conducted on an annual basis. Students who have not met the minimum criteria are not eligible for continued financial aid. Students who have experienced unusual circumstances beyond their control that they consider as attributing to the situation may submit a formal written appeal with documentation to the Financial Aid Office's appeals committee.

Grants/Need Based Scholarships
Financial aid programs funded by Federal and state governments to provide free assistance to exceptionally needy undergraduate students: Michigan Educational Opportunity Grant, Michigan Competitive Scholarship, Michigan Adult Part-time Grant, and Michigan College Work Study.

Federal Supplemental Educational Opportunity Grant provides grants ranging from $200 to $1,000 per academic year to students who have not obtained a bachelor's degree.

Michigan Educational Opportunity Grant provides grants ranging from $200 to $1,000 per academic year to students who are Michigan residents and have not obtained a bachelor's degree.

Michigan Adult Part Time Grant provides grants up to $600 per academic year to students who are Michigan residents, self-supporting, enrolled part-time and have not obtained a bachelor's degree. Recipients are limited to two years of eligibility.

Michigan Competitive Scholarship is based on financial need and a student's composite ACT score. The scholarship provides up to $1,200 per academic year to students who are Michigan residents and have not obtained a bachelor's degree. Recipients are limited to ten semesters of eligibility that must be used within ten years of their high school graduation.

Employment
Financial aid programs funded by Federal and state Governments, and the University to assist needy students through employment opportunities.

Federal College Work Study provides employment opportunities for undergraduate and graduate students. Students work from ten to twenty hours a week while attending school and may earn up to $2,300 per academic year. Western's Student Employment Referral Service office assists students who have been awarded employment in selecting jobs either on or off-campus (including community service opportunities).

Michigan College Work Study provides employment opportunities for undergraduate and graduate students who are Michigan residents. Students work from ten to twenty hours a week while attending school and may earn up to $2,300 per academic year. Western's Student Employment Referral Service office assists students who have been awarded employment in selecting jobs either on or off-campus (including community service opportunities).

Loans
Financial aid programs designed to assist students through borrowing at a lower interest rate with opportunities to defer principal payments and possibly interest payments until after enrollments end.

Federal Perkins Loan allows needy undergraduate and graduate students to borrow funds on an annual basis with an interest rate of 5.0 percent. The annual amount ranges from $500 to $1,800 per academic year. Interest and principal payments are deferred as long as a student is enrolled at least half time. Repayment of the loan plus
interest begins nine months after the student ceases to be enrolled at least half time.

Federal Direct Subsidized (FDS) Loan allows undergraduate and graduate students with financial need to borrow funds on an annual basis with a variable interest rate capped at 8.25 percent. The annual amount is dependent upon cost of attendance, grade level, and other resources received. Interest accrues while the student is enrolled in school and the student has the option of paying the interest payments or letting the interest payments be added to the loan amount. Loan principal payments are deferred as long as a student is enrolled at least half time. Borrowers pay a 4 percent origination fee that is deducted from each disbursement. Repayment of the loan plus interest begins six months after the student ceases to be enrolled at least half time.

Federal Direct Unsubsidized (FDU) Loan is a program not based on need and allows undergraduate and graduate students to borrow funds on an annual basis with a variable interest rate capped at 8.25 percent. The annual amount is dependent upon cost of attendance, grade level, and other resources received. Interest and principal payments are deferred as long as a student is enrolled at least half time. Borrowers pay a 4 percent origination fee that is deducted from each disbursement. Repayment of the loan plus interest begins six months after the student ceases to be enrolled at least half time.

Other Financial Opportunities:

- **Federal Parent Loan for Undergraduate Students (PLUS)**: Provides credit-worthy students and their parents an alternative source of funds. The interest rate is variable, and students may borrow up to $10,000 per year. Borrowers must supply FAFSA and pass a credit eligibility check. Eligibility is dependent upon the cost of attendance, eligibility for need based programs, and other resources received.

- **Other Alternative Loans**: Banks and private organizations have set up a variety of alternative loan programs. These programs require payment while the student is in school. The interest rates are at a higher rate than the federal programs, and they offer different repayment options. Contact Student Financial Aid for a listing of known alternative loan programs.

Other Financial Opportunities:

- **On and Off Campus Student Employment Opportunities**: The Student Employment Referral Service office actively recruits both on- and off-campus employment, including community service, opportunities. Students may review the jobs listed with service representatives at A-100 East Bunting Hall. Openings include food service and clerical positions of all levels, retail sales positions, and technical positions requiring computer science skills. Students may also directly contact specific areas of the university where they wish to work.

- **Student Employment Referral Service**: Can also help students find an existing co-op or internship program or design a program on their own and assist with prospective employers.

- **Residence Hall positions**: are also available as assistant or assistant directors. Advisors receive free room and board on campus (single room). Assistant directors receive free room and board on campus (single room) and a stipend each semester. Contact the Office of Residence Hall Life for further information.

- **U.S. Armed Forces**: Offers students a variety of educational assistance programs. For further detail, contact your local armed forces recruiting office.

- **Payment Plans**: are available through either Academic Management Services or Tuition Management Systems. These private companies work with the University to process payments. The plans allow parents and students to pay tuition, fees, and on-campus housing costs on a monthly basis. The plans generally cost $50 and do not charge interest. Parents or students generally pay a deposit, and the balance is paid by monthly installments. The companies pay the University directly.

- **Other Alternative Loans**:—Banks and private organizations have set up a variety of alternative loan programs. These programs require payment while the student is in school. The interest rates are at a higher rate than the federal programs, and they offer different repayment options. Contact Student Financial Aid for a listing of known alternative loan programs.

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Withdrawal from Courses and Impact on Financial Aid

In each class schedule, students will find a list of dates and percentages that are applied to all Western students who withdraw from school. Thus if students withdraw on a particular date, and their tuition and fees (and housing, if on-campus) have already been paid, the schedule identifies what percentage of those paid expenses can be returned to students since they are no longer completing the full semester. If students are receiving financial aid, these same percentages are used to determine what percentage of the paid charges must be returned to the financial aid programs instead of the students. This is referred to as a “Refund”. If students also receive a financial aid check to assist them with other school related costs, we will have to determine if any portion of that must be returned to the financial aid programs as well. This is called a “Repayment”. To calculate if a refund or repayment is due back to the financial aid programs, student’s withdrawal date from the University must be determined. Considering that date, a calculation is performed to determine what students may owe. If students leave school without officially withdrawing from the University, we will assume that students never attended the classes. In this case, students would be responsible for paying back the full amount of financial aid received. Therefore it is to the student’s benefit to officially withdraw from the University. Another benefit of officially withdrawing from the University, is that students will not end up with all “E’s” or all “X’s” on their transcript. An official withdrawal from the University allows us to indicate “withdrawal” on a student’s academic transcript thereby not affecting the grade point average.

Once the withdrawal date has been determined, accounts Receivable and Financial Aid will work together to determine if money must be returned to the financial aid programs. In the case of a refund, when a student’s University has been paid by financial aid, the University will send the funds back to the financial aid programs on the student’s behalf. In the case of a Repayment, when the student actually receives the funds back. If the funds are not used for the financial aid accounts, then students will be responsible for returning their financial aid to Western so we can continue to carry the money to the financial aid programs.

Refunds will be applied to the financial aid programs in the following order: Federal Direct Subsidized Student Loans, Federal Direct Unsubsidized Student Loans, Federal Direct Parent Loan, Federal Perkins Loan, Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, Michigan Educational Opportunity Grant, other State programs, and other University or private funded programs.

There is an EXCEPTION to this policy for first-time freshmen at Western. The federal government dictates the percentage of what must be returned to the financial aid accounts, if anything, instead of using the percentages set up in the class schedule. If students are first-time freshmen, and they withdraw from school before 60 percent of the term has passed, then we must calculate the portion of the term that applies and assess the amount of financial aid to be repaid to the financial aid programs.

WMU Scholarships for Beginning Freshmen

Medallion Scholarship Program

Through the Medallion Scholarship Program, the WMU Scholarship Committee selects recipients for one of the following scholarships:

*Medallion Scholarship*

The Medallion Scholarship, the University’s most prestigious scholarship for freshmen, exemplifies Western’s commitment to recognize and encourage superior academic achievement. Medallion scholars currently receive $32,000, awarded in $8,000 each year for up to four years. For 1997-98, Western awarded 20 Medallion Scholarships. Some Medallion scholarships carry the name of the donor and are awarded to students in programs designated by the donor; others are open to students in all degree programs.

WMU Board of Trustees Scholarship

This scholarship has a current value of $24,000, $6,000 per year for up to four years. For 1997-98, Western awarded 22 WMU Board of Trustees Scholarships.

WMU Academic Scholarship

This scholarship has a current value of $4,800; $1,200 is awarded per year for up to four years. For 1997-98, Western awarded 55 WMU Academic Scholarships.

Students are selected for these scholarships based on the following criteria (subject to change for subsequent academic years): (1) admitted to Western Michigan University by December 31 of student’s senior year in high school; (2) high school GPA of at least a 3.6; (3) ACT score of 25 or SAT score of 1130; (4) extracurricular activities; (5) employment history; (6) volunteer activities; (7) essay writing; and (8) group problem solving skills.

ADDITIONAL SCHOLARSHIPS FOR ENTERING FRESHMEN

WMU Award for National Merit Scholarship Winners

Western Michigan University is an institutional member of the National Merit Scholarship Corporation and sponsors scholarships for National Merit Scholarship Finalists. Recipients are selected on the basis of national merit test scores and scholastic achievement. Western also awards $3,000 ($750 per year for up to four years). To be eligible, students must designate Western as their first choice for admission with the National Merit Scholarship Corporation no later than April 1 of the year preceding the award year. Students receiving the maximum $2,000 per year award as a National Merit Scholarship Finalist are not eligible for the $3,000 scholarship.

Achievement Merit Scholarship

The Achievement Merit Scholarship is a one-time, $1,000 scholarship for the freshman year. In 1996-97, 1,588 Achievement Scholarships were awarded to students with a 3.5 high school GPA, who were not eligible for scholarships through the Medallion Scholarship Programs. Funding for this program is subject to change on an annual basis.

WMU Scholarships for Michigan Community College Transfer Students

A transfer student may receive only one of the following awards. For consideration, students must have completed at least 26 semester hours of transferable course work by the March 1 deadline.

WMU Distinguished Community College Scholars Award

A minimum of ten WMU Distinguished Community College Scholars are given annually to Michigan residents transferring to Western with an associate’s degree from a Michigan community college. Recipients of this $6,000 scholarship receive $3,000 each academic year.

To be eligible, students must have a grade point average of 3.5 or above in transferable courses and all materials necessary for admission must be received in Western’s Office of Admissions and Orientation by March 1. Recipients are selected by the Western Michigan University Scholarship Committee.

WMU Community College President’s Scholarship

Michigan community college presidents select the recipients of this $4,000 scholarship, which provides $2,000 each academic year.

To be eligible, students must have a grade point average of 3.5 or above in transferable courses and all materials necessary for admission must be received in Western’s Office of Admissions and Orientation by March 1.

Phi Theta Kappa Alumni Scholarship

Transfer students who are Phi Theta Kappa members in good standing are eligible for this $3,000 ($1,000) academic year award. A 3.5 or higher in transferable courses is required along with a recommendation by the chapter advisor. For students to be eligible, all materials necessary for admission must be received in Western’s Office of Admissions and Orientation by March 1. Recipients are selected by the Western Michigan University Scholarship Committee. The completion of an Associate’s Degree is recommended.

Transfer Achievement Scholarship

Students who transfer to Western with a minimum grade point average of 3.0 in transferable courses may be eligible for this $1,000 award, as long as funds are available. This scholarship is not renewable. For students to be eligible, all materials necessary for admission must be received in Western’s Office of Admissions and Orientation by March 1.

WMU Academic Scholarship for Transfer Students

Students who transfer to Western with a grade point average of 3.5 or above— as computed by the Western Office of Admissions and Orientation— will be eligible for a $2,000 scholarship, which provides $1,000 each academic year.

For students to be eligible, all materials necessary for admission must be received in Western’s Office of Admissions and Orientation by March 1. The University makes these awards as long as funds are available.

Western Scholarships For Currently Enrolled Students

WMU Undergraduate Research and Creative Activities Award

The WMU Undergraduate Research and Creative Activities Award Program,
administered by the Honors College, is designed to encourage and nurture research and creative activities by outstanding students at Western Michigan University. An essential feature of the Undergraduate Research and Creative Activities Award Program is the apprentice/mentor relationship established between a student and faculty member. A suitable project can come from any area of academic endeavor at the University. It could include, but would not be limited to, research, development, design, field study, a creative project or performance. Normally the project should require approximately 150 hours (or ten hours per week) of the student's time over one semester. Additional funds are available for a second semester renewal application.

The applicant must be a Western Michigan University undergraduate, should have a grade point average of at least 3.3, and typically have accumulated at least 60 credit hours at the time the project will begin. The program awards a $600 stipend for the first semester. An award may be renewed once if there is sufficient justification. While the program is administered by the Honors College, the student does not need to be a member of the College in order to qualify for an award.

The selection of awardees will be based on the past academic performance of the student, the experience and expertise of the sponsoring faculty member, and the merits of the proposed project.

WMU Academic Scholarship

Currently enrolled Western students whose University grade point average is 3.25 or above are eligible to apply for this $500 fall/winter semester award. Western awards 4.0 grade point averages and continues awarding down to a 3.25 grade point average as long as funds are available. Application forms are available at Western’s Student Financial Aid Office from January 1 through March 1. Students must submit their application by March 1 for the following academic year.

Clifford and Ella Chapman Distinguished Senior Scholarship

The trust established in 1964 by Clifford and Ella Chapman, longtime friends of Western Michigan University, provides the funds for this scholarship program. Each year, a senior who has achieved senior classification and have a grade point average of 3.5 or above may apply for the $200 semester award.

The selection committee also weighs extracurricular and community service activities, and the honors and awards the student has earned while enrolled at Western. Students whose extracurricular activities have been limited because of employment while attending Western should also include their work history.

Applicants must be U.S. citizens or permanent residents.

Application forms are available from December 1 through January 31 at the Student Financial Aid Office.

Non-Traditional Student Scholarship Awards of $200 to $400 for adult learners who have had a significant break in education. Awards are given on the basis of need and/or scholarship. To be eligible, undergraduate students must be enrolled for three to eleven credit hours and have a 2.5 grade point average. Graduate students must be enrolled for two to six credit hours and have a 3.2 grade point average. The award year deadline is July 1.

Contact the Student Financial Aid Office at (616) 387-6000 or regional centers.

WMU College and Departmental Scholarships

Military Science

Military Science ROTC Scholarships—Three- and two-year scholarships are available to qualified male and female students. Each scholarship provides up to $60,000 in tuition-movies, and a flat rate for books, student and lab fees ($450), and a subsistence allowance of $150 a month (up to $1,500 per year) while school is in session. Additional funds are available for ROTC scholarship recipients with a $1,000 annual incentive award. It is not a requirement to be enrolled in ROTC to apply for a scholarship.

General qualifications are as follows: The student must be a U.S. citizen, be enrolled as a full-time student in any major course of study leading to a baccalaureate degree, meet medical requirements, and be a member of the ROTC program. The applicant must be a Western Michigan University student, attend classes at the University, and be a member of the ROTC program between the junior and senior classes. The student does not need to be a member of the Honors College, but must be a member of ROTC. Scholarship applications are available from the Office of International Affairs. Further information on the award can be obtained from them.

Biological Sciences

The Margaret Thomas Du Mond Scholarship Award—This award, established in honor of Mrs. Du Mond, an alumna of the Biology Department, is available to upperclass biology majors who plan to become teachers. The award is granted annually to a student of junior or senior status (minimum of 62 credit hours), with a grade point average of at least 3.5, demonstrating career potential and financial need. Contact the Biological Sciences Office in Hoekje or Wood Hall for information and applications.

The Frank Hinds Zoology Award—This award was established in honor of a dedicated teacher who served WMU for 35 years. The award of $250 is granted annually to a declared undergraduate departmental major of sophomore or junior standing, who has completed at least three semesters of Biological Sciences at WMU, has a grade point average of 3.5 or better and an outstanding overall record. Contact the Biological Sciences Office in Hoekje or Wood Hall for information and applications.

The Jennifer C. Wenger Memorial Scholarship—This award is open to any full-time student, but preference will be given to a female recipient majoring in any academic discipline. If no candidate matches any of those criteria then a candidate with any academic major will be considered. An additional requirement of the award is that the recipient be employed part time as evidence of the commitment to assisting with the costs of their higher education experience at WMU. This award is administered by the Office of International Affairs. Further information on the award can be obtained from them.

Contact the Biological Sciences Office in Hoekje or Wood Hall for information and applications.
The Analytical Award—Sponsored by the American Chemical Society, is given to a junior who is outstanding in analytical chemistry.

The Adil Kan’a Award—Named in memory of a former faculty member, is given to an outstanding junior in physical chemistry, who has a high cumulative GPA in chemistry courses.

The Jensen Award—This award is drawn from contributions from the Jensen family, is given to a sophomore or junior majoring in chemistry on the basis of academic merit and active involvement in the activities of the department.

The CRC Press Freshman Chemistry Achievement Award—This award is given to a freshman for outstanding academic achievement in general chemistry.

Economics

President Scholar Award—This award is given annually to the outstanding undergraduate student in economics.

The Wall Street Journal Award—This award is given annually to the runner-up of the President Scholar Award.

English

Winners of all English Department awards and scholarships are announced at an annual awards ceremony in April. Nominations and applications—as relevant—for all awards are due each March 15.

The George Sprau Award in English—One or more awards are made each April to senior English majors with superior academic records; occasionally an outstanding junior is also honored. The awards commemorate contributions made to the English Department of our first chairperson, George Sprau, from 1917 to 1946.

The George W. Baker Scholarship—This $1,000 annual award is established in memory of George W. Baker, B.A., ’50, by his family and friends, is awarded to an outstanding student in English to defray costs of tuition, fees, and books. The annual recipient is selected by the faculty of the Department of English.

The Jean and Vincent Malmstrom Scholarship—The purpose of this $500 annual award is to give the generosity of Jean and Vincent Malmstrom, to stimulate an interest in the English language and its relevance to the teaching of English and the language arts. Applicants must be second-semester juniors or first-semester seniors at WMU, have a minimum overall GPA of 3.5, be English majors or minors in English Education, and have course work that demonstrates an interest in the English language—its grammar an structure, its history, and its varied dialects.

The Ralph N. Miller Memorial Award—This award, made possible by gifts from the late Dr. Miller’s family, friends, and associates in the WMU-AAUP, will be given each year to an outstanding junior English major or minor. The award will carry a minimum grant of $200.

While a student’s overall grade point average will be considered, such qualities as intellectual curiosity, inventiveness, forcefulness, and enthusiasm are also stressed. These were qualities prized by Ralph Miller, who is remembered as a splendid teacher. This award is a way of preserving the memory of one of our outstanding scholars and teachers.

The Patrick D. Hagerty Promising Scholarship in English Award—Preference is given to sophomores or juniors; potential first-semester juniors. The $250 award will be made in recognition of outstanding promise in the field of English.

The Frederick J. Rogers Memorial Shakespeare Award—A $250 award is made annually for the best essay written by an undergraduate student on some aspect of Shakespeare’s work. All students who have been enrolled in any course studying Shakespeare’s work during the current academic year, including the preceding spring and summer sessions, are eligible.

The Lawrence, Clara, and Evelyn E. Burke Scholarship—The recipient must be in the journalism major and must have achieved a minimum GPA of 3.0. In addition, the student must have had journalism experience, such as involvement with a school paper or yearbook, either at the high school or college level. The award, which is currently valued at $250, will be given on the basis of scholastic achievement.

The Virginia S. Little Scholarship Award—Created to honor the contributions of Professor Constance Weaver to literacy education, this annual award is available to both advanced undergraduate and graduate students in English Education. Ordinarily, $500 will be awarded to a student who demonstrates vision, insight, innovations, and divergent thinking in the promotion of literacy education. In addition, the scholarship winner is expected to choose the recipient of an additional $500 award for a project or program in literacy education.

Environmental Studies

The Environmental Studies Scholarship—This $300 annual award is open to environmental studies majors who have completed 15 hours of courses that count toward the major with an ENVS and University GPA of 3.0 or higher. Applicants must exhibit high scholastic ability and strong motivation for environmental service. Applications may be obtained from the environmental studies office.

Foreign Languages and Literatures

President’s Award for Study Abroad—The President of WMU has established an annual award of $2,500 to be given to a major in the Department of Foreign Languages and Literatures who wishes to study abroad for the purpose of improving his/her foreign language skills. The award is to be used for an approved program of foreign language study at a foreign university or in a study-abroad program sponsored by an American university. Preference will be given to students who intend to study abroad in the fall-year program.

Victor Coutant Award in Classics—A generous gift in memory of Dr. Victor Coutant, professor emeritus of modern and classical languages, which is possible for students majoring in French, German, Spanish, and classical languages. Academic performance and potential in the particular language area will be stressed in the selection of recipients for the four annual, nonrenewable awards.

Travel/Study Abroad Awards—To encourage more foreign language students to travel and study abroad, four or more awards of at least $600 each will be granted annually by the Department of Foreign Languages and Literatures. Recipients must have an academic record of 3.3 or better in a declared major or minor in the department.

Geology

Department of Geology Development Fund Scholarships in geology and geophysics are available in variable amounts. Senior Honor Awards in geology, earth science, and geophysics are awarded annually to outstanding seniors. Applicants must be currently enrolled in a Geology department program at WMU.

The Kalamazoo Geological and Mineral Society Scholarship—This award provides financial assistance to a qualified geology or hydrogeology major of junior or senior status who plans to enroll in a full-year summer field course. An honorable one-year membership in the Kalamazoo Geological and Mineral Society accompanies the variable monetary stipend. Information and applications are available from the geology department chairperson.

History

Several small stipends are awarded by faculty nomination annually in the names of distinguished emeriti and benefactors to the department. The James K. Gordon Burnham Awards are for academic excellence by seniors in each of the department’s several major programs. The Margaret Macmillan Award is for the outstanding example of written research and creative scholarship by an undergraduate major in history.

The Department of History occasionally awards by faculty nomination the Edy and Harry A. Mange Distinguished Scholarship in History to students, preferably women, who demonstrate evidence of professional commitment to the discipline. The Warner and Helen Maren Scholarship Fund supports undergraduate research presentations.

Mathematics and Statistics

The A. Bruce Clark Senior Award—This award is presented to outstanding senior
mathematics or statistics majors in recognition of excellence in their field of study and of their potential for accomplishments in the future.
The James H. Powell Award in Statistics—This award is presented to senior statistics majors in recognition of high academic achievement in statistics.
The John F. and Nora Everett Award—This award is presented to a senior student showing outstanding promise as a teacher of secondary school mathematics. Selection is based on overall achievement as well as performance in methods courses and student teaching.
The Grover Bartoo Award—This award is presented annually to a junior mathematics or statistics major in recognition of outstanding achievement in the study of mathematics or statistics.
The Erik A. Schraire Memorial Scholarship Award—This award is presented to two juniors in the Department of Mathematics and Statistics who have completed at least 15 hours of their program and have shown outstanding achievement and potential for future contributions in the mathematical sciences. One of the two awards is normally designated for a student in the Mathematics Education area.
The Freshman-Sophomore Prize Competition Award—These awards are presented annually to those students having the highest scores on the Freshman-Sophomore Examinations and which is given annually to those students invited to compete in the examination.
The Freshman Scholarship is awarded to a freshman mathematics or statistics major in recognition of an outstanding high school record and the potential for an excellent university career.
Robert Meagher Memorial Scholarship Award—This award was established in 1993 by the Kalamazoo University High School Class of 1965 in honor of their classmate Robert Meagher. Each year a junior mathematics major is awarded this scholarship in recognition of a high academic achievement.
Fred A. Beeler Memorial Scholarship Award—This award was established in 1994 by Isabel Beeler in remembrance of her husband Fred, who was a Professor of Mathematics at WMU. It will be awarded to qualified applicants majoring in mathematics, statistics, or mathematics education, based on financial need. First time awardees will be freshmen or sophomores.

Scholarship—-This scholarship is awarded annually to outstanding minority undergraduate major in psychology.

The Charles J. Wilcox Memorial Award—-This award is open to undergraduate or graduate students in political science at Western Michigan University. Applicants must have an overall grade point of 3.0 or higher and be enrolled in the program of study.
The Outstanding Physics Student Award—This award is presented each semester to the outstanding student in each of the following introductory physics courses: Physics 107, 113, 115, 205, 207 and 309.
The Outstanding Physical Science Student Award is presented each semester to the outstanding student in each of the following introductory physical sciences courses: Physics 207 and 309.
The Outstanding Psychology Major Award is presented each semester to the outstanding student in each of the following introductory psychology courses: Psychology 207 and 309.
The Outstanding Sociology Student Award is presented each semester to the outstanding student in each of the following introductory sociology courses: Sociology 207 and 309.
The Outstanding Political Science Student Award is presented each semester to the outstanding student in each of the following introductory political science courses: Political Science 207 and 309.
The Outstanding Economics Student Award is presented each semester to the outstanding student in each of the following introductory economics courses: Economics 207 and 309.
The Outstanding Business Administration Student Award is presented each semester to the outstanding student in each of the following introductory business administration courses: Business Administration 207 and 309.
The Outstanding Business Management Student Award is presented each semester to the outstanding student in each of the following introductory business management courses: Business Management 207 and 309.
The Outstanding Accounting Student Award is presented each semester to the outstanding student in each of the following introductory accounting courses: Accounting 207 and 309.
The Outstanding Marketing Student Award is presented each semester to the outstanding student in each of the following introductory marketing courses: Marketing 207 and 309.
The Outstanding Finance Student Award is presented each semester to the outstanding student in each of the following introductory finance courses: Finance 207 and 309.
The Outstanding International Business Student Award is presented each semester to the outstanding student in each of the following introductory international business courses: International Business 207 and 309.
Haworth College of Business

General scholarships open to all students in the Haworth College of Business.

Applications available: January 1 each year, 2130 Arnold Schneider Hall Application Deadline is February 1 each year.

**Old Kent Bank Scholarship**—This annual award in memory of Robert M. Rogge is given to a student entering any major in the Haworth College of Business. The award is based upon scholastic ability and financial need. Apply directly to the Haworth College of Business.

**General Motors Minority Scholarship**—This scholarship was established by the General Motors Corporation to provide assistance to worthy minority students in the Haworth College of Business. Apply directly to the Haworth College of Business.

**Haworth College of Business Achievement Awards**—These awards are given to outstanding students enrolled in a Haworth College of Business major. The awards are financed by general gifts from alumni, and by specific gifts to the Haworth College of Business. Apply directly to the Haworth College of Business.

**Al Pugno Scholarships**—An endowment given in memory of Al Pugno supports these scholarships. One or more annual awards are given to students enrolled in any major in the Haworth College of Business. The recipients must exhibit financial need. Apply directly to the Haworth College of Business.

**First of America Minority Scholarship**—This scholarship is awarded to beginning freshman majoring in business who have some interest in considering some phase of banking as a potential career. The scholarship is for the four-year undergraduate education and includes taking part in the FOA management development program. Apply directly to the Haworth College of Business.

**William J. Maze, Jr., Beta Alpha Psi Accountancy Scholarship**—This award is open to Juniors and Seniors who are active members of Beta Alpha Psi. High academic achievement is a basic criterion for selection. Contact the Department of Accountancy, Haworth College of Business.

**Ernst and Young Award**—This award is given annually to a student majoring in accounting. Academic achievement is the primary consideration in making this award. Contact the Department of Accountancy, Haworth College of Business.

**Robert B. Trader Marketing Scholarship**—One or more scholarships of $500 per year in honor of Dr. Robert Trader, President Emeritus and founder of the WMU Marketing Department Criteria. Majors in Marketing, Industrial Marketing, or Retailing; completion of 55 to 95 semester hours, minimum grade point average of 3.0; participation in University and community activities, and faculty recommendations. Application forms can be obtained from, and should be returned to, the Marketing Department by February 15.

**Chubb Group Insurances Award**—This award will provide a $500 scholarship and a two-semester paid advertising internship opportunity with Chubb Group Insurances.

**One Cannon Memorial Scholarship**—One scholarship of at least $500 will be awarded each year. Sponsored by memorial gifts in honor of the late Professor Zane Cannon, founder of the WMU Advertising Program.

**Slip & Company Advertising Scholarship**—A $500 scholarship and two-semester paid internship with Slip & Company, awarded to a senior with a declared advertising major.

The following Food Marketing scholarships are awarded annually during the winter semester for the following academic year to declared advertising majors who have completed fifty-five to ninety-five credit hours with a cumulative grade point average of at least 3.0. Recipients must enroll for a minimum of twelve credit hours. Consideration is also given to a demonstrated career interest in the field of food marketing and a cumulative GPA of 3.0; participation in University and community activities, and faculty recommendations. Application forms can be obtained from, and should be returned to, the Marketing Department by February 15.

**Cannon, founder of the WMU Advertising Program.**

**Slip & Company Advertising Scholarship**—A $500 scholarship and two-semester paid internship with Slip & Company, awarded to a senior with a declared advertising major.
obtained from the Marketing Department and must be returned by February 15.

Associated Food Dealers of Michigan Scholarship—One scholarship of $1,000 donated by the Associated Food Dealers of Michigan.

Sid Brooks Memorial Scholarship— A renewable scholarship of at least $1,000 given in honor of the late director of trade relations for Gerber Products Company.

Chicago Food Brokers Association Scholarships—Up to five scholarships of at least $1,000 given to food marketing students affiliated with Chicago-based food companies.

Dorothy J. and Clinton J. Christoff Scholarship—One scholarship of at least $1,000 given in honor of the founders of Chadaile Farms. Preference will be given to entering freshmen with a declared major in food marketing, or to family of employees or customers of Chadaile Farms.

Distinguished Order of Zerocrats Scholarship—Up to five scholarships of at least $1,000 each given through funds donated by the Distinguished Order of Zerocrats to honor the frozen food industry.

Jules W. Engleman Memorial Scholarship—One or more renewable scholarships of at least $1,000 given to junior or senior food marketing students on the basis of need and potential for career success within the food industry. This scholarship is given in honor of J.W. Engleman, Inc.

Farmer Jack Supermarkets Scholarships—Two $5,000 scholarships funded by Farmer Jack Supermarkets. One scholarship is designated for a current employee of Farmer Jack who is enrolled in, or planning to enroll in, the Food Marketing Program. The second scholarship is awarded to a current food marketing major with a career interest in retail store operations.

William O. Haynes Scholarship—One or more renewable scholarships of at least $1,000 awarded on the basis of scholarship and need in honor of Mr. William Haynes, Associate Professor Emeritus of Food Marketing.

S. C. Johnson Wax Scholarship—One scholarship of at least $7,000 awarded to the outstanding junior food marketing student, as selected by the food marketing faculty. This award is sponsored by the S. C. Johnson Wax Company.

Jule Kravitz Memorial Scholarship—A renewable scholarship of at least $1,000 presented to a food marketing student from the Cleveland, Ohio chapter in honor of Mr. Kravitz, former chairman of Pic ’N Pay Super Markets. Recipient must be a full-time student with a minimum grade point average of 3.0.

Pat Mitchell CFBA Award—This $2,000 scholarship is sponsored by the Chicago Food Brokers Association in honor of Mr. Pat Mitchell, a past president of the CFBA. It is presented to the outstanding food marketing student affiliated with a Chicago-based food company.

The Mitco Group Scholarship—One scholarship of $500 to be paid over two semesters and awarded to a junior food marketing major. Funded by The Mitco Group, this scholarship also includes a paid summer internship to be shared between the recipient’s junior and senior years.

Nabisco Foods Group Scholarships—Two scholarships of at least $2,000 each are awarded by the Nabisco Foods Group. The Nabisco Food Scholarship and Richard Nesich Scholarship are renewable scholarships of at least $1,000 awarded on the basis of scholarship and need in honor of Richard Nesich, Associate Professor Emeritus of Food Marketing.

Additional food marketing scholarships are made available through annual contributions from various manufacturers, brokers, wholesalers, and retailers in the food industry. Applicants must have a minimum G.P.A. of 2.5.

College of Education

College of Education Undergraduate Scholarship—Four (4) awards of $250-$1,000 each.

Margaret Isabel Black Scholarship—One (1) award of full tuition.

Jane Blackburn Memorial Scholarship for Undergraduates in Elementary Education—One (1) award of $500.

Lofton and Georgiann Burge Scholarships for Undergraduates in Elementary Education—Eight (8) awards of $500 - $1,000 each.

Katherine Pratt Burrell Education Scholarship—One (1) award of $500.

Robert and Irene (Smith) Davies Education Scholarship—One (1) award of $250.

Alfred Griffin Scholarship Fund—One (1) award of one-half tuition.

E. Fern Hudson Scholarship—Two (2) awards of $500 - $1,000 each.

Dorothy J. and Charles Scholarship—One (1) award of $500.

Zora and Frank Ellsworth Funds—Fund (One) award of $1,000.

Fund of Ninety Minorities in Education (FAME)—Five (5) awards of full tuition each.

Chryslar Grady Home Economics Scholarship—Two (2) awards of $1,000 each.

Lucille J. Haines Education Scholarship—Four (4) awards of $500 - $1,000 each.

Marion I. Hall Undergraduate Scholarship—Four (4) awards of $500 - $1,000 each.

Florence E. and Vernon A. Martin Prestigious Education Scholarship—Four (4) awards of $1,000 - $3,000 each.

Beulah and Harold McKee Scholarship in Early Childhood Education—One (1) award of $1,500.

Merce Tate Undergraduate Scholarship—Four (4) awards of $250 - $1,000 each.

Samuel K. Smart, Jr. Fund—Two (2) awards of $500 - $1,000 each.

Further information regarding these scholarships is available in the Dean’s Office, College of Education, 2306 Sangren Hall, or by telephoning 387-2966.

Health, Physical Education and Recreation

Harriett Kiser Creed Scholarship—One (1) award of $500.

Howard E. Thompson Endowed Scholarship—One (1) award of $300.

Family and Consumer Sciences

Chryslar Grady Scholarship—An endowment awarded to an outstanding student involved in materials and consumer sciences.

Information is available from the Department of Family and Consumer Sciences.

Robert B. Day Memorial Award—One (1) award of $500.

Family and Consumer Sciences

Nabisco Foods Group Scholarship—One scholarship of $500 awarded through personal contributions from Norman E. Slack, Emeriti, friends and relatives, and WMU alumni. Applicant must be enrolled in the College of Education and have a minimum G.P.A. of 3.0.

Additional food marketing scholarships are made available through annual contributions from various manufacturers, brokers, wholesalers, and retailers in the food industry.
FINANCIAL AID AND SCHOLARSHIPS

professor at WMU. Apply to the Department of Construction Engineering, Materials Engineering, and Industrial Design.

Materials Engineering Scholarship — These merit-based awards ($500) are made each winter to undergraduate students (at least sophomore standing) in Materials Engineering/Materials Science. Apply to the Department of Construction Engineering, Materials Engineering, and Industrial Design.

Materials Publication Award — This scholarship ($100) is awarded to graduate and undergraduate students in Materials Engineering/Materials Science in recognition of publication of their research findings at one of the national conferences (e.g., National Undergraduate Research Conference, American Society of Materials, Materials Research Society, American Chemical Society, and American Physical Society). Apply to the Department of Construction Engineering, Materials Engineering, and Industrial Design.

Scholarship Publication Award — This scholarship (from $300 to $500) is awarded to graduate and undergraduate students in Materials Engineering/Materials Science for the best refereed scholar paper in national journals resulting from their undergraduate senior design project or master’s thesis. Apply to the Department of Construction Engineering, Materials Engineering, and Industrial Design.

American Society of Metals-Saginaw Chapter Scholarship — This award is limited to students from Saginaw, Bay City, Flint, and Midland, Michigan, areas who have junior standing or less and are majoring in materials engineering or applied materials science. The scholarship amount is $500 for one year. Apply to the Department of Construction Engineering, Materials Engineering, and Industrial Design.

Societies of the Casters Engineering Scholarship — Applications are available at the Southwestern Michigan College Chapter 39 meetings. The awards vary in amount up to $300 each year. Apply to the Department of Construction Engineering, Materials Engineering, and Industrial Design.

O.R. Deerevirs Memorial Scholarship — This scholarship is given in awards of $250 to full-time students in their junior or senior year majoring in Construction Engineering and Management at WMU. The scholarship is awarded on the basis of need, without regard to a student’s grade point average. Apply to the College of Engineering and Applied Sciences Scholarship Committee (Room 2038 Kohrman Hall).

National Association of Home Builders/Home Builders Association of Kalamazoo Award — This award is presented to selected students who have a junior or senior class standing and are majoring in the Construction Engineering and Management or Construction Science and Management curricula. At least a $500 award is made annually to those individuals selected. Apply to the Department of Construction Engineering, Materials Engineering, and Industrial Design.

Dr. Richard S. Merry Memorial Awards — Students in materials engineering are eligible for additional scholarships: American Foundrymen’s Society Scholarship, Foundry Education Foundation Scholarship, H.H. Harris Foundation Scholarship, Pauline L. Martin Memorial Scholarship, and Society of Plastics Engineers Scholarship (see Department of Industrial and Manufacturing Engineering for details). Apply to the Department of Construction Engineering, Materials Engineering, and Industrial Design.

Scholarships from Outside WMU American Society for Metals Undergraduate Scholarships — $500 to $2000, major in materials engineering, at least sophomore standing. Deadline is June 15 each year. Details and applications are available through the Department of Construction Engineering, Materials Engineering, and Industrial Design.

Lloyd Hutt Memorial Scholarship — This is open to all graduating seniors in the Grand Rapids Public Schools who have demonstrated ability in the industrial arts. The award is $500, divided equally between fall and winter semesters, and may be renewed, based on the student’s achievement and the recommendation of the scholarship committee. Apply to the Department of Industrial and Manufacturing Engineering.

Industrial Engineering Scholarship — The Kalamazoo Antique Auto Restorers Club Scholarship offers $1500 annually to entering freshman who make application to the BS in Industrial Engineering and the Engineering Management programs. The scholarships are awarded based on high school academic achievement and high school participation in extracurricular activities. The awards are $250 per year for the freshman and sophomore years and $500 per year for the junior and senior years. Apply to the Department of Industrial and Manufacturing Engineering.

David Laine Memorial Scholarship— These awards are made each year by the American Foundrymen’s Society. Preference is given to students who have been involved in promoting manufacturing education in secondary and middle school. Apply to the Department of Industrial and Manufacturing Engineering.

Society of Plastics Engineers Scholarship — This scholarship is available to members of the student chapter of the Society of Plastics Engineers. Preference is given to students in the plastics engineering curriculum. Apply to the Department of Industrial and Manufacturing Engineering.

Society of Plastics Engineers Scholarship — The Society of Plastics Engineers offers one award each year, in the amount of $100, to a WMU student enrolled in the College of Engineering and Applied Sciences and pursuing course work in plastics. Apply to the Department of Industrial and Manufacturing Engineering.

Mechanical Engineering

The D. E. Bluman Memorial Award — Award given to an outstanding student in mechanical engineering who has demonstrated interest and ability in liberal studies. The award is given to a student with at least 30 hours at Western Michigan University and with at least 3.0 hours of graduation. A minimum GPA of 3.0 is required. The award is made during the winter semester and the amount varies.

The Duerrmetal Corporation — Offers several scholarships each year to students in the mechanical engineering curriculum. Awards are given to those mechanical engineering students with at least 30 hours completed toward their major and a 3.5 or higher GPA. Award is renewable. Apply to the Department of Mechanical and Aeronautical Engineering.

The Kalamazoo Antique Auto Restorers Club Scholarship — Awarded annually to students in the mechanical engineering curriculum with an option in automotive engineering and an interest in the restoration of classic cars. Awards are given to students with at least 30 hours completed toward their major and a 3.0 GPA. Two $500 awards are given during the spring semester. Award is not renewable. Apply to the Department of Mechanical and Aeronautical Engineering.

Paper and Printing Science and Engineering

Paper Science and Engineering Merit Scholarships — These scholarships are...
available for American and Canadian citizens majoring in paper science and paper engineering.

Beginning students interested in physical science, process engineering and/or environmental engineering may write the department directly to request additional scholarship and curriculum information and to obtain scholarship applications. Transfer students from other colleges or universities or from other departments at Western Michigan University who are interested in majoring in paper science or paper engineering are also eligible to apply.

These scholarships of up to $1,000 each semester are awarded on the basis of superior academic achievement.

Conditions for renewal of the scholarships include the maintenance of at least a 2.7 cumulative grade point average and continued enrollment in one of the paper curricula of the Department of Paper and Printing Science and Engineering. The scholarship program is supported through the Paper Technology Foundation, Incorporated, which includes many corporate members. Details are available in the Paper Technology Foundation office, Room 120 Walton, phone 387-8799.

Paper Technology Foundation Scholarship Funds
Albany International Corp. Scholarship
David and Doris Bossen Scholarship
Burgess Cellulose Foundation Scholarship
Mae M. Minter Calighan Scholarship
Olin W. Calighan Scholarship
Carlton H. Cameron Scholarship
Cargill Incorporated Scholarship
Celanese Polymer and Specialties Company Scholarship
Champion Package Division Scholarship
Champion Papers Scholarship
ChampionSt. Regis Scholarship
Ciba Geigy/Joseph A. Pacevich Scholarship
Class of 1990 Scholarship
Bert Cooper Scholarship
Consolidated Papers Foundation, Inc. Scholarship
Corn Products Scholarship
Doe-Teugh Scholarship
Theodore W. and George C. Dunn Memorial Scholarship
E.J. DuPont DeNemours and Company, Inc. Scholarship
E.I. DuPont Ti-Pure Titanium Dioxide Scholarship
E. B. Eddy Paper, Inc. - A. Richard Wagner Scholarship
Federal Paper Board Company, Inc. Scholarship
John M. Fisher/T'siai Lun Scholarship
Fletcher Paper Company Scholarship
Foxproven/Carver Foundation Scholarship
General Endowment Scholarship
Georgia-Pacific Alumni Scholarship
Gilman-Hafner Scholarship
Philip H. Gilman Scholarship
Grain Processing Corporation Scholarship
Gerald A. Hale Scholarship
Hammermill Paper Company Scholarship
Albert S. Harman Scholarship
Hercules Inc. Scholarship
J. M. Huber Scholarship
International Paper Company Scholarship
Raymond J. Jaquith/Celo Corp. Scholarship
John F. King Family Scholarship
Perry H. Koplik Scholarship
Dr. and Mrs. Stephen I. Kukolich Scholarship
K. A. Lundy Papers, Inc. Scholarship
E. D. Marvin/Orf felt Scholarship
John and Diane Maryanski Scholarship
Mead Corporation Foundation Scholarship
Michigan Carton Company Scholarship
Nalco Chemical Company Scholarship
Packaging Corporation of America Scholarship
Paper Technology Alumni Scholarship
Roger C. Peterson Memorial/Betz Paperchem, Inc. Scholarship
David K. Peterson Family Environmental Scholarship
PIMA-Michigan Division Scholarship
Regnquel Scholarship
Sanerzo Scholarship
William and Marita Siekman Scholarship
Simpson Paper Company Scholarship
TAPPI/Paper Chase Scholarship
Taco-Lox Cellular Laminations Scholarship
Union Camp Corporation Scholarship
Other paper science and engineering scholarships are:
Robert Caine Outstanding Student Award
Robert A. Welborn Paper Science and Business Scholarship (alternate years)
Undergraduate Research and Creative Activities Award for $1,200 or $900.

National competitive scholarships available to Western Michigan University students enrolled in the paper program:
TAPPI Engineering Division Scholarships—One $2,500 scholarship to a junior and one $2,500 scholarship to a senior.
TAPPI Polymers, Coating, and Laminations Division—One $1,000 scholarship.
TAPPI Coating and Graphic Arts Division—One $1,000 scholarship.
TAPPI Corrugated Containers Division—Two $1,000 scholarships.
TAPPI Paper and Board Division—One $1,000 scholarship.
TAPPI Norwovens Division—One $1,000 scholarship.
TAPPI Environmental Divisions—One $2,500 scholarship.
TAPPI Finishing and Converting Division—One $1,000 scholarship.
TAPPI Pulp Manufacture Division—Four $1,000 scholarships and one $500 scholarship.

PIMA divisions all have scholarships awarded to students who apply. Details are available in the paper programs office in McCraken Hall, Room 2610.

Printing Management/Marketing Scholarships available are based on talent, interests and management/marketing students:
Batson Printing, Inc. Scholarship—One $1,000 available to juniors and seniors. It is continuing and is awarded on the basis of need.
The Lawrence J. Brink Scholarship—This scholarship amount is variable and is available to freshmen through seniors. It is awarded on the basis of need and academic achievement and it is not renewable.
E.J. Kelly Endowment Award—One $500 scholarship available to sophomores and juniors. It is awarded on the basis of need and is renewable.
Gravure Education Foundation Scholarship—One minority and one junior scholarship for $1,000 which is awarded on the basis of need and a commitment to gravure activities. It is not renewable.
Jane L. Upton Memorial Scholarship—A $1,000 award to freshmen through seniors. Awarded on basis of need, academic activities, and departmental involvement. One yeareholder.

Brian Scott LaCombe Humanitarian Scholarship—A $500 per semester award to incoming transfer students with 30 credit hours or more in the printing programs. Awarded on academics, leadership qualities and extra curricular involvement. Renewable for a total of six (6) semesters.

Kalamazoo Valley Printing House Craftsman Club—Three scholarships each of $800 per year. Available to entering freshmen, based on need and academic achievement. They are renewable.

Robert Caine Outstanding Student Award—A $250 award to students with senior standing; one year only.

Tag and Label Manufacturers Institute—One $1,000 to $3,000 award to sophomore through senior, awarded on the basis of superior academic achievement. One year only.

National scholarships available to WMU students enrolled in the printing program:
Ann Arbor Graphic Arts Memorial Foundation—Six to ten scholarships of $100 to $1,000 are available to incoming freshmen. They are awarded on basis of need and academic achievement and are renewable.
Plexographic Technical Association—Thirty national scholarships of $1,000 are available to freshmen through seniors. They are awarded on academic achievement and are renewable.

There are 100 national scholarships ranging from $500 to $1,500 each. They are available to entering freshmen through seniors and awarded on academic achievement and are renewable.

Specific details are available in the Printing Programs Office, 1104 Belknap Hall.

College of Fine Arts

The Cornelius Loew Young Artist Scholarship—One $600 scholarship is awarded annually to an outstanding young artist in art, dance, music, or theater. This scholarship is awarded on a semester basis; to remain eligible for the scholarship, a student must maintain a grade point average of 3.0 or above.

Applicants must major or minor in a College of Fine Arts curriculum, attend Western as a full-time undergraduate student, obtain at least one letter of recommendation from a faculty member, demonstrate achievement in the given arts discipline or show promise as a new student.

In addition, scholarships, including the Hirscore/Sommerfeld Music Theatre Scholarship, are available to full-time students in the Music Theatre Performer curriculum. These scholarships are supported by businesses and are renewable upon application to students maintaining a 3.0 or above average who remain active in the program.

The Beverly A. Belk Scholarship Fund for Music Theatre is awarded to a senior preparing for a professional career in music theatre. The recipient will be selected by the Advisory Faculty Committee of the Music Theatre program or an appropriate interdisciplinary committee appointed by the College of Fine Arts. The recipient must maintain a good academic standing. One-half of the award shall be made during the first semester/session enrollment of the senior year and the second semester/session of the senior year.

Funds for these awards are made available through donations by alumni and friends of the University.

Art

WMU Department of Art Scholarship for Freshmen—The Department of Art annually offers a $500 scholarship to an entering freshman whose portfolio demonstrates exceptional promise. Applicants must be beginning freshmen, admissible to the University and enroll for the upcoming fall and winter semesters as a full-time Art major. Awards and applications for the fall/winter academic year are due by April 1 of the preceding year. Awards are announced by April 15. Application forms and portfolio guidelines are available from the Art Advising Office, 1406 Sangren Hall, Western Michigan
University, Kalamazoo, MI 49008 or call (616) 387-2440.

lydia Sedschlag Scholarship—Special scholarships have been established for art students living in Siedschlag Hall, an on-campus residence hall for women. All art majors, enrolled full-time, with a minimum GPA of 3.5 are considered. Recipients are notified prior to the Annual Art Awards Ceremony in late winter.

Arts Awards—The Department of Art offers yearly grants-in-aid to junior and senior art majors. Based on faculty recommendations, grants are awarded from the areas of painting, sculpture, printmaking, ceramics, jewellery, metal smithing, art history and art education. Recipients are notified prior to the Annual Art Awards Ceremony in late winter.

Haig and Janette Tashjian Art Teaching Scholarship—The family of Haig and Janette Tashjian has established this scholarship to honor the outstanding student in the art department. The recipient is selected each year by a committee of art faculty, including Professor Donald E. King, and one member of the Enz family.

Haig and Janette Tashjian Art Teaching Scholarship—The Department of Art annually offers several $1,400 scholarships to entering freshmen who have been nominated for scholarships by the Scholastic Art Awards Committee of the nation's recognized art contest. For information on this competition or an application write to Scholastic Inc., 730 Broadway, New York, NY 10003, or ask your high school guidance counselor.

The Theodore Presser Foundation recognizes cellists who demonstrate high achievement in musical studies. Funds come from an endowment established by Nelle M. Thacker (class of 1920) to honor the memory of her mother, Mae Arnold Thacker. The Robert Maybee Scholarships are awarded to seniors in honor of the first head of WMU's School of Music. Funds are contributed by music alumni and friends.

Dalton Music Scholarships are awarded to incoming music majors from southwestern Michigan who plan to pursue a teaching career. Funds for these scholarships are made available to WMU on a matching basis by the community of South Haven in honor of Michael Logsmo, who taught music in their schools from 1929 to 1969. The Beulah and Harold McKee Scholarship recognizes a senior music major who demonstrates outstanding accomplishment in his or her chosen field of music concentration. This award is made possible by an endowment established by the School of Music educators Beulah and Harold McKee.

The Gene Whitfield Scholarship recognizes a music student who demonstrates outstanding accomplishment in a jazz major. Funds are made available through donations to the scholarship program in memory of Gene Whitfield, a prominent and respected Kalamazoo jazz artist. The H. Glenn Henderson Scholarship recognizes a keyboard music major who demonstrates major evidence of accomplishment in his or her chosen field of music concentration. Funds are made available through donations to the scholarship program in memory of H. Glenn Henderson, professor of music from 1941 to 1966.

Sigma Alpha Iota and Phi Mu Alpha Sionfina are professional music fraternities which frequently receive special contributions or awards. These funds provide scholarships for which all music students are eligible.

Firms are made available through donations to the scholarship program in memory of the Theodore Presser Foundation. This scholarship is a award presented to a senior who is majoring in music at WMU. The recipient is selected from a list of students who plan to pursue a career in music education.
who are nominated by School of Music faculty members. In addition to showing outstanding promise, the recipient must carry an overall grade point average of 3.0.

The College of Fine Arts Scholarship is made possible by the College of Fine Arts for each of its four academic units every other year. The recipient must show outstanding ability in the particular field of fine arts study and be nominated to receive a senior award by the music faculty. A minimum grade point average of 3.0 is necessary.

The Leonard Meretta Band Scholarship recognizes an outstanding woodwind, brass, or percussion student. It is awarded in honor of Leonard Meretta who was Director of Bands at WMU from 1945–72. The winner is selected by the current Director of Bands. Funds come from an endowment established by donations from family, alumni, and friends.

Russell Brown Honors Brass Scholarships are awarded in honor of the lifetime teaching career of trombonist Russell Brown, a member of Western's faculty from 1951–86. Funds come from an anonymous donor. Awards are available to trumpet, tuba, trombone, and horn students who perform in an Honors Brass Quintet.

The Sam B. Adams Memorial Vocal Endowed Scholarship is awarded to an outstanding vocal music major who is selected by the vocal faculty. A minimum grade point average of 3.0 is necessary. Funds come from an endowment honoring Sam Adams, a member of the voice faculty from 1946 to 1973.

Evelyn Rose Hart Endowed Scholarship for Elementary Education/Music Majors recognizes outstanding Elementary Education/Music (EEM) majors. Funds come from an endowment established by Evelyn Rose Hart, who taught both elementary and high school music for 45 years.

Audrey Ekdahl Davidson Early Music Scholarship is awarded to an outstanding vocalist who will perform with the Collegium Musicum. Recipients must carry an overall grade-point-average of 3.0. Funds are provided by Professor Emerita Audrey Davidson, who taught at Western from 1965–93.

Music Therapy Graduate Student Scholarship is awarded to each year to a graduate student in music therapy who has a particularly distinguished academic record. Questions may be directed to: Music Therapy, School of Music, Western Michigan University, Kalamazoo, Michigan 49008-3831.

Theatre
The David Wayne Scholarship—This annual award is given in recognition of student(s) with an overall cumulative grade point average of 3.0, who have a genuine interest in theatre demonstrated by their achievement and participation in the University Theatre program.

The Laura V. Shaw Scholarship—This annual award is given in recognition of outstanding scholarship (applicants must have an overall grade point average of 3.0), talent, and contribution to the University Theatre program.

The Beulah and Harold McKee Theatre Scholarship Award—This annual award is given to a freshman entering the theatre program who demonstrates outstanding promise. Requirements include a 3.0 high school grade point average and active participation in school and/or community theatre.

The University Theatre Guild Scholarship—This annual award is given to a theatre major who has been an active and consistent participant in the theatre production program and has demonstrated a professional attitude. A 3.0 grade point average and a minimum course load of twelve semester hours at the time of application and during the year of award are required.

The M.B. and R.E. Jackson Scholarship—This award is given to a outstanding theatre major, possessing a 3.0 grade point average and a professional attitude toward his/her work.

Multi-Cultural Theatre Scholarship—This award is given to an outstanding minority theatre major, possessing a 3.0 grade point average and a professional attitude toward his/her work.

The Evelyn Burke Scholarship—This award is given to an outstanding theatre student who demonstrates potential in any of the theatre arts. A 3.0 grade point average is required at the time of application and to maintain the award.

College of Health and Human Services
College of Health and Human Services Scholarship Program—Several awards in varying amounts are made on a departmental rotational basis to outstanding students who are enrolled in the college's curricula. Funds for this program are made available through donations by alumni and friends of the University. Recipients are selected by the current semester, and awards are renewed annually for the following academic year. Apply directly to the school, department, or program office in the major field of study.

Gerontology
The Leonard and Frances Gernant Scholarship—This scholarship is established to honor former Dean of Academic Services Leonard Gernant, who recognizes graduates of high academic achievement who are pursuing a minor in the gerontology program. Apply to the School of Community Health Services, Gerontology Program.

Nursing
The Theodore and Hazel Perg Scholarship—The Perg Scholarship funds are provided from an endowment established by the Perg family. Students who have graduated from high schools in Allegan, Barry, Berrien, Branch, Calhoun, Cass, Kalamazoo, St. Joseph, or VanBuren counties and who have been accepted for enrollment at Western Michigan University School of Nursing may apply for these funds each academic year.

The scholarship is based, in part, on financial need and awards up to $5,000 for the cost of tuition, books, and supplies. Applications are available in the School of Nursing.

Occupational Therapy
All awards are made in late summer. Application forms are available in the department in late February.

Kalamazoo School of Occupational Therapy (American Business Clubs)—A varying number of scholarships are awarded each year. Awards are based upon need and leadership potential.

Portage AMBUCS (American Business Clubs)—Several scholarships are awarded annually. Awards are based upon need and leadership potential.

Michigan Occupational Therapy Association—An award has been established by the Michigan Occupational Therapy Association for the purpose of aiding worthy students in the enter the field of occupational therapy. Applicants must exhibit scholarship, hold Michigan residency, and be a junior, senior, or graduate students in occupational therapy. Applications are available in the Department of Occupational Therapy.

The Marion R. Spear Award—This award was established in honor of the founder of the Kalamazoo School of Occupational Therapy and first director of the occupational therapy curriculum at WMU. It is awarded annually to an outstanding senior or graduate student who demonstrates promise of being a superior occupational therapist. The selection is made by the faculty.

Mabel A. Val Dez Award—The Mabel A. Val Dez Award was established in memory of a former faculty member of the occupational therapy department. It is awarded by the Occupational Therapy Department to support student attendance at national and international occupational therapy conferences and conventions. Selection is made by the Student Occupational Therapy Association (SOTA).

Physician Assistant
John Josten Scholarships—These scholarships for physician assistant students were established to honor the first director of the Physician Assistant Program. Cash awards are made to outstanding Physician Assistant students who have demonstrated academic excellence (minimum 3.25 grade point average) and who show a commitment to the profession. Apply directly to the scholarship committee of the Physician Assistant Program.

School of Social Work
Whitney Young Scholar's Program—This competitive program is open to minority seniors and first-year minority graduate students. Applicants must demonstrate excellence in the areas of scholarship and community service. Winners are selected by a panel of judges. There are usually two finalist awards of up to $200 each. Apply to the School of Social Work.

The Bob Barstow Alumni Scholarship Award—in recognition of Professor Emeritus Robert Barstow's outstanding contribution to the School of Social Work and the Social Work Profession, the Alumni established this scholarship award. The annual award is available to one full-time undergraduate and one senior status undergraduate social work student. Selection criteria include academic merit and interest in the area of child welfare. Potential recipients are identified by School of Social Work personnel.

Nathaniel McCaslin Minority Scholarship—This scholarship was established through the University in recognition of Professor Emeritus Nathaniel McCaslin. Mr. McCaslin has made outstanding life-long contributions to improving the quality of life in the community and the quality of education. Awards are granted to one Master of Social Work student and one undergraduate social work major. Selection criteria include minority status and good academic standing. Priority is given to those who share a commitment to working with adolescents and/or are a first generation college student. Other desired criteria include single parent status and history of, or interest in, working in community service area. Selection is made by a McCaslin Scholarship Committee.

The Deloris Jordan Phillips Scholarship—This scholarship was established through the University in recognition of Associate Professor Emerita Deloris Jordan Phillips. This two-year award alternates between undergraduate and graduate recipients. The recipient is chosen based upon merit, identified as: a minimum overall 3.3 GPA at the undergraduate level, a minimum overall GPA of 3.5 at the graduate level. Selection is made by the Phillips Scholarship Committee.

Speech Pathology and Audiology
Clinician of the Year Award—This award is presented annually to a junior- or senior-level student who, in the judgment of the speech pathology and audiology faculty has
demonstrated outstanding competence in practicum activities.

**Intercollegiate Athletics**

**Athletic Grants-In-Aid—Western Michigan University** makes certain grants-in-aid available to students excelling in athletics and participating in varsity sports. A student must be recommended by the Division of Intercollegiate Athletics.

**Office of International Affairs**

The Office of International Affairs administers a variety of scholarships to assist students to participate in university-to-university exchanges and study abroad programs. To be eligible applicants must be current undergraduate or graduate students enrolled at Western Michigan University, in good standing, and meet minimal G.P.A. and other requirements. Scholarships are awarded in a competitive process to qualified students who meet the specific requirements of each scholarship. Applications forms are available from the Office of International Affairs.

**President's Grants for Study Abroad—WMU's most substantial source of support for students planning a semester abroad. Preference will be given to students who can demonstrate financial need and who plan on intensive language study abroad, however smaller grants will also be awarded for merit (no financial need demonstrated), and for students who plan on less intensive language study. Grant awards will try to bridge the gap between the cost of study at WMU and the cost of foreign study.**

- **Free University of Berlin Exchange Scholarships—** These scholarships enable two WMU students to study at the Free University in the city of Berlin, Germany, for an academic year beginning in October. Tuition, housing, and stipend are included.
- **University of Tübingen Exchange Scholarships—** These scholarships enable two WMU students to study in Tübingen, Germany, for an academic year beginning in October. Tuition and housing are included.
- **Keio University Exchange Scholarship—** This scholarship enables one WMU student to study Japanese language and culture at Keio University in Tokyo, Japan, for eleven months beginning in September. Tuition, housing, and stipend are included.
- **University of Paderborn Exchange Scholarships—** These scholarships enable two or more WMU students to study at the University of Paderborn in the city of Paderborn, Germany, for an academic year beginning in October. Tuition and fees are included.
- **University of Passau Exchange Scholarship—** This scholarship enables one WMU student to study at the University of Passau in the city of Passau, Bavaria, Germany, for an academic year beginning in October. Tuition and housing are included.

- **President's Award for Study Abroad—** The President of WMU has established an annual award of $1,500 to be given to a major in the Department of Foreign Languages and Literatures who wishes to study abroad for the purpose of improving his/her foreign language skills. The award is to be used for an approved program of foreign language study at a foreign university or in a study-abroad program sponsored by an American university. Preference will be given to students who intend to study in a full-year program.

- **Jennifer Wenger International Study and Travel Scholarship—** This endowed scholarship was established by the Wenger family in honor of their daughter who participated in an international study-travel program while a WMU student. The scholarship will be awarded on an annual basis to a full-time student, preferably a female, and is non-renewable. Preference will be given to applicants studying anthropology, sociology, and women's studies, followed by majors in humanities, social sciences, or education.

**International Affairs Scholarships—** The Office of International Affairs offers a limited number of $250 to $500 scholarships to assist students to participate in WMU-sponsored study abroad programs.
ACADEMIC POLICIES AND PROCEDURES

Degree Requirements

Any curriculum leading to a bachelor's degree consists of at least 122 hours of credit. The student must meet the following requirements or their equivalent.

University Requirements

1. The requirements in at least one of the University approved curricula must be fulfilled before graduation.
2. The student must complete a major with a minimum of 24 hours and, if required by the curriculum, a minor with a minimum of 15 hours. Courses elected to satisfy requirements in one major and/or minor may not be counted again to satisfy requirements in another major and/or minor. A 30-hour subject major or 36-hour group major is required of students in Elementary and Secondary Education, with a minor or minors of at least 20 semester hours. For further details see Curricula for Teachers. Some students may be excused from the requirement of declaring a regular major and/or minor field if they satisfy the requirements of their curriculum as set forth in the catalog, or that curriculum as modified by substitutions approved through normal channels.
3. Each student must complete the required General Education program. Beginning with the Fall Semester 1973, students graduating with an Associate of Science degree from Michigan two-year colleges, which are associated with the Michigan Association of Collegiate Registrars and Admissions Officers General Education Agreement, will automatically have fulfilled the first and second year General Education requirements. General Education requirements of two courses at the junior and senior levels will continue to be required.
4. A minimum grade point average of 2.0 must be obtained in a major or minor(s) presented for graduation. Individual colleges, departments, or programs may have additional University approved requirements including a higher minimum grade point average.
5. A student must also have an overall University grade point average of 2.0 or higher to be graduated. If a student fails to meet minimum University academic standards, he/she goes on academic probation or is dismissed.
6. Each student will fulfill all requirements of the Intellectual Skills Development Program as outlined in this section.
7. Each student must satisfy the University computer literacy requirement as outlined in this section.
8. Minimum residence requirements. All candidates must present a minimum of 30 hours through Western Michigan University. Ten of the last 30 hours must be taken through Western Michigan University. Correspondence credit and credit by examination may not be used to satisfy any of the minimum requirements. Individual colleges and departments may have additional residency requirements.
9. A maximum of fifteen semester hours of credit in correspondence (self-instructional) courses may be applied to a degree. Individual colleges and departments may have restrictions on the application of correspondence (self-instructional) courses to degree requirements.
10. Students transferring from a two-year community college must complete a minimum of one-half of the academic work required in their curriculum at an accredited four-year, degree-granting institution.
11. Students may graduate under the WMU catalog in effect at the time of their initial registration or any succeeding catalog providing the catalog is not more than ten years old upon the completion of requirements for graduation. Students who have been gone from the University for ten years or more must enter the University under the catalog in effect at the time of re-entry. For exception see “Special Policy . . .” under “Graduate Requirements for a Bachelor of Science in Engineering” listed in the College of Engineering and Applied Sciences section.
12. In cooperation with two-year institutions of higher education in the State of Michigan, a student who transfers within three years upon leaving the community college to Western Michigan University from a two-year Michigan institution may elect to graduate under the WMU catalog in effect at the time of the initial registration at the two-year institution.
13. As a requirement for graduation, all seniors must participate in the assessment program.

Intellectual Skills Requirements

The Baccalaureate degree at Western Michigan University includes proficiency in the intellectual skills of reading, writing, and quantification. In order to insure development of students' abilities in these skills, the University maintains an Intellectual Skills Development Program. New students entering WMU under the 1983-84 and subsequent catalogs will participate in the program. The first phase of the program occurs upon entry to the University, typically at Orientation, when student competencies are assessed via ACT scores and/or University-developed tests. Skills requirements for each student are determined at this time.

WRITING

All WMU students are required to pass a college-level writing course. Students whose test results indicate weak writing skills must pass a basic writing course before proceeding to the required college-level writing course. Students who demonstrate superior writing skills may be exempted from the college-level writing course requirement.

Basic writing course options are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Institution</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 100</td>
<td>WMU</td>
<td>Basic Writing</td>
</tr>
<tr>
<td>BIS 100</td>
<td>WMU</td>
<td>Business Writing</td>
</tr>
</tbody>
</table>

College-level writing course options are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Institution</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 105</td>
<td>WMU</td>
<td>College-Level Writing</td>
</tr>
<tr>
<td>BIS 142</td>
<td>WMU</td>
<td>Business Writing</td>
</tr>
<tr>
<td>IME 102</td>
<td>WMU</td>
<td>Engineering and Applied Sciences Writing</td>
</tr>
</tbody>
</table>

HIST 104

In addition to the college-level writing requirement, each student must also demonstrate writing proficiency by successfully meeting a baccalaureate-level writing requirement as designated by the student's major department or program. It is recommended that students complete this requirement after attaining junior standing. Existing guidelines regarding repeating a course will apply. Credit for course work from four-year institutions only will fulfill this requirement. Implementation begins for students entering under the 1988 Undergraduate Catalog Supplement except for students gaining a second baccalaureate degree. This requirement meets General Education Proficiency 2.

READING

On the basis of test scores, certain students are required to pass ED 104, Effective College Reading. This course is designed to improve comprehension, vocabulary, and study skills, and thus prepare students for further college work.

QUANTIFICATION

On the basis of scores on a test of basic mathematical skills, certain students are required to pass MATH 109. Students must earn a “C” or better in MATH 109 in order to proceed to fulfill other mathematics requirements.

GUIDELINES

ENGL 100, BIS 100, ED 104, and MATH 109 carry academic credit and grades earned are included in calculating the student's grade point average. The credits for these courses, however, constitute an additional graduation requirement beyond the total number of credit hours required for a student's curriculum. Students who are placed into any of these courses must pass the course(s) before registering for their thirty-third credit hour at Western.

Students who fail to demonstrate competency by test or by course by the time of enrollment in the thirty-third credit will be permitted to enroll only in the above-named skill-building course(s).

Students may resume regular course enrollment only after all entry-level competencies are demonstrated.
A college-level writing course must be completed before a student registers for the sixty-second credit hour at Western and before the baccalaureate-level course is attempted.

Intellectual Skills Development Program for International Students

**Writing and Reading**
Beginning undergraduate international students are placed into, or exempted from, English 160/161 or 360/361 based on the results of either the MTELPI (Michigan Test of English as a Foreign Language), TOEFL (Test of English as a Foreign Language) Scores of 75–84 on the MTELPI or 500–549 on the TOEFL, warrant placement into this language program.

The Office of International Student Services requires completion of the language program during the student’s first enrollment period at WMU. The student may then proceed to fulfill the college-level writing requirement.

International students who are not required to take the language program will proceed to fulfill all Intellectual Skills requirements in writing, beginning with the college-level writing course and proceeding through the baccalaureate-level requirement.

**Quantification**
International students will fulfill all Intellectual Skills requirements in quantification.

**International Transfer Students**
International transfer students will abide by the Intellectual Skills Development Program requirements for transfer students.

Failure to enroll in the Intellectual Skills Program as outlined above will result in cancellation of admission.

Intellectual Skills Development Program for Transfer Students

Transfer students entering under the 1983–84 and subsequent catalogs will participate in the program.

**Writing**
Students who transfer a college-level writing course of 2.7 or more semester hours credit (or a sequence of courses that satisfies the college-level writing requirement at the transfer institution), will be exempted from the writing assessment upon entry. These students will be considered to have met the Intellectual Skills Program college-level writing course requirement. All other transfer students will be placed into a remedial or college-level writing course according to assessment results. Students who transfer under the 1988 catalog supplement or subsequent catalogs will also meet the baccalaureate-level writing requirement as designated by their major department or program.

**Reading**
Students who transfer twenty-six semester hours or more of credit with a GPA of 2.0 or better, or who transfer the equivalent of ED 104, are exempted from the reading assessment upon entry. All other transfer students will have their reading skills evaluated by standardized test and will either place into or be exempted from ED 104, Effective College Reading.

**Quantification**
Students who transfer a mathematics course at the level of MATH 110 or higher are considered to have entry-level computational skills and need not take the computational skills assessment test upon entry. All other transfer students will place into or be exempted from MATH 109 according to assessment results.

**Computer Usage Requirement**
Every undergraduate must demonstrate proficiency in computer usage through one of the following options:
1. Satisfactory completion of an approved computer usage course;
2. A passing grade on a computer-assessment test;
3. Meeting proficiency standards set by the college of the student’s major.

Entering students should contact their college advising office for specific instructions concerning the options for fulfilling the computer usage requirement.

**University Assessment Requirement**
Western Michigan University has in place an assessment program which provides information to various policy making groups on the quality of programs and services provided to students. The University uses only aggregate information to make decisions concerning the quality of programs and services. A number of different tests and procedures are used in the collection of information.

Students participate in the assessment program throughout their college careers on a sampling basis. When a student participates in procedures which are not naturally normed, individual results are provided to each student during the term after testing. Individual results of assessment are not used for placement in classes or curricula, withholding earned academic credentials, granting academic credit, or released to anyone other than the student. Policy making groups within the University use only aggregate information to assess the quality of programs and services.

As a requirement for graduation, all seniors must participate in assessment as designated by the University. Questions about assessment are handled by the student’s advisor.

**Foreign Language Requirement**
The Foreign Language Requirement for students who will graduate through the College of Arts and Science is described in the Arts and Sciences section of this catalog.

**General Education Policy**

**GOALS OF GENERAL EDUCATION**

A bachelor’s degree should signify that the individual to whom it is granted has had a broad and balanced education, as well as concentrated studies in at least one discipline or area of knowledge. It should also signify that the individual has acquired intellectual skills that are applicable across a wide range of endeavors. As in those narrower skills appropriate to a specialized field, the University requires structured plans of study leading toward both a specialized and general education.

Specialized education—the primary objective of concentrated study in majors, minors, and curricula—normally restricts the scope of concern in order to ensure a detailed, specific competence in techniques and subject matter. It seeks to accomplish these ends through a program of study comprising a number of segments (or concentrations) designed and planned to contribute to the whole; the intended result is a person with particular information and a set of skills and abilities usually shaped by specific job demands and descriptions. Often the goals of specialized education are determined or strongly influenced by external agencies, e.g., accrediting bodies or professional field demands, as much as by the stated goals of the University.

General education, on the other hand, is concerned with the breadth and balance of learning, and with the versatility that comes with proficiency in intellectual skills that have universal application. General education should develop each student’s knowledge, capacity for expression and response, and critical insight to help the student become a capable, well-informed, and responsible citizen of a culturally diverse society in a complex world. To this end, the University’s general education program aims to improve the student’s competence in mathematics and language, both oral and written, and to foster the will and ability to think clearly, critically, reflectively, and with as much precision as the subject allows. While requiring a degree of proficiency of everyone, the University’s general education program enables the student to master foundational intellectual skills through a sequence of related courses.

General education also seeks to extend the undergraduate learning experience beyond particular academic or professional concentrations. It aims to acquaint the student with essential subject matter and methods of knowing in the arts and humanities, the social and behavioral sciences, mathematics, and the natural (including applied) sciences. Moreover, it aims to enable the student to use technology appropriately, to understand the value of individual health, fitness, and well-being. These aims are based on the belief that such learning enriches human experience and fosters understanding of oneself, others, and the world.

While the two kinds of education can thus be distinguished, they are essentially complementary, not antithetical, elements of an undergraduate education; and courses in each type often contribute to fulfilling the goals of the other. Study in depth can reward the student with a sense of competence and the sobering awareness of how much is yet to be learned in any field, while the broader perspective and the habit of seeking interrelationships enhance the benefits of specialized study. Furthermore, just as specialized programs mandate some breadth in a student’s education, so should the general education program allow some study in depth.

**Structure of the General Education Program**

This general education program incorporates the University’s college-level and baccalaureate-level writing requirements, eliminates the physical education requirement (University requirement not p.31 of the 1993–95 Undergraduate Catalog), and lets the University computer usage (literacy) requirement continue in force separately.

The program has two parts: proficiencies and distribution. What follows describes these elements of the program. However, all descriptions of course content and structure presuppose the individual professor’s freedom to teach the course according to personal professional judgment. Stated requirements are not intended to impose upon academic freedom, but only to specify a range of content within which the course should be structured. Matters of interpretation and pedagogy are the sole prerogative of the individual professor.
General Education Requirements

**PROFICIENCIES**

The general education program requires each student to develop proficiency in writing and mathematics or quantitative reasoning and, beyond that, to enhance one of these proficiencies by developing a foundational skill. Each student must:

1. complete a college-level writing course;
2. complete a baccalaureate-level writing or writing-intensive course in one’s major or curriculum;
3. complete a college-level mathematics or quantitative reasoning course beyond MATH 110, as satisfied by MATH 111, not limited to courses in the Department of Mathematics and Statistics;
4. complete a course or courses in one of the following categories (one of these options may be required by the student’s major and/or curriculum):
   a. advanced writing, 3–4 hours
   b. mathematics or quantitative reasoning, 3–4 hours
   c. critical thinking, 3–4 hours
   d. oral communication, 3–4 hours
   e. American Sign Language, 3–4 hours
   f. computer programming and applications, 3–4 hours, or
g. courses to advance proficiency in a foreign language to at least second semester level, 6–8 hours

5. satisfy both the college-level writing (no. 1 above) and college-level mathematics or quantitative reasoning (no. 3 above) proficiency requirements before registration in any upper-division-level course. Upper-division-level courses are defined as those courses with a course number of 200 or above.

**DISTRIBUTION**

The general education program defines a comprehensive and balanced distribution of eight content areas and requires that a student take a course from each area:

- **Area I: Fine Arts, Humanities, 3–4 hours**
- **Area II: The United States: Cultures and Issues, 3–4 hours**
- **Area IV: Other Cultures and Civilizations, 3–4 hours**
- **Area V: Social and Behavioral Sciences, 3–4 hours**
- **Area VI: Natural Sciences with Laboratory, 4–5 hours**
- **Area VII: Natural Science and Technology: Applications and Implications, 3–4 hours**
- **Area VIII: Health and Well-being, 2 hours**

**OTHER REQUIREMENTS**

In addition to meeting the proficiencies and distribution requirements, the following requirements apply to the general education program:

1. Course work must total a minimum of 37 hours, not counting the baccalaureate-level writing course except for designated majors. If a student completes all requirements by completing fewer than 37 credit hours, the remaining required credits may be selected from any course approved for general education.
2. A minimum of six hours must be taken from 300- or 400-level courses in the distribution areas.
3. No more than two courses from any one department may be used to satisfy distribution requirements.
4. Courses at the 500-level do not count towards general education. Courses with prerequisites may count towards general education.

5. Students may receive credit by examination in place of coursework in the proficiencies, but not proficiencies 4a - 4g, if the department offering the course provides for credit by examination, and the COGE approved examination in a foreign language at a second-year level does not waive the fourth proficiency requirement.

**Criteria for the Proficiencies**

**WRITING COURSES (Proficiencies 1 and 2)**

Writing courses which satisfy proficiency requirements should work to develop students' ability to express themselves effectively in writing. Specifically, college-level writing courses should develop the ability to think critically and reflectively about written material, an awareness of the process of composition, the ability to employ appropriately, though not necessarily faultlessly, the grammatical and mechanical conventions of standard written English, and the ability to organize materials and to develop and support ideas and arguments and express these clearly.

Baccalaureate-level, advanced, or writing-intensive courses should reinforce the skills acquired in college-level courses and should promote maturity as a writer. They should further the development of analytic and evaluative writing, the ability to construct and develop a point or idea, the ability to develop organized paragraphs and use appropriate transitions, and the ability to employ the grammatical and mechanical conventions of standard written English. Papers in every course approved for baccalaureate-level writing must be substantial in nature and appropriate for writing in their respective disciplines.

These descriptions do not supersede criteria stated in the current University baccalaureate-level writing requirement.

**MATHEMATICS OR QUANTITATIVE REASONING COURSES (Proficiency 3)**

Each student must either:

- complete a college-level mathematics or quantitative reasoning course, Math 110 (satisfied by Math 111), or its equivalent, as a prerequisite, or
- place into Math 122 (calculus) or higher on the Mathematics Placement Exam.

Courses which satisfy this requirement may be offered in the Department of Mathematics and Statistics or in other departments that offer courses satisfying the described criteria and requiring the use of the skills of Math 110 as part of the course content (Math 111 does not satisfy this requirement). These skills are those derived from the study of arithmetic, algebra, geometry, and the real number system, including the use of algebraic equations, inequalities, and systems of linear equations. Courses satisfying the proficiency must significantly advance students' mathematical skills and competencies beyond the level of one year of elementary algebra.

**COURSES THAT ENHANCE A PROFICIENCY OR DEVELOP ANOTHER ONE (Proficiency 4)**

**Writing**

Advanced writing courses should promote mastery of the mechanical, rhetorical, or aesthetic conventions of writing.

**Mathematics or Quantitative Reasoning**

The second course in mathematics or quantitative reasoning that students may take for general education credit should build upon the skills developed in their required quantitative reasoning course or its equivalent. Courses may be selected from statistics, discrete mathematics, general topics in mathematics, foundational calculus, or other related approved courses.

**Critical Thinking**

Critical thinking is the art of reasoning, which may be defined as reaching reasonable and reflective judgments focused on what to believe and do, or on how to interpret others words and deeds. Courses in this area should help students become more proficient in reasoning when they listen, read, think, evaluate, write, and speak, and when they carry out plans of action. To this end, the courses have at least two of these characteristics:

- provide skills in making several kinds of distinctions: between arguments (chains of reasoning) and other information, between conclusions and premises, between the different patterns of arguments, between complete and incomplete presentations of arguments, between strong and weak arguments, and between cogent and ineffective ways of exposing weak arguments.
- provide skills in distinguishing fact from opinion, in constructing and critiquing arguments, and in becoming sensitive to fallacies and other pitfalls of logical reasoning.
- provide sensitivity methods of overcoming differences that obstruct agreements to cooperate, so that the parties may come to an accord on how to interact with a minimum of dissatisfaction and a maximum consideration of the merits of each side.
- provide skills in planning tasks involving choices and uncertainties. To develop these skills, students should learn techniques for analyzing and operationalizing the tasks, e.g., formulating objectives, flow-charting, programming, and assessing probabilities.

**Oral Communication**

Courses in oral communication should promote a breadth of skills in listening and clear expression in interpersonal or public speaking situations. Courses that satisfy this proficiency should foster the ability to use appropriate listening and expressive skills, to inform and persuade, and to analyze and synthesize for problem solving in interpersonal or public settings.

**American Sign Language**

Courses should enable students to recognize, describe, and produce under appropriate conditions the basic grammatical features and vocabulary of American Sign Language and the sign language derived or in which the language flourishes. Two semesters of college-level foreign language study will satisfy this requirement; students entering the University with college-level knowledge of a foreign
language will be allowed to satisfy this requirement by taking two more advanced language courses or by taking two semesters of yet another foreign language.

Criteria for Courses in the Distribution Areas

Area I, Fine Arts
Courses which meet the fine arts requirement are designed to provide experiences and develop skills that promote awareness of the imaginative and inventive capacities of the mind and the aesthetic qualities of works of fine art. Courses may focus on the role of art or the arts in a culture or on the enhancement of life they provide the individual.

Area II, Humanities
Humanities courses offer the opportunity to study some of the forms by means of which human beings have reflected upon and represented human experience and the varieties of the human condition. These forms are mostly linguistic—literary, philosophic, historical, artistic, and religious. Sources studied in the humanities courses should be presented in ways that develop appreciation for their intellectual and aesthetic integrity and their imaginative views. Students should be studied in ways that require effort of response and reflection, and expand the students' critical and empathic capacities.

Area III, The United States: Cultures and Issues
The United States has always been, and will continue to be, a nation of great cultural and human diversity, its citizens deriving from many different religious, racial, and social groups. As the United States, increasingly multicultural and aware of the rights of its diverse citizenry, strives to include all groups fully into the national life, a multicultural perspective needs to be incorporated into a student's general education.

Area IV, Other Cultures and Civilizations
Undergraduate education is based almost entirely on the Greco-Judaic-Christian tradition, commonly referred to as Western culture. Western achievements—especially in the realm of science and technology—have been overt present. Despite a Western powers built vast overseas empires whose impact has been far-reaching and varied; sometimes devastating. As a part of this legacy, our perceptions regarding the human condition are dominated by the Western view of the West. Students should be made aware that the Western experience forms but a part of the human experience. Courses in this area enable students to understand the Western impact, diverse perceptions of the human condition, and the bases of different world-views.

Area V, Social and Behavioral Sciences
The courses in the social and behavioral sciences provide students with an understanding of human society, its cultures and environments, or of the dynamics of individuals and groups.

Area VI, Natural Sciences with Laboratory
Laboratory courses in the natural sciences which meet the general education requirement require students to interact with objects of nature and to use instruments that permit careful examination of natural phenomena. They require students to use scientific methods to collect and analyze data and to report results. These courses have a laboratory period of at least one hour and fifty minutes per week. Courses must carry at least 4 hours but no more than 5 hours of credit.

General purpose laboratory courses which instruct in scientific methods independent of a particular science discipline are not eligible for satisfying the general education laboratory sciences requirement. Only discipline-specific courses in the areas of physical sciences, earth sciences or life sciences satisfy this requirement.

Area VII, Natural Science and Technology: Applications and Implications
If students are to understand contemporary life, they should understand the implications of natural science and technology as applied to health, social, economic welfare, the storage, transfer, and processing of information; and the management of society's impact on the environment with sensitivity to ecological and practical applications and implications.

Area VIII, Health and Well-being
Courses which satisfy this area must advance students' knowledge and ability to influence their own health. Course content should examine national health priorities regarding the reduction of preventable death, disease and disability among students and must include material on AIDS, HIV/AIDS, and alcohol and substance abuse.

Courses which satisfy this requirement should improve a student's capacity to make healthy life-style choices. Students should improve their ability to understand the implication of different life-styles.

Courses may be drawn from any department within the University. This area requirement supersedes all but the last sentence of University requirement no. 8 on page 31 of the 1993-95 Undergraduate Catalog. [The sentence reads: "A maximum of eight hours of general physical education may be counted toward graduation."]

General Education Program Courses
Approved as of 4/2/97

Proficiency 1: College-Level Writing
BIS 142 Informational Writing 3, ENGL 105 Thought and Writing 4, IME 102 Technical Communication 3, PHIL 100 Critical Thinking and Writing 4

Proficiency 2: Baccalaureate-Level Writing
Does not count toward 37 credit minimum General Education hour requirement. See your curriculum or major program advisor for listings in your area of study.

Proficiency 3: College-Level Mathematics or Quantitative Reasoning
MATH 114 Excursions in Mathematics 3, MATH 116 Finite Mathematics and Applications 3, MATH 118 Precalculus Mathematics 3, MATH 122 Calculus I 4

MATH 150 Number Concepts for Elementary/Middle School Teachers 4
MATH 160 Statistics and Data Analysis 3
MATH 190 Survey of Mathematical Ideas 4
MATH 200 Calculus with Applications 4

Proficiency 4: Enhance or Develop a Proficiency
A course or courses in one of the following categories:

Proficiency 4a, Advanced Writing
ENGL 205 Intermediate Writing 4, ENGL 363 Research Papers 3, ENGL 364 Feature and Article Writing 3, ENGL 365 Reviewing for the Press 3, ENGL 462 Advanced Writing 4

Proficiency 4b, Mathematics or Quantitative Reasoning
MATH 122 Calculus I 4, MATH 123 Calculus II 4, MATH 151 Geometry for Elem/Mid School Teachers 3

Proficiency 4c, Critical Thinking
PHIL 225 Deductive Logic 3, PHIL 230 Introduction to Formal Logic 4, PHIL 325 Inductive and Scientific Reasoning 4, FSCI 105 Critical Thinking about Politics 3

Proficiency 4d, Oral Communications
COM 104 Public Speaking 3, COM 170 Interpersonal Communication 3

Proficiency 4f, Computer Science
CS 111 Computer Science 4, CS 112 Computer Science II 4

Proficiency 4g, Foreign Languages
Two semesters of college-level foreign language study will satisfy this requirement. Students entering the University with college-level knowledge of a foreign language will be allowed to satisfy this requirement by taking more advanced language courses or by taking two semesters of yet another foreign language.

## Distribution Area 2: Humanities

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<thead>
<tr>
<th>A-S</th>
<th>Study Abroad - WMU Programs</th>
<th>1-16</th>
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</thead>
<tbody>
<tr>
<td>A-S</td>
<td>Study Abroad - Non-WMU Programs</td>
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<tr>
<td>A-S</td>
<td>Foreign Studies Seminar - Humanities</td>
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<tr>
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<td>370 History of Riley and Communication</td>
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<tr>
<td>ENGL</td>
<td>111 Myth and Folk Literature</td>
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<td>ENGL</td>
<td>112 Literary Classics</td>
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<td>252 Shakespeare</td>
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<td>ENGL</td>
<td>319 Literature in Our Lives</td>
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<td>ENGL</td>
<td>311 Our Place in Nature</td>
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<td>ENGL</td>
<td>312 Western World Literature</td>
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<td>ENGL</td>
<td>315 The English Bible as Literature</td>
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<td>ENGL</td>
<td>416 Women in Literature</td>
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<td>101 Modern Western World</td>
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<td>HIST</td>
<td>145 Heroes and Villains in the Middle Ages</td>
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<td>212 American Culture</td>
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<td>300 Arts and Ideas</td>
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<td>HIST</td>
<td>301 Modern Arts and Ideas</td>
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<td>LANG</td>
<td>350 Foreign Lit. In Eng. Translation: Views</td>
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<td>200 Introduction to Philosophy</td>
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<td>201 Introduction to Ethics</td>
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<td>303 Existentialist Philosophies</td>
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<td>360 Intro to History of Political Theory</td>
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<td>100 Religions of the World</td>
<td>3</td>
</tr>
<tr>
<td>REL</td>
<td>305 The Christian Tradition</td>
<td>4</td>
</tr>
<tr>
<td>REL</td>
<td>306 The Jewish Tradition</td>
<td>4</td>
</tr>
<tr>
<td>REL</td>
<td>332 Religion and Social Ethics</td>
<td>3</td>
</tr>
<tr>
<td>RUSS</td>
<td>310 Russian Civilization</td>
<td>3</td>
</tr>
<tr>
<td>WMS</td>
<td>100 Media and the Sexes</td>
<td>3</td>
</tr>
</tbody>
</table>

## Distribution Area 3: U.S. Cultures

| ANTH | 347 Ethnicity/Multiculturalism | 3 |
| BAS | 200 Black Presence | 3 |
| BAS | 210 Black Nationalism in America | 3 |
| BAS | 300 African Beginnings to 1865 | 3 |
| BAS | 301 Black Experience | 3 |
| BAS | 310 The Black Woman, Hist. Persp. | 3 |
| BAS | 314 The Black Community | 3 |
| BAS | 320 Social Development and Community | 3 |
| BAS | 350 Blacks in Michigan | 3 |
| BAS | 360 Black Woman-Man | 3 |
| ECON | 309 Women and the Economy | 3 |
| ECON | 222 Literatures and Cultures of the U.S. | 3 |
| ENGL | 223 African-American Literature | 4 |
| ENGL | 484 Multi-Cultural American Literature for Child | 3 |
| HIST | 120 Outline of African History | 3 |
| HIST | 210 United States since 1890 | 3 |
| HIST | 316 Women in United States History | 3 |
| HIST | 326 American Indian Cultural History | 3 |

## Distribution Area 4: Other Cultures

| A-S | Study Abroad - WMU Programs | 1-16 |
| A-S | Study Abroad - Non-WMU Programs | 1-16 |
| ANTH | 120 Peoples of the World | 3 |
| ANTH | 339 Cultures of Latin America | 3 |
| ANTH | 342 Cultures of Africa | 3 |
| ANTH | 345 Cultures of the Middle East | 3 |
| ANTH | 346 Indians and Eskimos | 3 |
| ENGL | 387 Studies of World Cultures and Cultures | 3 |
| ECON | 389 Latin American Economics | 3 |
| ENGL | 313 Asian Literature | 3 |
| ENGL | 314 African Literature | 3 |
| ECON | 381 South America | 3 |
| ECON | 382 Mexico and the Caribbean | 3 |
| ECON | 386 Sub-Saharan Africa: Man, Environment, Resources | 3 |
| ECON | 387 Middle East and North Africa | 3 |
| ECON | 389 Monsoon Asia | 3 |
| HIST | 270 Asian Civilizations | 4 |
| HIST | 376 Modern East Asia | 4 |
| HIST | 364 Modern Indonesia | 4 |
| HIST | 385 Modern Middle East | 4 |
| HIST | 388 Intro. To African Civilization | 4 |
| MUS | 352 Non-Western Music | 4 |
| PSCI | 341 African Political Systems | 4 |
| PSCI | 342 Asian Political Systems | 3 |
| PSCI | 346 Women in Developing Countries | 4 |
| REL | 301 Buddhist Traditions | 4 |
| REL | 302 Religion in the Indian Tradition | 4 |
| REL | 303 Chinese Religion | 4 |
| REL | 304 African Religion | 4 |
| REL | 307 The Islamic Tradition | 4 |
| REL | 308 Japanese Religion | 4 |
| SOC | 304 Non-Western World | 4 |
| SOC | 334 Pacific Rim Societies | 3 |
| SOC | 336 Modern Japanese Society | 3 |

## Distribution Area 5: Social and Behavioral Sciences

| A-S | Study Abroad - WMU Programs | 1-16 |
| A-S | Study Abroad - Non-WMU Programs | 1-16 |
| A-S | Foreign Studies Seminar - Social Sciences | 1-6 |
| ANTH | 100 Human Origins | 3 |
| ANTH | 110 Lost Worlds/Archaeology | 3 |
| ANTH | 140 Anthropology in Action | 3 |
| ANTH | 210 Intro to Archeology | 3 |
| ANTH | 240 Principles of Cultural Anthropology | 3 |
| ANTH | 343 Cultures of Europe | 3 |
| BUS | 170 Introduction to Business | 3 |
| BUS | 220 Introduction to Global Business | 3 |
| COM | 200 Intro to Communication | 3 |
| ECON | 107 Contemporary Domestic Eco. Issues | 3 |
| ECON | 108 Contemporary Int'l Economic Issues | 3 |
### Distribution Area 7: Natural Science with Lab

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 250</td>
<td>Intro to Bio Anthropology</td>
<td>4</td>
</tr>
<tr>
<td>BIOS 105</td>
<td>Environmental Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 110</td>
<td>Biology Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 112</td>
<td>Principles of Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 234</td>
<td>Outdoor Science</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 101</td>
<td>General Chemistry I - Beginner</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 102</td>
<td>General Chemistry I - Intermediate</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 103</td>
<td>General Chemistry I - Post-Intermediate</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 107</td>
<td>Chem of Textiles and Design Media</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 150</td>
<td>Chemistry in Society</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 105</td>
<td>Physical Geography</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 107</td>
<td>Earth Studies</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 130</td>
<td>Physical Geology</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 171</td>
<td>Evolution of Life - Geol. Perspective</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 105</td>
<td>Introductory Astronomy</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 109</td>
<td>Elementary Physics</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 113</td>
<td>General Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 114</td>
<td>General Physics I - Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 205</td>
<td>Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 206</td>
<td>Mechanics and Heat - Laboratory</td>
<td>4</td>
</tr>
</tbody>
</table>

### Distribution Area 8: Health and Well-being

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADA 225</td>
<td>Legal and Illegal Drugs: Personal and Social Impact</td>
<td>3</td>
</tr>
<tr>
<td>PEGN 171</td>
<td>Health and Wellness - Water Aerobics</td>
<td>2</td>
</tr>
<tr>
<td>PEGN 172</td>
<td>Health and Wellness - Circuit Fitness</td>
<td>2</td>
</tr>
<tr>
<td>PEGN 173</td>
<td>Health and Wellness - Jogging</td>
<td>2</td>
</tr>
<tr>
<td>PEGN 174</td>
<td>Health and Wellness - Walking</td>
<td>2</td>
</tr>
<tr>
<td>PEGN 176</td>
<td>Health and Wellness - Racquet Sports</td>
<td>2</td>
</tr>
<tr>
<td>PEGN 177</td>
<td>Health and Wellness - Climbing Tech</td>
<td>2</td>
</tr>
<tr>
<td>PEGN 178</td>
<td>Health and Wellness - Martial Arts</td>
<td>2</td>
</tr>
<tr>
<td>PEGN 179</td>
<td>Health and Wellness - Figure Skating</td>
<td>2</td>
</tr>
<tr>
<td>PEGN 180</td>
<td>Health and Wellness - Beginning Swimming</td>
<td>2</td>
</tr>
<tr>
<td>PEGN 181</td>
<td>Health and Wellness - Inter. Swimming</td>
<td>2</td>
</tr>
<tr>
<td>PEGN 182</td>
<td>Health and Wellness - Swim Conditioning</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 111</td>
<td>Healthy Living</td>
<td>2</td>
</tr>
</tbody>
</table>

### General Education Requirement for Transfer Students

All students graduating from WMU must meet the thirty-seven semester hour requirements of the General Education Program. This must include at least two courses at the 300-400 level in the distribution areas and, in addition, the baccalaureate-level writing requirement.

1. Students who have fulfilled the requirements of the MACRAO Articulation Agreement and are transferring from participating Michigan Community Colleges:

   - Colleges listed below have signed the MACRAO Articulation Agreement. Transfer students from these schools whose transcripts have been appropriately identified and certified as having fulfilled the requirements of the MACRAO Agreement by their respective community colleges will have satisfied WMU's lower level General Education requirements. Such students need only satisfy Western's requirement of six hours of 300-400 level General Education coursework from the distribution areas, and complete the baccalaureate-level writing course (Proficiency 2). In addition, the University will determine the equivalence and applicability of transferable community college courses in meeting other graduation requirements.

2. Transfer Students without MACRAO Certification:

   - Students who transfer from Michigan community colleges and who have not fulfilled the requirements of the MACRAO Articulation Agreement will have their coursework evaluated according to the General Education requirements as described in Western's General Education Program Transfer Guides available at individual community colleges. In order to determine remaining General Education requirements, students should consult their curriculum advisor.

3. Transfer Students from all other colleges:

   - Students will have their transfer work evaluated according to the General Education requirements as described in the General Education Policy section of this catalog. In order to determine remaining General Education requirements, students should consult their curriculum advisor.

4. Waiver of junior-senior requirement for transfer students with advanced standing:

   - A student transferring ninety or more semester hours may be eligible to have the junior-senior General Education requirement waived, provided that a minimum of thirty semester hours are from a four-year college or university. Such students should consult their curriculum advisor for further information.

### Major and Minor Requirements

A major is a sequence of related courses totaling a minimum of twenty-four hours. A minor is a sequence of related courses totaling a minimum of fifteen hours.

1. The student’s major and minors will be the subject specialization, such as mathematics or accounting.

2. Departmental requirements for a number of majors and minors are listed elsewhere in this catalog. Where requirements are
10. Only approved majors and minors listed in the catalog can be placed on a student record. Not specified, students should consult the departmental advisors for approval of a major or minor program as soon as possible but not later than when the student reaches junior status.

3. Most candidates for a degree must complete a major and a minor. There are some exceptions which the student advisor will explain to them.

4. In certain cases "group" majors totaling a minimum of thirty hours and "group" minors totaling a minimum of twenty hours are permitted.

5. Under certain conditions General Education courses may be counted toward major and minor requirements. (See departmental requirements.)

6. The following courses are not to be counted as satisfying major and minor requirements:
   a. Required professional courses in education.
   b. Required courses in general physical education.
   c. A combination of foreign language courses, or of English or American Literature courses with a foreign language, is not permissible.
   d. Mathematics courses may not be counted towards a science (physics, geography, or chemistry) major or minor sequence, but may be required to satisfy curricular requirements.
   e. Courses elected to satisfy requirements in one major and/or minor may not be counted again to satisfy requirements in another major and/or minor.

10. Only approved majors and minors listed in the catalog can be placed on a student record.

Academic Advising
The faculty and administration of Western Michigan University believe that academic advising is a necessary part of undergraduate education. The University has committed many faculty and staff to this essential service, and strongly urges all students to make full use of the available resources in order to receive the best possible education.

All students should consult with their curriculum advisors who will help them plan their degree programs. Curriculum advisors offer academic advising which includes General Education requirements, specific curriculum requirements, career opportunities, etc. In addition, they offer academic guidance, that is, exploration of alternatives and other educational possibilities. This is a useful and productive means of attempting to match a student's interests and abilities with an academic program. Curriculum advisors will make referrals to other advising facilities and departmental advisors when it is appropriate. It should be emphasized that it is the student's responsibility to arrange to meet with curriculum and/or departmental advisors.

A listing of curriculum advisors may be found in the Schedule of Classes, which is published each semester and session. It is important that transfer students bring their most recent Credit Evaluations to these conferences. Transfer students are urged to take advantage of Western Michigan University's comprehensive advising services.

COLLEGE ADVISING OFFICES
College of Arts and Sciences
2307 Friedmann Hall, 387-4366
Haworth College of Business
2130 Schneider Hall, 387-5075
College of Education
2504 Sangren Hall, 387-3474
College of Engineering and Applied Sciences
2038 Kohrman Hall, 387-4033
College of Fine Arts
2146 Dalton Center, 387-4672
College of Health and Human Services
B-121 Henry Hall, 387-2660
University Curriculum
203 Moore Hall, 387-4410
Lee Honors College
Main Office, Lee Honors College Building, 387-3230
General University Studies (GUS) Program
A-103 Elsworth Hall, 387-4160

Freshman Graduation Rates
FULL-TIME DEGREE-SEEKING BEGINNING FRESHMEN, CLASS OF 1990
Number of Beginners: 2,864
6 years
Number of Graduates: 1,495 (52.2%)
REGISTRATION, RECORDS, REGULATIONS

Registration

Advance Registration
Western Michigan University offers advance registration for each enrollment period as described in the Schedule of Classes issued prior to each semester and each session. Students are encouraged to take advantage of advance registration but are cautioned that the tuition fee bill must be paid in full by the specified date or their entire schedule will be cancelled.

Late Registration Fee
See Student Fees.

Changing Courses (Drop/Add)
Students may enroll in (drop) any course through the first five days of classes of a semester or session. The final date for adding courses is published in the Schedule of Classes.

Only students who have a class that is not officially scheduled to meet during the five day drop/add period will be given an additional opportunity to drop/add. See the Schedule of Classes for details of this procedure.

Students may withdraw (drop) classes through the fifth (5th) day of the term and the course will not be reflected on the student’s official transcript. All withdrawals received after the drop/add period will be reflected on the student’s academic record as a non-punitive “W”.

Students may withdraw (drop) from courses without academic penalty through the first Friday past mid-semester at the Registrar’s Office. A non-punitive “W” will be reflected on the student’s academic record for any classes dropped after the drop/add period and before the mid-semester withdrawal deadline. The final date for dropping is published in the Schedule of Classes. Students may not withdraw from any class after this date without academic penalty.

Withdrawal From Classes After the Official Date to Drop
1. The final date to withdraw officially from classes without academic penalty is the first Friday past midsemester. The specific date is published in the Schedule of Classes each semester or session. (Each student is encouraged to confer with the instructor before withdrawing from class as the student may not re-register for the class.)
2. Students who wish to withdraw from class officially after the first Friday past midpoint of the semester because of genuine hardship (i.e., illness, death in the immediate family), must be passing the course and must file a written appeal on forms which may be obtained from the Registrar’s Office.
3. An Appeals Committee to review late withdrawals will be appointed by the Provost and Vice President for Academic Affairs.
4. The Appeals Committee may request information from the instructors involved and from other appropriate sources.
5. The Appeals Committee will rule upon the basis of the student’s written application and any additional information received. The action of the Appeals Committee is final.

University Tuition Scholarship Waiver
Undergraduate students interested in taking advantage of the University Tuition Scholarship Waiver must report to the Registrar’s Office, Seibert Administration Building to pick up the authorization form.

Students who meet the following criteria are eligible to participate in this program:
1. Must have previously earned thirty hours of credit from WMU.
2. Must presently be enrolled and have paid for fifteen hours of credit for the semester they are seeking the tuition waiver.
3. Must have an overall G.P.A. of 3.25 at Western Michigan University.
4. Must be an undergraduate student in a degree program.

Undergraduate students who meet the qualifications may select one course per semester outside their major, in underenrolled courses, during the drop/add week only.

Once the students have ascertained that they would like to participate in this program and meet all the criteria, they should go to the Registrar’s office for the authorization form. The student will present the signed authorization card to the Customer Account Services, 1270 Seibert Administration Building as their payment.

Academic Regulations

Class Attendance
Students are responsible directly to their instructors for class and laboratory attendance, and for petitions to excuse absences.

Examinations
1. All students enrolled in a course in which a final examination is given must take the examination.
2. Student requests for an examination at any other time than that scheduled may not be honored.

Independent Study
Independent Study refers to enrollment in an appropriately designated, variable-credit course for a specific plan of study, authorized and supervised by a designated, consenting faculty member.

Independent Study is not a substitute for regular courses, but an enrichment opportunity. Normally, it is a project designed to allow students to investigate an area of interest not within the scope of a regular course, to probe in more depth than is possible in a regular course, to obtain an educational experience outside that normally offered by a regular course.

Since individual Independent Study projects are not normally reviewed through the usual departmental and University processes, it is essential that the academic adequacy of such projects be assured by some other means applied consistently throughout the University.

The following policy guidelines are intended to serve that function.

PROPOSALS FOR INDEPENDENT STUDY
Independent Study requires an adequate description of the work to be undertaken, requiring planning in advance of the registration period. Sufficient time, therefore, must be allowed for such planning and for obtaining the necessary faculty and administrative approvals.

While the Independent Study project is normally student-initiated, early interaction with faculty is essential in the development of a mutually acceptable project description. At a minimum, such a description should contain an outline of the study topic, specification of the work to be done and the materials to be read, the credit to be given, the type and frequency of faculty-student contacts, and a statement of the evaluative criteria to be used by the faculty member.

APPROVAL PROCESS
The faculty member must accept and approve the student and the project, and then submit the agreed-upon proposal on the appropriate University form to the department chairperson for approval. If the chairperson approves, information copies of the form must be submitted to the dean and the Registrar.

The granting of approval by the department chairperson may involve considerations, such as faculty workload, which go beyond the merits of the project.

FACULTY RESPONSIBILITY
Independent Study is basically a tutorial process, necessarily involving substantial faculty participation. In that respect, it should be distinguished from "credit by examination," a different option in which the role of the faculty member is primarily evaluative.

A student is on his/her own in Independent Study in that it involves no class meetings or formal lectures, but the faculty member is the responsible custodian of the project, obliged
to provide guidance, assistance, criticism, suggestion, and evaluation.

Interinstitutional Study
Western Michigan University undergraduate students may take classes at Davenport College, Kalamazoo College, and Kalamazoo Valley Community College through a cooperative program. Information and enrollment forms may be obtained from the Registrar’s Office, Room 3210, Seibert Administration Building. Participation is generally restricted to students in good academic standing and to courses not offered at WMU.

Grading
Grading System
The student receives one grade in each course taken. This grade combines the results of coursework, tests, and final examinations. Grades are indicated by letters, to each of which is assigned a certain value in honor points per hour of credit, as shown in the table below.

<table>
<thead>
<tr>
<th>Grade Significance</th>
<th>Honor Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outstanding, Exceptional</td>
<td>4.0</td>
</tr>
<tr>
<td>Extraordinary</td>
<td>3.5</td>
</tr>
<tr>
<td>BA</td>
<td>3.0</td>
</tr>
<tr>
<td>Very Good, High Pass</td>
<td>2.5</td>
</tr>
<tr>
<td>CB</td>
<td>2.0</td>
</tr>
<tr>
<td>Satisfactory, Acceptable</td>
<td>1.5</td>
</tr>
<tr>
<td>Adequate</td>
<td>1.0</td>
</tr>
<tr>
<td>D</td>
<td>0.0</td>
</tr>
<tr>
<td>E</td>
<td>0.0</td>
</tr>
<tr>
<td>F</td>
<td>0.0</td>
</tr>
<tr>
<td>W</td>
<td>0.0</td>
</tr>
<tr>
<td>I (Incomplete)</td>
<td>0.0</td>
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<tr>
<td>CR</td>
<td>0.0</td>
</tr>
<tr>
<td>NC</td>
<td>0.0</td>
</tr>
<tr>
<td>AUD (Audit, non-credit enrollment)</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Credit/No Credit System
The regulations of a system supplementing the A.B.C.D. and E grading system but not replacing it, except as the student wishes, are as follows:
1. The name of the program shall be Credit/No Credit.
2. "Credit" will be posted for each student who earns the grade of "C" or better. "No Credit" will be posted for any grade below a "C". Faculty members will not be notified whether a student is taking a course for a grade or for Credit/No Credit.
3. A student may elect for Credit/No Credit any course approved for General Education or General Physical Education credit, as well as other courses not counting toward his/her major or specified in his/her curriculum as defined in the University Undergraduate Catalog.
4. Directed Teaching, a required course, is taken on a credit/no credit basis.
5. Acceptance of Credit/No Credit in required courses may be permitted on an individual basis by the head of the department or dean of the college approving the course.
6. A student may change only during the drop/paid period from Credit/No Credit to grade or from grade to Credit/No Credit. Generally, no changes are allowed once classes begin.

Grade Changes
A student who believes that an error has been made in the assignment of a grade must initiate contact with the faculty member involved within ninety days of the end of the semester for which the grade was assigned. Failure to act within the ninety day time period will disqualify the student from further consideration of the matter.

Honors Points
The number of honor points earned in a course is the number of semester hour credits given by the course, multiplied by the number of honor points per hour of credit corresponding to the letter grade received, as shown in the preceding table. For example, a grade of B in a 4-hour course gives 4 x 3, or 12 honor points.

Grade Point Average
A grade point average is obtained by dividing the total number of honor points earned by the total number of semester hours of work for which the student is officially enrolled during any period. For example, a total of thirty-two honor points earned in a semester by a student officially enrolled for sixteen hours of work, gives a grade point average of 3.216 or 2.0 for the semester.

Dean’s List
To gain a place on the Dean’s List for a semester, a student must:
1. Have completed at least fourteen semester hours of work during the fall or winter semester for letter grade.
2. Have a grade point average of at least 3.50 for the semester.

Honors
Honors are conferred upon graduating students who have displayed a high level of performance during their university career.

Academic Standards
A student must earn an overall grade point average of at least 2.0 to satisfy degree requirements. The scholarship policy is intended to encourage satisfactory progress toward that end. The policy operates as follows:
1. Good Standing
   A student is in good standing whenever his/her overall grade point average is at least 2.0.
2. Warning
   Whenever the grade point average for any enrollment period is less than 2.0, but the overall grade point average is 2.0 or above, the student will be warned.
3. Probation
   The student will be placed on probation whenever his/her overall grade point average falls below 2.0.
4. **Probation Removed**
   Whenever the conditions of Good Standing are restored, Probation will be removed.

5. **Continued Probation**
   If the overall grade point average increases .01 or better, although still below 2.0, the student may be continued on Probation for an additional enrollment period.

6. **Dismissal**
   The student who fails to increase his/her overall grade point average .01 or better at the end of an enrollment period of Probation or whose overall grade point average fails to reach 2.0 at the end of one enrollment period of Continued Probation, will be dismissed from the University. Students who have been dismissed from Western are expected to remain out at least one full fifteen-week semester. Exceptions may be granted at the discretion of College Admission Committees if the increase has been substantial but still falls fractionally short of the minimum 2.0 requirement. Students may apply for re-admission through their college advising office.

   College committees are concerned with the extent to which the dismissed student has resolved the causes of past academic difficulty. It is required, therefore, that the student include a written statement with the re-admission application.

### Credit By Examination

**Advanced Placement Program (APP)**

Western Michigan University participates in the Advanced Placement Program (APP) of the College Board. Students with scores of at least 3 (4 in the case of Physics) on any APP exam will receive college credit in the appropriate subject. Students should have College Grade Reports of their test scores sent to the Office of Admissions and Orientation at Western Michigan University (college code 1902). After APP College Grade Reports of examination scores are received and evaluated, the Office of Admissions and Orientation will notify students of the specific decisions regarding any credit award. After students’ enrollment at Western, the Office of the Registrar will post course credit to students’ transcripts. For more information on APP score requirements and equivalent credit awarded at Western, write to the Office of Admissions and Orientation.

**College Level Examination Program (CLEP)**

This program gives individuals the chance to earn college credit by examination in a variety of areas of study. There are two types of tests offered—General Examinations and Subject Examinations. Western Michigan University’s credit award policies for each type are noted below. Interested students should check with their WMU academic advisors before taking testing plans. Official score reports of CLEP testing should be sent to Western (college code 1902) by the Educational Testing Service (ETS).

#### General Examinations
1. The general CLEP examination is available only to nontraditional students at WMU.
2. A nontraditional student is defined as a person who has spent a minimum of four years in non-school occupations since attention to an educational institution on a full-time (minimum of twelve semester hours) basis.
3. Nontraditional students may take the general CLEP examinations only before completing fifteen hours after entering or re-entering WMU.

**Subject Examinations**

CLEP Subject Examinations test specific knowledge areas and, unlike the General Examinations, any Western student may take them and receive credit with appropriate scores. The University awards credit to students based on fifteen of the CLEP Subject Examinations. Students may not receive CLEP subject credit if they have already received college credit for an equivalent course. Interested persons may contact the Office of Admissions or Testing Services for information on Western’s score requirements and course credit.

### Comprehensive Examinations

Each department shall have the authority, with the approval of its dean, to establish a procedure for granting credit for any course in that department through comprehensive examinations. All comprehensive examinations should be administered by authorized personnel determined by the department. Each department should determine those courses for which the comprehensive examination procedure applies.

All credit by examination is subject to the following requirements:

1. All credit will be posted as credit only, without grade or honor points. Students who do not achieve a sufficient score for credit will have no entry made.
2. Credit by comprehensive examination in courses numbered 300 or higher can be used to meet the requirement that one-half of all academic work be completed at a four-year degree-granting institution.
3. Credit by comprehensive examination may be used to meet all other University graduation requirements, except the minimum residence credit requirements.
4. Credit by comprehensive examination can be posted only for admitted students who have either previous or current enrollment.
5. All credit by comprehensive examination is normally considered undergraduate credit.

Examination fees are assessed on a credit hour basis and are the same for all students. The current fee schedule: less than four credit hours, $50.00; four credit hours to eight credit hours, $100.00. By special arrangement, some course examinations may require higher fees.

### Records

**Graduation**

*Summer Session*
Apply no later than April 1st.

*Fall Semester*
Apply no later than August 1st.

*Winter Semester*
Apply no later than December 1st.

*Spring Session*
Apply no later than February 1st.

### Completion of Work—Final Date

All work taken either on or off the campus must be completed by graduation date. Transcripts of completed work earned off the campus will be received after the end of the semester only in cases where there are extenuating circumstances. Courses taken or completed after the summer session will not count toward bachelor’s degrees, teaching certificates or comparable transferred courses, from the General Education Program.

#### Under no circumstances

- Students who fail to meet academic requirements, will be removed from graduation lists automatically. Such students will be placed in the class of the succeeding semester or session only after reaplication for graduation, assuming requirements can then be met. When a student fails to meet requirements for graduation resulting from failed courses, from incomplete work, or for any reason for which the student accepts responsibility or has control, responsibility rests with the student to reapply for the next regular graduating class following completion of his/her requirements.

**Transcripts**

A student desiring a transcript of his/her record in this University should write or go to the Office of the Registrar, giving dates of attendance and, if a graduate, the date of
graduation. All names under which the student may have been enrolled and a social security number should be provided. All copies are $3.00 each. No transcript will be released except upon written authorization of the student. Official sealed transcripts are mailed only to third parties, i.e., employers, educational institutions, governmental units.

I.D. Validation Regulations
Each student on campus is required to have an identification card, which includes photo, name, and student signature. Dates, time, and location of I.D. production are determined by the Department of Public Safety. Each new student is eligible for an I.D. card free of charge. Students who fail to secure their I.D. card during their first semester of enrollment at Western Michigan University will be charged a $10 fee in subsequent semesters. This card is used throughout the student's entire enrollment at Western. There will be a $10.00 charge for a lost or mutilated I.D. card.

Lending this card to anyone, or failure to present it when requested by University officials, is a violation of University regulations and subjects the holder to disciplinary action. Each student is personally liable for all obligations incurred by use of this card. Protect it.

Name Change
Students may maintain academic records under the name used at the time of admission. However, if an active student desires to make an official name change they must report to the Registrar's Office, third floor Seibert Administration Building to record the change. Legal proof may be required and the student will be required to sign a notarized affidavit swearing to the fact the name change is not requested for any fraudulent purposes.
SERVICES FOR STUDENTS

Academic Skills Center
The Academic Skills Center, located at 1042 Moore Hall, is designed to offer students the opportunity to strengthen their learning skills and improve their academic performance. Programs are offered within the following framework:

1. All undergraduates are eligible to register for services; graduate students may register for specific services on a space available basis.
2. Programs and seminars carry no academic credit.
3. There is no charge for services.

WRITING CENTER
The Writing Center offers individual tutoring for students with questions about matters of writing (developing, organizing, focusing, synthesizing) and conventions (style, punctuation, grammar). Computer software related to writing is also available. Undergraduate and international graduate students may drop in or schedule appointments in advance.

STUDENT SUPPORT PROGRAM
The Student Support Program, a United States Department of Education Trio Program, provides support services for undergraduates with academic need who have low incomes, and/or whose parents did not graduate from a four-year college or university. Students selected for the program are entitled to Learning to Learn™ tutoring and receive personal guidance to help them succeed.

COLLEGE SUCCESS SEMINAR
The College Success Seminar helps students learn how to use their time effectively and develop efficient study habits. Students practice techniques for time management, note taking, and test taking. Students also learn whether they are driven by internal or external motivators, as well as investigate their learning style preferences.

DOCUMENTATION WORKSHOP
The Documentation Workshop focuses on using and documenting sources for research papers. APA and MLA styles are introduced. This workshop is a travelling workshop available through instructor's request.

COMPUTER LAB
Registered Academic Skills Center participants may use a variety of software programs in the areas of reading, vocabulary, spelling, and writing. In addition, the SRSE, a well known study skills inventory, is available to all Western students for a $1.00 fee. Prior registration to use the SRSE is not required.

CONTENT TUTORING
Drop-in tutoring for selected courses is available.

SUPPLEMENTAL INSTRUCTION
Student leaders are trained to offer three voluntary weekly review sessions in selected courses. Supplemental Instruction promotes student learning through regularly scheduled review sessions by incorporating extensive group work, collaborative problem solving, application of study skills, and strategies for test preparation.

Career Education
All students are urged to make use of the career education facilities of the University for assistance in deciding upon a major and minor, planning for realistic entry-level jobs, and visualizing a career path for the future. Career counseling and advising are available in the offices of Career Services, Student Employment Referral Service, the University Counseling and Testing Center and curriculum and departmental advisors. A course directly related to career education is UNIV 102, Career Exploration and Development. The Office of Career Services offers seminars and workshops to assist students in their transition from college to the world of work.

A suggested schedule of career education activities follows:

FRESHMEN AND SOPHOMORES
This is the time for assessment and exploration.
1. Be clear as to why you are in college, what a college education means to you, and what you hope the return on your monetary and psychic investment will be. Muddled thinking in any of these areas tends to take a toll on your grade point average, interest in and motivation to attend classes, and willingness to take responsibility for your own academic progress. Talking to a counselor in the University Counseling and Testing Center can help you more clearly think through these concerns.
2. Career testing can help you assess your interests, skills, and abilities. Knowing about yourself in these terms provides vital information needed to make decisions about your education and/or career direction. Since you will be spending a great deal of your time in the next few years becoming knowledgeable in an academic discipline, it follows that you need to be interested in it, have the ability to master the material, and acquire the skills necessary to develop an initial competence in the field. The same things are important to consider in deciding what you will do after you graduate.
3. Discover what your values about work are. Since you will eventually be spending 40 or more hours a week engaged in some activity for which you will be paid, you need to be clear about what settings you prefer—outdoors or indoors, working with people or alone, supervising or being supervised. Routine duties or constant change, staying in one place or traveling. These are just a few of the factors that contribute to satisfaction with your work.

JUNIORS AND SENIORS
This is the time to actively plan for the first job you will hold after graduation.
1. Research various careers for which your educational background would be appropriate, or which interest you but do not require a specific educational background. Read about them, talk to people who are actually working in them, attend meetings and join professional organizations related to them, read publications written by and for these people, and volunteer to work in areas that interest you. Contact the Student Employment Referral Service for assistance in locating internships, summer jobs, or part-time positions related to your career choice. This gives you a chance to explore your profession and provide you with practical experience, which is increasingly more important when seeking full-time employment.
2. Get to know your major professors well. They can give you a lot of support, many valuable tips, and may recommend you to future employers.
3. Get involved in campus activities and/or classes that will help you develop the skills you have identified as being necessary to excel in a career which interests you.
4. Start getting familiar with the office of Career Services. Talk to the counselors, find out how they can help you negotiate the job market. Check on the market projections in your field of interest, learn how to conduct your part of a job interview, learn to write resumes, and learn about the interview and application. Sign up for on-campus interviews. Talk to as many people in your field of interest as you can.

5. Be able to articulate your job objectives—what you want to do, why you feel that you can do it well, and for whom you wish to do it. This is vital information to be able to give potential employers.
6. Career related work experience will help broaden your insights into employment areas.

By utilizing the following services, which are explained in more detail on succeeding
pages, you will be able to fully integrate your academic education with career education:

University Counseling and Testing Center
2510 Faunce Student Services Building
387-1180

Career Services
B Wing Elsworth Hall
387-2745

Student Employment Referral Service
A Wing Elsworth Hall
387-2725

College Advising Offices
Departmental Advising Offices

Career Services
Assistance with career planning and total job search planning is offered free of charge by career resource center, on-campus computer referrals to employers, maintenance Michigan University. These services include: a and referral to other campus agencies. Correspondence such as resumes and cover letters, interviewing videotapes, career workshops and seminars, annual career fairs and referral to other campus agencies.

Children's Place Day Care Center
The Children's Place Day Care Center, located in the middle of campus at 2210 Wilbur, is to toilet trained may be enrolled full-time, vegetarian menu is available each day. Students 2-1/2 to 9 years old and culturally diverse community. The program appropriate activities which address each child's need for fun, creativity, active play, nurtures and supports the development of

Faith and Spiritual Development
Western Michigan University recognizes that helping people to clarify their values, act on their commitments, articulate their own beliefs, and understand the beliefs of others is an important part of the educational process. The University endorses no particular faith or religious tradition, but it welcomes and facilitates the presence of many religious organizations, Christian and non-Christian alike.

The Children's Place philosophy emphasizes child-initiated learning within a culturally diverse community. The program nurtures and supports the development of children by providing developmentally appropriate activities which address each child's need for fun, creativity, active play, communication skills, problem solving, social interaction, rest and nutrition. The program is licensed by the State of Michigan. For more information and an application call 616-387-2277.

Disables Students
Disabled Student Resources and Services assists Western students who have disabilities as they seek to achieve their educational and life goals. DSRD offers advocacy, registration assistance, readers/scribes and other support services. Services include all utilities, television and telephone use, accessibility information, handi-van transportation, adaptive equipment, and referral to other campus and community agencies.

The office is located in the Faunce Student Services Building and can be reached by calling (616) 387-2116.

LEARNING DISABLED STUDENTS
Students with documented learning disabilities may contact the Coordinator of Services for Learning Disabilities to discuss requests for accommodations or other services. Contact the Coordinator at the Center for Academic Support Programs, 203 Moore Hall, (616) 387-4411.

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A broad spectrum of spiritual opportunities including traditional, contemporary, and experimental worship, individual and small group Bible studies, workshops and retreats, study-travel experiences, social concerns, and action groups is available to interested students. Various church groups provide support for clergy who are on the campus ministry. Those professionals are available to students and their families for personal and religious counseling, and materials and resources for religious activities. Campus ministers are not employees of Western Michigan University, but serve as a resource for students as representatives of their various churches.

The Office of Faith and Spiritual Development, which is a unit of the Office of Student Life, serves as a clearinghouse for campus religious programs and is responsible for management of the Kanley Memorial Chapel and for scheduling events there.

The Kanley Memorial Chapel faculty includes an interfaith chapel, several meeting rooms, and offices. It is maintained by the University as a center for religious activities and serves as the meeting place for most student religious organizations. It is also the home of Student Ministries and provides a popular site for weddings. The Kanley Chapel office manager and 11 campus ministries have offices in the bottom level of the building.

In addition to Kanley Memorial Chapel, there are several student centers operated by specific denominations on or near campus. Specific information regarding the religious groups or services on or near campus is available in the Office of Faith and Spiritual Development. Telephone: 387-2501.

Housing
Western Michigan University students may live on or off campus. Two alternatives exist on-campus, Residence Halls and WMU Apartments, and both deliver tremendous value to their residents. The success rate in meeting the diverse needs of their residents is very high and improvements are constantly being made. For these reasons, students should carefully consider the benefits of on-campus housing when choosing where to live. The listed rental fees are complete. They include all utilities, cable TV, and in most cases, many extra benefits not available off-campus. Opportunities to enhance leadership skills and interpersonal assets are more available with an on-campus residence. Your residence hall application will be sent upon admission to Western Michigan University. An apartment application may be submitted before you are officially admitted to the University. The application date is the basis for assignment. The probability of an assignment increases with early application. Admission to the University or submitting a contract for a housing assignment does not guarantee a space will be available. Requests received after capacity are placed on a waiting list.

RESIDENCE HALLS
Twenty-two residence halls in locations close to every academic hall on campus attract over 5,500 students each academic year. These residence halls represent a variety of different backgrounds, cultures, and academic interests.

Most halls offer a variety of services and opportunities for students: reception desk with mail and message services, formal lounges, all-purpose rooms for meetings or studying, extensive fitness/exercise rooms, aerobics, saunas, television viewing areas, refrigerator, paint-your-room program, free VCR use, and academic computer terminals. All rooms are provided with beds, desks, study chairs, dressers and closets.

Any student enrolled at WMU for at least one credit hour may live in a hall. Newly admitted students are automatically sent information (fall—during the month of February, winter—in November, spring and summer—March) detailing the residence hall offerings available for the semester or session they expect to be enrolled.

Many distinct hall environments are available and students are encouraged to indicate their preferred hall and floor(s). Students will often prefer a specific hall because of location or assignment pattern (coed). These preferences are honored as space is available. A few halls are reserved exclusively for upperclassmen and honors students. Other halls attract students interested in health and wellness, extended quiet hours, or international culture.

Depending on the hall, men and women may be separated by suite or floor. Two separate halls are also reserved exclusively for each sex. In locations where coed assignments exist, separate bathrooms and toilet facilities are provided. While most assignments are two students per room, single room assignments are available and some three or four person room assignments are made in the larger rooms.

The WMU housing staff are key players in coordinating the delivery of academic support services and programs to students living in residence halls. They are dedicated to supporting students in their academic and personal success.

Both undergraduate and graduate students are welcome in the halls. During the fall and winter semesters graduate and older students find Davis and Zimmerman Halls of special interest. Students must be at least twenty-one years of age. Halls are open throughout the year to returning or assignment patterns (coed). These preferences are honored as space is available. A few halls are reserved exclusively for upperclassmen and honors students. Other halls attract students interested in health and wellness, extended quiet hours, or international culture.

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and a professional dietitian. All hall residents (except those who live in the room-only hall) must choose between three available plans. Most residents select the Bronco Gold Dining Plan which provides all meals except Sunday evening. For persons leaving campus every weekend, the Bronco Brown Dining Plan, providing meals Monday through Friday, is also available. The Bronco Gold plan includes three meals per week (Monday-Sunday) is also available.

The WMU Dining Service is especially unique because students may eat as often as they wish, in any dining hall on campus, 7:00 a.m. through 6:30 p.m., Monday through Friday (with the exception of the Henry/ Hoekje/Bigelow Cafeteria which is open until 8:00 p.m., Monday through Thursday). Dining Services weekend hours are Saturdays, 7:00 a.m. through 6:00 p.m. and Sunday from 8:00 a.m. until 3:00 p.m. Dining Services: Carryout option provides greater flexibility to students by giving them the choice to eat in their rooms, outside or perhaps with a study group or group of friends. The Carryout option is available in all Dining Halls from 7:00 a.m. through 8:00 p.m., Monday through Thursday and from 7:00 a.m. to 6:30 p.m. Friday.

Many Western Michigan University students discover more about the world in which they live, their colleagues, and themselves through their experiences in a residence hall. It is known that a well-rounded education takes place both in and out of the classroom and involves a variety of experiences. Making new friends, meeting new people from a variety of backgrounds, developing leadership skills, and becoming quickly acquainted with the total University environment are only a few of the advantages of living in a residence hall.

For further information and/or details if information is not received near the date noted above, contact the Residence Hall Office, Faunce Student Services Building, 616-387-4735 or 800-545-6006.

APARTMENT LIVING

Many students choose to live in one of three Western Michigan University Apartment complexes. Student families, single graduate and certain older undergraduate students are eligible. The Apartments are inexpensiveness and convenient to campus. Rental rates, which include parking, all utilities and cable television, are generally lower than area complexes.

The apartments are close to academic buildings, recreation areas, libraries, and the student center. Nearly 585 apartment homes are available. They are open all year and leases are renewable each semester. Residents are quick to find their niche in the apartment community and pleasant relationships are formed between neighbors that often continue long after graduation.

Many play areas, picnic areas, programs and activities for children are available within the complexes. Families with young children can often exchange child care with a nearby family. School buses come through the complex to take children to and from the area public schools.

Make inquiries directly to the WMU Apartment Office, Faunce Student Services Building, Western Michigan University, Kalamazoo, MI 49084-5079. Telephone: 800-882-9819 or 616-387-2175 or fax 616-387-4786.

OFF-CAMPUS HOUSING

Approximately 74 percent of Western's student body live off campus in privately owned housing. Thus, a unique service is provided to assist them in locating a place to live. Rental listings of apartments, houses, and sleeping rooms are maintained and printed for distribution. Listings of students in need of roommates, as well as those available as roommates, are up-dated regularly and used extensively by thousands of students who live off campus and share their housing costs. The Office of Off-Campus Life has also developed a database so that students can access rental or roommate listings, locate car pools or list items to buy or sell.

While most students look toward off-campus living as an opportunity to pursue individual life-style experiences, there are often plagued by strained roommate relations and rental difficulties that interrupt their academic recognition. Making new friends, meeting new people from a variety of backgrounds, developing leadership skills, and becoming quickly acquainted with the total University environment are only a few of the advantages of living in a residence hall.

International Student Services

Western Michigan University has long recognized the value of international educational exchange. Over the years, thousands of students from other nations have entered the University to pursue their educational objectives. This educational exchange has given the University an international atmosphere that has fostered both formal and informal cross-cultural contacts and the development of positive interpersonal relationships on the campus as well as in the community. The Office of International Student Services was established to assist international students at Western Michigan University.

OFFICE OF INTERNATIONAL STUDENT SERVICES

The Office of International Services handles the special needs of international students by processing applications for admission, conducting an orientation program for new foreign students, assisting with housing arrangements, coordinating community programs involving international students, providing immigration advising, serving as a liaison between students, their families, and financial sponsors, and offering personal and social counseling. While at the University, international students are encouraged to participate in academic and social activities as their interests and time allow.

International students interested in seeking admission to Western should contact the Office of International Student Services for an application form and instructions. To qualify for admission, a prospective student must demonstrate to the University that he/she is academically qualified and linguistically capable of undertaking the academic program being proposed. Before a student can be admitted and the Certificate of Eligibility for a visa (Form I-20 or IAP-66) issued, the following items must be on file: educational records documenting all previous secondary and post-secondary schooling, a financial statement that has been signed and returned from a sponsor showing that adequate funds are available to cover the student's educational and living expenses for the duration of studies, and proof of English language proficiency (see below).

ENGLISH COMPETENCY OF STUDENTS FROM NON-ENGLISH SPEAKING BACKGROUNDS

Prospective students from non-English speaking countries must submit the scores of a recognized language proficiency examination prior to initial registration.

Applicants who have successfully completed at least twenty-six semester hours at another accredited U.S. institution may be exempted from this requirement at the discretion of the Office of International Student Services, depending upon the quality of their previous academic work, performance recommendations, and other factors.

The following tests and scores are accepted at Western Michigan University as measures of English competency.

1. Test of English as a Second Language (TOEFL). A score of 500 is required for restricted admission (part-time remedial English and part-time academic studies during the first semester) or 550 for unrestricted admission.
2. Michigan English Language Assessment Battery (MELAB). A score of 75 is required for restricted admission or 7.0 for unrestricted admission.
3. General Certificate of Education Advanced Level Pass in English with grade of A, B, or C from one of the five British-based examining boards only. This is equivalent to a 550 TOEFL.
4. International English Language Testing System (IELTS) using Modules A, B, or C (not the General Training Module). A score of 6.5 is required for restricted admission or 7.0 for unrestricted admission.
5. International Baccalaureate (IB). A grade of 5 in English is required at the Higher Level for unrestricted admission. This is equivalent to a 550 TOEFL.

Some graduate programs require a higher score.

Applicants can be granted conditional admission until English requirements have been met. (See Student Health Insurance for the University's policy on health and accident insurance for foreign students.)

ENGLISH LANGUAGE INSTRUCTION FOR INTERNATIONAL STUDENTS

The Career English Language Center for International Students (CELCIS) provides intensive English language instruction for those prospective students who need further training in English in order to qualify for regular admission to the University. F-1 students in the CELCIS program must be enrolled full-time, twenty hours of classroom instruction per week. Resident aliens and F-2 students may attend CELCIS part-time. Classes at various levels include:

• Speaking and Listening Comprehension
• Grammar
• Academic Reading and Vocabulary Building
• Academic Writing
• Research Paper Writing

Extra-curricular activities include monthly social hour, conversations with Western students, visits to the various cultural programs.

There are four CELCIS terms per year, two 15-week terms (fall and winter) and two seven-week terms (spring and summer). The University Testing and Evaluation Services offers the institutional TOEFL at the end of each term. The Certificate of Eligibility for a visa (Form I-20 or IAP-66) is issued by CELCIS for
Internships

The Student Employment Referral Service offers a full compliment of internship services. WMU students can register for referral to current openings, participate in on-campus recruiting and gain career planning assistance. Services are provided individually or in workshops. The office maintains daily listings of local internship opportunities as well as nationally-recognized programs. Credit for an internship is granted only from an academic department. Eligibility for participation in an internship program usually requires that a student be accepted into an academic major or program, have reached junior standing, and have at least a 2.0 grade point average (GPA). Students can visit the office to register or set up an individual advising appointment. The office is located in A-100 Ellsworth Hall. (616) 387-2725.

The Martin Luther King, Jr. Academy

(formerly MLK Jr. Program)

The Martin Luther King, Jr. Academy is an accelerated teaching and learning development program that has been in existence at WMU since 1968. Named in honor of the late Dr. King, this particular program has the distinction of being the forerunner of similar programs in colleges and universities throughout the United States.

Initially, the program was funded through a grant from the Kellogg Foundation, and was able to provide scholarships as well as remedial help to its participants. "Project 73," the original name of the program, began in the fall of 1968 with sixty WMU freshmen coming from high schools throughout Southwestern Michigan. It now is a year-round program, beginning in the fall of the student's freshman year.

The primary purpose of the MLK Academy is to:

1. encourage students who would not otherwise pursue a higher education to do so;
2. provide supportive services—such as academic advising, vocational and personal counseling and tutoring, to meet the individual’s needs;
3. support students through completion of thirty-six credit hours at the University.

Interested students should apply through the regular University Admissions process for freshmen. The Office of Admissions and Orientation will notify students eligible for consideration, and the MLK Academy staff will arrange a personal, on-campus information session for students who have been admitted to the University.

Students selected for admission and their parents/guardians must:

1. sign and return a contract accepting the terms of the Academy;
2. complete and mail all financial aid forms, and
3. complete an on-campus orientation session.

Minority Affairs, The Division of

The Division of Minority Affairs facilitates the development and continuance of a supportive environment for our ethnic minority student population. As a result, the Division assists the University in the recruitment and enrollment of minority students. The Division of Minority Affairs exists to increase the minority presence and participation at the institution.

Specifically, the Division:

1. provides information to the University community on the importance and value of diversity in this educational process.
2. offers programs and services in response to ethnically specific student needs and concerns, including cultural awareness and student organizational support aimed at increasing minority student retention.
3. monitors students' impressions and satisfaction with delivery of services from other areas to which they have been referred. Provides feedback to these areas on students' perceptions.
4. serves as advocate in presenting concerns that affect the quality of life for minority students on the campus of Western Michigan University, and works with students to identify concerns and to develop solutions.
5. supports programs targeted at pre-college youth in order to increase the participation of minority students in higher education.
6. provides information and on-campus program assistance to the Office of Admissions and Orientation to help increase the recruitment and enrollment of minority students.

The activities of the Division are designed to define and positively react to minority students’ needs and impact their environment. By doing so, students are ensured the greatest opportunity for a successful and relevant educational experience.

Off-Campus Life

The office of Off-Campus Life has designed five distinct databases that students can use to find Off-Campus rental housing, roommates, transportation or items they wish to buy or sell. They can access the database from any on-campus computer or their own personal computer from anywhere in the world. The databases are currently on both the WMU VAX system and the World Wide Web.

The first database is loaded with listings of apartments, homes, rooms and Houses in the Kalamazoo area whenever indicated. The second database allows students to find a ride or riders to car-pool to campus. The fourth database enables students to find others to share a ride long distances on weekends, holidays or semester breaks. The fifth database gives students the opportunity to buy and sell furniture, books, cars and other items.

In addition to these databases, the WMU Off-Campus Life Office has a home page on the World Wide Web. It contains a library of information on residential rental issues, rights, and responsibilities. The success or failure of a student’s academic life can often be traced to the living environment. Don’t minimize the importance of good housing.

For more information on the activities and services of this office please contact our Web site at http://Dosaweb.faunce.wmich.edu/oc/index.html or you may call (616) 387-2336, Fax # (616) 387-2325.

Sindecuse Health Center

The Sindecuse Health Center is a student-oriented medical facility that exists to support and promote optimal health for the University community. As a student attending Western Michigan University, you have access to high-quality, convenient, low-cost health care through our many professional services. Our entire staff works as a team to assist you with your health care needs.

MEDICAL SERVICES

The Health Center provides evaluation and treatment for a variety of illnesses and injuries in addition to preventive health care. Medical specialties include family practice, internal medicine, gynecology, psychiatry, dermatology, nutrition assessment, and sports medicine. In addition, Health Center physicians and physician assistants can refer students to other medical specialists in the Kalamazoo area wherever indicated.

Upon acceptance to the University, each student will receive a Health History Questionnaire. Completing and returning this questionnaire is important as it becomes a permanent part of a student’s medical record and a reference when medical treatment is required.

Any student younger than 18 years of age must also complete and return a Medical Treatment Authorization form signed by a parent or guardian. This form will be included in the admissions packet.

All information and Health Center records are strictly confidential. Student signature is required for release.

PHARMACY

A full-service pharmacy provides prescription medications at a cost savings to students. It also carries a limited amount of non-prescription medications. Prescriptions written by your personal physician from home can be filled, as well as prescriptions written by Sindecuse Health Center medical staff.

You may pay for pharmacy items by cash, check, Master Card, Visa, Discover Card, or you may bill your student account. Many major insurance cards for prescription coverage are also accepted. If you have prescription drug coverage through outside insurance, bring the identification card with you.

LABORATORY SERVICES

The center's full-service laboratory performs most standard diagnostic tests. These tests are often evaluated while you wait so that you receive prompt treatment, saving you both time and money. Electrocardiograms are also available.

X-RAY SERVICES

The radiology department performs general diagnostic x-rays. All x-rays are developed for immediate evaluation by Sindecuse Health Center clinicians and are further interpreted by a radiologist.

ALLERGY INJECTIONS

Students requesting allergy injections need to provide their antigen and injection schedule to Health Center staff. No appointment is needed. Check with the Health Center for times injections are given.
IMMUNIZATIONS
Serious diseases, including measles, mumps, German measles, tetanus, diphtheria, and hepatitis B, are all vaccine preventable. You should be immunized to protect yourself and the University community. The Sindecuse Health Center offers all immunization updates and immunizations required for overseas travel. Appointments for immunizations are required.

TUBERCULOSIS TESTING
Routine tuberculosis testing, required for some classes and employment, is also available. No appointment necessary. Check with the Health Center for times TB testing is performed.

HIV TESTING
HIV testing is available to all students. For more information, call 387-4HIV.

SPORTS MEDICINE CLINIC
The Sports Medicine Clinic provides comprehensive diagnosis and treatment of bone and joint problems. Full physical therapy services are available. The clinic is staffed by a physical therapist, two certified athletic trainers, a sports medicine specialist, and a podiatrist consultant.

URGENT CARE
The Health Center's urgent care clinic is designed for sudden injuries or illness. No appointment is necessary.

ASSIGNMENT INFORMATION
Students are encouraged to choose a physician or physician assistant with whom they feel comfortable and request this clinician when scheduling appointments. Appointments may be scheduled by calling 387-3290, 8:00 a.m. - 5:00 p.m. Monday through Friday. If you have an appointment, go directly to the nurses' station. Plan to arrive fifteen minutes early for your appointment and plan on the visit lasting at least an hour, longer if lab or x-rays are required. If you cannot keep your appointment, let the Sindecuse Health Center know so that your time may be used to help another student. There is a charge if you do not cancel an appointment.

SINDECUSE HEALTH CENTER HOURS
Appointments
Monday - Wednesday and Friday, 8:00 a.m. to 11:30 a.m. and 1:00 to 4:30 p.m.; Thursday, 9:00 to 11:30 a.m. and 1:00 to 4:30 p.m.

URGENT CARE CLINIC
Monday - Friday, 8:00 a.m. to 5:00 p.m., Saturday, 9:00 - 11:30 a.m. (except summer session and during break weeks).

WALKING
While visiting the Sindecuse Health Center, parking is available in one of the designated Health Center parking spaces in student Lot No. 40. You must obtain a two hour parking permit in the Lobby. Short-term parking is available in the semicircle drive while you receive your permit.

STUDENT HEALTH FEE
All Western Michigan University students enrolled for the first time for more than 3 credits hours per semester (four or more per session) are assessed a Student Health Fee as part of the enrollment fee. This entitles students to use all Health Center services (including those offered in the Sports Medicine Clinic). Students with fewer credit hours, non-enrolled students, and dependents (12 years and older) of WMU students may pay the Student Health Fee each semester/session and receive the same benefits or they may opt to pay visitior rates. Eligibility for use of the Health Center extends from the first day of the applicable semester/session to the first day of classes of the next semester/session. Students remain eligible to be seen at the Health Center one semester or two sessions after graduation. Fee schedules are available at the Sindecuse Health Center.

The Student Health Fee benefits apply only to services rendered in the Sindecuse Health Center. Vists to hospital emergency rooms, immediate care centers, medical specialists outside the Health Center, and transportation by ambulance are not covered by the fee. Lab, x-ray, and physical therapy services requested by clinicians outside the University can also be provided by the Health Center.

There is a charge for Health Center services. If you do not cancel an appointment, you are responsible to pay. The insurance carrier will reimburse you directly.

OPTIONAL HOSPITAL, MEDICAL, AND SURGICAL INSURANCE
All students are urged to carry some form of health insurance that covers medical, surgical, and hospital expenses not covered by the Student Health Fee. It is very important to verify the services included in any insurance policy you purchase. Be sure to carry the insurance identification card at all times.

Insurance carriers will cover your health care costs against your student account. The University assesses a service charge for any costs that are not paid within sixty days. As a courtesy to you, the Health Center will assist in the billing of insurance claims to many of the major carriers, including Medicaid and Medicare. Charges will be placed on your University account and are your responsibility to pay. The insurance carrier will reimburse you directly.

Mandatory Hospital, Medical, and Surgical Insurance
All international students are required to carry health insurance if health care coverage is not provided by their sponsor. Students will be automatically enrolled in the University-sponsored policy unless an approved alternate policy is chosen.

Non-sponsored international students must show proof of coverage and have alternate policies approved at the Health Center during the first two weeks of the semester/session. No refunds of insurance premiums can be given after that time. Call 387-3266 for guidelines on alternate policies.

The insurance coordinator at the Health Center is available to assist students weekdays from 8:00-11:30 a.m. Monday, Tuesday, Wednesday, and Friday, 1:00-3:30 p.m. on Wednesdays, 9-11:30 a.m. on Thursdays; or by calling 387-3266.

STUDENT HEALTH ADVISORY BOARD
The Student Health Advisory Board is designed to bring a diverse group of students together to help plan ways in which Sindecuse Health Center can offer high-quality health care services and commit to the creation of a healthy lifestyle. Physical, emotional, and spiritual well-being depend on how willing you are to invest in yourself and your quality of life both now and in the future. Call 387-3263 for more information.

Speech, Language, and Hearing Services
The Van Riper Language, Speech, and Hearing Clinic, is a service program provided by the Department of Speech Pathology and Audiology for persons with communication disorders. It is located in the University Medical and Health Sciences Center, 1000 Oakland Drive. Students may take advantage of diagnostic and therapeutic services by contacting the Clinic for an appointment. Special fee arrangements are available for students. Telephone: 387-8047.

Student Life
The mission of the Office of Student Life is to enhance students' out-of-classroom experience by providing opportunities for
personal growth through diverse programming, leadership development, and campus community. By fostering enrichment and belonging within the campus community, the Office of Student Life empowers the citizens of today and tomorrow. The wide variety of student organizations/agencies offers many opportunities to participate in events/programs and to strengthen and polish personal, social, interpersonal, communication, and leadership skills. It is an excellent opportunity to meet and interact with people of diverse backgrounds (cultural, ethnic, economic, and social). We encourage you to visit us in the Student Life Center, Student Services Building (Faith and Spiritual Development and Women’s Resources and Services are other Office of Student Life units listed independently within this publication.)

STUDENT ORGANIZATIONS
Learning doesn’t happen only in a classroom! In fact, students spend only 20 percent of their time in the classroom. Another important arena for learning is socializing and getting involved in various campus and community activities. Students can enrich and broaden their college life by becoming involved in any of the 400 student organizations/agencies. These student organizations/agencies are registered and coordinated by the Office of Student Life.

The Office also recognizes chapters that strive to achieve the highest ideals of being a Greek organization. To learn more about Greek life call 387-2115 or visit us at 2420 Faunce Student Services Building.

CAMPUS ACTIVITIES
The Campus Activities Board (CAB) is a student agency that provides a variety of cohesive, diversified, and balanced entertainment/programming for the WMU community throughout the academic year. CAB sponsors special events each semester such as the back to school celebration, "Bronco Bash," WMU Homecoming activities; and the Collegiate Bowl Tournament. CAB also sponsors two successful series each year. Bernie's Afterhours and Movies at Miller. "Bernie's Afterhours" creates the spirit of a comedy/rovetry night club on campus by featuring nationally acclaimed talent(s). "Movies at Miller" offers current hit movies for all at low prices in Miller Auditorium. CAB membership is open to all WMU students. To get involved in CAB call 387-2112 or visit us at 1415 Faunce Student Services Building.

LEADERSHIP DEVELOPMENT
The Keystone Leadership Program (KLP) is designed to analyze the development of students leaders. KLP is an excellent opportunity to meet and interact with people of diverse backgrounds (cultural, ethnic, economic, and social). We encourage you to visit us in the Student Life Center, Student Services Building (Faith and Spiritual Development and Women’s Resources and Services are other Office of Student Life units listed independently within this publication.)

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GREEK LIFE
Fraternities and sororities are a popular outlet for community service, leadership development, social events, intramural events and academic programming. Fraternities and Sororities, otherwise known as Greeks, are an intimate part of Western's student body and the Kalamazoo community. They extend the University community by offering substantial housing opportunities, alumni programming and service to the local community and national philanthropy. The 36 plus organizations are diverse in size, ethnic make-up, and types of housing. Greeks enjoy a higher retention rate than non-affiliated students, are involved alumni of the University and are predisposed to community service in their years after WMU.

Each individual Greek organization is governed by a peer council. The three governing councils that the Office of Student Life helps advise and support are the National Pan-Hellenic Council, the National Panhellenic Conference, and the Interfraternity Council. The Office of Student Life also advises and supports the Order of Omega (Greek leadership honorary organization). In addition, the Office of Student Life supports the Greek community by providing leadership support to all members on how to enrich their individual Greek life. The Office also honors and recognizes chapters that strive to achieve the highest ideals of being a Greek organization.

To learn more about Greek life call 387-2115 or visit us at 2420 Faunce Student Services Building.

LESBIAN, BISEXUAL AND GAY ISSUES
The Office for Lesbian, Bisexual and Gay Issues (LBGI) promotes an open and supportive environment wherein sexual orientation is experienced as a positive aspect of individual identity. It also promotes the affirmation of the lesbian, bisexual and gay community, and provides services to the larger community of students, faculty and staff. The office provides a focal point for LBGI people and their supporters by offering, educational opportunities, support and advocacy for human and civil rights. Contact the Office for Lesbian, Bisexual and Gay Issues at 387-2123.

STUDENT GOVERNMENT
Western Michigan University’s student government is known as the Western Student Association (WSA). WSA exists to offer an on-going and collective voice for students in campus affairs. In addition, the WSA offers enrolled students free legal aid, interest free short term student loans, grading the Prol, and many opportunities to become members of the prestigious Keystone Leadership Society. To learn more about KLP call 387-2115 or visit us at 2420 Faunce Student Services Building.

WIDR-FM
WIDR-FM (a student-operated radio station broadcasting on 89.1), provides a unique opportunity for Western Michigan University students to gain experience in programming, promotion, and station operation. Volunteers are trained to work with broadcast equipment and are given the chance to speak on air. WIDR offers opportunities in music, news and sports. In off-air volunteer positions, students gain valuable experience in organizing concerts and other public events. Business experience is gained through grant writing, sales and the promotion of promotional materials for broadcast. Visit the station in the basement of the Faunce Student Services Building or call the station at 387-6301.

Student Directory
The WMU Faculty/Staff/Student Telephone Directory is published annually by the Telecommunications Department of the University. It is distributed during early November, without charge, to all students in residence halls, family housing units, and is available at the Information Center in the Seibert Administration Building.

Student Employment Referral Service
Over 65% of Western Michigan University (WMU) students work while enrolled. Most students work part-time, although about 10% of our students work full-time. Students use employment to build skills, make connections and career development. SEERS sponsors a competition for Student Employee of the Year campus-wide.

SEERS serves as a clearinghouse for all student jobs, averaging 600-700 jobs daily. These include on campus, summer, internships, temporary, federal, work-study, community service work-study, part-time off campus and others. Any WMU student is welcome to use our services by visiting A-100 Elsworth Hall or viewing current job openings on WMU’s web page at http://dosaweb.fauce.wmich.edu/departments/ers/.

The staff can assist students with application materials, resume preparation and making appropriate employment choices. The office hosts a summer job fair each winter semester. For more information please call, (616) 387-7275.

Student Volunteer Services
Student Volunteer Services (SVS) is dedicated to furthering the student community service movement on campus and to enhancing the traditional classroom education through experiential service-learning opportunities. The mission of Student Volunteer Services is to foster awareness and understanding of the challenges facing our society and to encourage student involvement in addressing these needs through community service and social action.

Through SVS, students have access to volunteer opportunities in over 150 community and campus organizations. SVS staff will assist you in determining where your interests and skills can be matched to community needs. Individual volunteer opportunities and one-time group projects are available in a variety of interest areas including food/clothing/shelter services, mental and physical health care, friendship role model services, recreation, education, cultural arts and sciences, financial/legal/government services, handicapped services, advocacy, natural resources, and media/public relations.

Individual volunteer opportunities typically require a two to four hour weekly time commitment, one-time group projects vary from three to eight hours.

Service projects coordinated by SVS include Alternative Spring Break, Into the Streets, Service Week, and the Volunteer
University Computing Services

University Computing Services (UCS) encompasses a wide spectrum of computing and information technologies. In addition to supporting administrative computing functions and supporting open access computing facilities for student use, providing a wide variety of computing workshops, and supporting a computing Help Desk, University Computing Services is located on the third floor of the University Computing Center. Telephone 387-5430. UCS’s web pages are located at http://www.wmich.edu/ucs.

COMPUTER ACCOUNTS

Student personal accounts are available to currently enrolled students. These accounts are available on either of the University's main academic computing platforms and are free of charge. Charge accounts may take their WMU ID card to any UCS computer lab and use a convenient card swipe system to obtain an account. The account remains active as long as a student is enrolled at Western.

ENABLING TECHNOLOGY SUPPORT

The University Provides access to computing and information technology for individuals with disabilities through the Multipurpose Enabling Technology Lab (METL) and other sites around the campus. The METL is a centralized facility with a variety of solutions and services for a variety of disabilities. Some examples are software that generate speech from on-screen text, enlarge text and graphics on-screen, produce Braille printouts; allow input to programs through voice recognition, switches, and alternative keyboards. Orientation, training and consulting are some of the services available through METL staff.

The COMPUTER HELP DESK (387-5161)

UCS operates a Help Desk that is available to all students, faculty, and staff. The primary function of the Help Desk is to help computer users get “un-stuck” with computing problems. Help Desk staff are trained to answer questions, solve computing problems, and give information about UCS services and systems.

OPEN ACCESS COMPUTING LABS

There are a number of computing facilities located across Western's campus. Four large “public” computing labs are available for walk-in use by the WMU community. These are located in the Computer Aided Engineering Center, the Bronco Mall area of the Bernhard Center, the Haworth College of Business, and the University Computing Center. The Bernhard lab houses 130 computers and is generally available on a 24-hour basis. Additionally, there are many small to medium-sized labs operated by departments and colleges across campus. An extensive list is available on the Web at http://www.wmich.edu/labs. The computer labs provide a mix of platforms including Macintosh, Windows, UNIX workstations and terminals which are used to connect to the University’s academic mainframes, the VMSciluter, and UNIX servers.

Student Residence Hall Room Computer Connection

If you have your own personal computer, you can request a connection to the campus-wide computer network (WMUnet) for a fee. This connection will give you access to University and departmental computing systems, the library on-line card catalog and data base, and the Internet. You can explore the World Wide Web (WWW) or FTP files between your personal computer and many host computers as well as send electronic mail locally or around the world.

To order your WMUnet connection, stop by UCS Technical Computing Services (TCS) located in the University Computing Center.

Computer Network and Systems

UCS supports an extensive on-campus network (WMUnet) and dial-up modem pools. As a member of the Metropolis Network, dial-up access to University computing resources is available to students state-wide through local MichNet dial-up modems.

The primary academic time sharing system runs Open VMS on Digital Alpha architecture. Major uses of this system include e-mail, electronic conferencing, courseware, statistics, and research. The SOLARIS server running SOLARIS is also provided, supporting many engineering and statistical software applications.

MICROS & MORE

Micros & More provides microcomputing consulting, system configuration, and needs analysis to current WMU students, faculty, and staff. Located in the Bernhard Center Bronco Mall, Micros & More offers substantial academic discounts on a variety of brand-name microcomputers and on numerous industry standard software packages.

STATISTICAL SERVICES CENTER

The Statistical Services Center (SSC) helps clients improve the statistical quality of their research projects, in both the application and interpretation of the results. SSC staff provide statistical support to faculty, staff, students, and individuals and organizations outside the University engaged in research, beginning with the grant writing stage through interpretation and presentation of research results. Services include assistance in writing statistical components of grant applications, pre-data collection, planning and consultation, data encoding and entry assistance, data analysis, interpretation and presentation, and statistical evaluation. Services are available for very reasonable fees and vary according to project complexity. In addition, the SSC provides basic walk-in and telephone support on the use of statistical software such as BMDP, MINITAB, SAS, and SPSS.

TECHNICAL COMPUTING SERVICES

Technical Computing Services (TCS) provides technical expertise on hardware, software, and WMUnet network connections for both departments and individual users. TCS looks upon each repair or consultation as an opportunity to help users learn how to identify and resolve their own problems in the future. TCS is an authorized service center for the contracted hardware purchased at Micros & More. Apple, Compaq, and Dell microcomputers and Lexmark printers. Out of warranty repairs can be made for Hewlett Packard printers, SUN Micro Systems and most non-contracted personal computers. TCS can diagnose problems, provide estimate of cost and make necessary repairs for all of your computer repair needs.

COMPUTER WORKSHOPS

Every semester University Computing Services (UCS) offers a variety of computer workshops to the University. Workshops are lead by WMU faculty and staff who use computers personally and/or professionally. Workshops are intended to guide participants to explore and experiment with computing technology. It's a great way to start learning an application or exploring computing environment.

Look for Computer Workshop Catalogs published and distributed every semester with over 100 workshops to choose from.

University Counseling and Testing Center

Many important decisions and situations will confront students while they are at Western Michigan University. They will need to make decisions regarding courses, curricula, and career exploration. They may become involved in social and personal situations that leave them feeling confused and upset. In addition, it may be likely that the inherent stresses of university life will, at some time, interfere with academic achievement. The University Counseling and Testing Center, located on the main floor of the Faunce Career Exploration/Media Center, helps students deal effectively with these concerns. The Center is staffed with professionally licensed counselors and psychologists and is accredited by the National Association of Counseling Services.

Counseling and Testing Center services consist of the following:

Personal Counseling to assist individuals in better understanding themselves and the emotional conflicts that may interfere with their everyday lives as students, to help them become more aware of alternative means of coping with conflicts, and to aid them in developing more satisfying and fulfilling lifestyles.

Educational Counseling to help students deal with conflicts concerning vocational planning and educational goals. Academic advisement is provided for students in the Student Planned Curriculum.

Career Counseling and Testing to provide students with the resources, skills, and experiences necessary for reasonable educational and career choices. Individual and group activities are offered to (1) increase self-understanding, including insights into one’s interests, values, abilities, and skills, (2) learn how to acquire information about careers; (3) review choices, make decisions, and establish plans of action; and (4) test the feasibility of individual plans by experiencing the reality of the working world.

The Career Exploration/Media Center contains a wide and varied selection of printed materials with an emphasis on self-understanding, career exploration and preparation, occupational information, and job trends. Included is a section of college and university catalogs, educational guides, and computer-aided guidance and information pertinent to career awareness. An extensive collection of professional periodicals is also available for student/faculty review.

Training and Internship Programs for graduate students and interns from the Department of Counseling Psychology, School of Social Work, and Department of Psychology are available. Included in the training experience are case consultations, supervision of treatment sessions, didactic presentations and professional growth opportunities.
National Standardized Testing is conducted by the University Counseling and Testing Center. The following tests are regularly offered: ACT, LSAT, GRE, MCAT, RNAAPDL, DAT, CLEP, TOEFL, and academic skills exams are offered as needed. Standardized testing information is available at the Center; call 387-1872.

Test Scanning Services (optical scanning) for classroom exams and research data analysis is provided to the University community and greater Kalamazoo area. Information about scanning services is available; call 387-3910.

The Counseling and Testing Center is committed to the need for confidentiality in client/counselor communications. Therefore, confidentiality of client information is maintained in a manner consistent with professional standards of ethical practice and conduct and legislative requirements in the state of Michigan. Copies of the Counseling and Testing Center Policy on Confidentiality may be obtained at the Center’s reception desk.

Appointments may be requested by telephone (387–1850) or by stopping at the Counseling and Testing Center reception desk between 8 a.m. and 5 p.m., Monday through Friday. Students unable to utilize the Center’s services during regular hours may make requests for evening appointments.

The Center attempts to service as many students as possible within staffing limitations.

University Ombudsmen
The University Ombudsmen is an intervention agent and impartial person who helps students, faculty and staff resolve academic and non-academic concerns. The Ombudsmen listens to you and discusses your question or concern; provides you with information that answers your question or helps you locate someone who can assist you; explains the University’s policies and procedures and how they may affect you; follows up with you and others at the University to make sure your concern is resolved; and recommends changes in the institution that will make it more responsive to every member of the community. The basic principles of the University Ombudsmans are independence, impartiality, and confidentiality. The Ombudsmans are authorized to make thorough investigations and has access to most University offices and records, reports and other documents in the University. No person shall suffer any penalty because they seek assistance from the Ombudsmans. The Ombudsmans are appointed by and reports directly to the President. The office is located in 218 Bernhard Center. Telephone: 387-5300.

Veterans’ Assistance
The Office of the Registrar on the third floor of the Administration Building certifies veterans under the G.I. Bill and its extensions. Students who wish to receive A.A. benefits must annually file a "V.A. Certification Information Card" with the Veteran’s Certification Officer located in the Registrar’s Office.

Changes in enrollment or current address must be reported immediately to the Office of the Registrar. Proof of a change in dependents should be sent directly to the V.A. Regional Office in Detroit. Forms may be obtained at the Office of the Registrar.

In addition to normal scholarship standards, students receiving benefits from the Veterans Administration are advised of their additional rights and responsibilities.

All students have a grade report mailed to them shortly after the close of each semester or session. If the student’s grade-point average falls below 2.00, an explanatory letter accompanies the grade report. Remedial action on the part of the student is recommended in the letter.

A complete record of all classes taken and grades received is maintained in the Office of the Registrar. A student copy of this record is available upon personal request, with proper identification. Student copies picked up in person are free; there is a $3.00 charge for mailed copies.

Students who are academically dismissed or on continued probation must see the Registrar in order to receive the appropriate counseling before being certified again to the Veterans Administration. Students may be requested to change curricula, to retake specific courses, or to take other remedial action before re-certification. After two semesters on probation, the Veterans Administration is notified. Benefits may be terminated for such students even if allowed to remain in school.

Students are certified on the basis of attendance and academic progress toward degree goals. Serious overpayment problems can be eliminated by prompt notification to the Office of the Registrar of changes in these areas.

Each student receiving benefits is required to sign a statement once a year outlining plans for enrollment for the coming year and declaring personal responsibility for regular attendance during that year.

Women’s Resources and Services
Women’s Resources and Services—a unit of the Office of Student Life—provides educational programs and materials and personal assistance to students, focusing on issues that are not only of special interest to women, but also to an increasing number of men. Currently, WRS services are concentrated on three gender-related issues: sexual assault, sexual harassment, and abuse and violence in relationships. Both female and male students play an integral role in our work on these important social issues.

EDUCATIONAL PROGRAMS
The S.T.A.R. Program: Students Talking About Relationships, is an educational program that provides presentations and training workshops on the issues of sexual assault, sexual harassment, and abuse and violence in intimate relationships. Programs are presented by women and men students who have completed special training as Peer Educators. Over 100 presentations are done each year for academic classes, residence halls, student organizations, and freshman orientation. Students are invited to inquire about being a Peer Educator by stopping by or calling the WRS office at A331 Elsworth Hall, 387-2990. Approximately 35 students are selected each April to begin training as Peer Educators in September.

VICTIM ASSISTANCE SERVICES
Personal, confidential assistance is available to students or their friends who want help in dealing with a sexual assault, sexual harassment situation, or abusive relationship. The coordinator of the WRS office can provide information on legal rights, University policy, procedures, resources for help, emotional support, encouragement, a sympathetic sounding-board for decision-making, advice on how to help a friend, assistance in obtaining help and carrying out decisions, and support and assistance in filing a complaint with Student Judicial Affairs.

INFORMATION RESOURCES
The WRS office maintains a file of information on local sources of financial aid targeted at women and older students and a large collection of information about campus, community, and national organizations, resources, and services of interest to women. The office also houses a resource library of books, reports, articles, pamphlets, and videotapes about sexual assault, sexual harassment, and relationship abuse. Many of these materials are available free to the WMU community and can be obtained by either stopping by the WRS office or requesting they be mailed.

INFORMATION RESOURCES
Archives
The University Archives and Regional History Collections is located in East Hall, Room 111. Staff collect, preserve, and make accessible records which document the history of the University and of twelve southwestern Michigan counties. Holdings include: books, ephemera, newspapers, microfilm, photographs, oral history tapes, and manuscript collections. In addition, local public records from southwestern Michigan are on deposit from the State Archives.

Athletics (Intercollegiate)
The University is represented by men's teams in football, baseball, basketball, indoor and outdoor track, cross country, tennis, ice hockey, and soccer. Women's teams represent the University in basketball, cross country, gymnastics, softball, indoor and outdoor track, soccer, and volleyball.

Alumni Relations
Alumni Relations is responsible for cultivating productive relationships with a variety of University constituencies, for providing leadership to other offices of the University in matters relating to external constituent relations, and for projecting a positive image of the University to its constituents and to the general public. A significant portion of the total financial support and other forms of support for the University is directly related to the efforts of the Office of External Affairs.

The Office is divided into three major areas, alumni relations, development (or fund raising), and legislative affairs. There are several other areas that report to the vice president for external affairs and general counsel, including the University's legal counsel, collective bargaining and contract administration, and affirmative action.

Legislative Affairs
Western Michigan University is a state-assisted university, deriving a significant portion of its annual operating budget and capital improvement funds through allocations by the State of Michigan. The Office of Legislative Affairs is responsible for representing the needs, interests, and accomplishments of the University to appropriate elected and appointed state officials. The legislative affairs staff serves as an indispensable conduit or link between the University and the state government in Lansing. The Office of Legislative Affairs is located in Walwood Hall.

Alumni Relations/WMU Alumni Association
There are more than 130,000 graduates of Western Michigan University. The Office of Alumni Relations is responsible for maintaining and enhancing the lifelong relationship that exists between the University and its former students. The office is located in the McKee Alumni Center in Walwood Hall.

Approximately 80 percent of all alumni live in a six-state Great Lakes region, about two-thirds of Western's alumni are Michigan residents, and close to every five reside in Southwest Michigan. The alumni relations staff endeavors to build strong relationships with alumni regardless of where they live. There are a growing number of regional alumni organizations (chapters) serving alumni in cities throughout the United States, and increasing efforts to build ongoing relationships with alumni in other countries.

The responsibility for maintaining and enhancing the relationship between the University and its alumni is shared with the WMU Alumni Association, an organization of dues-paying members governed by volunteer alumni leaders who comprise the association's board of directors. Among the many activities that are jointly undertaken by the alumni relations staff and the WMU Alumni Association are Homecoming, a variety of class reunions and reunions of other alumni groups, regional alumni meetings and activities, and development and constituent alumni societies. The Alumni Association sponsors annual recognitions for "Distinguished Alumni" and for "Excellence in Teaching" among members of the University faculty.

The association maintains a link with current students through the Student Alumni Association (SAA), which plans a variety of programs throughout the year designed to increase the interaction between current and former students.

Development/WMU Foundation
Private fund-raising efforts of the University fall under the authority and coordination of the Western Michigan University Foundation, an independent nonprofit 501(c)(3) corporation created in 1976 "to promote and to provide private financial support to Western Michigan University."

The WMU Foundation is composed of approximately 200 members—alumni, business and civic leaders, and major benefactors of Western. It is governed by a forty-two member volunteer board of directors. Under the charter of the WMU Foundation and by policy of the University, all private gifts to Western are received through the WMU Foundation, regardless of the designation of the gift. In addition to its primary role of actively soliciting private support, the foundation is also responsible for the management of gifts received and for appropriately distributing gift revenues to the University.

The activities of the foundation and the actual fund-raising programs on behalf of the University are supported by and administered to professional and clerical employees in the Development Office of the University. The staff is responsible for fund-raising in the areas of annual support and major gifts from alumni and other individuals and from corporations and other organizations. The staff is also responsible for gift accounting and record-keeping, gift acknowledgment and donor recognition, and a variety of fund-raising related activities and special events. The offices of the WMU Foundation and the Development Office are located in Walwood Hall.

Faculty Senate
The Faculty Senate is composed of members elected by the faculty to represent the departments and the University at large, and others appointed by the President. It meets regularly to promote the common interests of the University and give the faculty a share in the determination of institutional policy.

Faculty Senate councils are composed of faculty members elected by the Faculty Senate for three-year terms, certain ex officio members, several members appointed by the President of the University, and student members selected by the Western Student Association and the Graduate Student Advisory Committee. The terms of elected members expire in April in a staggered year sequence. The councils include: Admissions, Financial Aid, and Student Affairs; Budget and Finance; Campus Planning, Graduate Studies; Regional Education; Research Policies; and Undergraduate Studies. For names of members and further information, contact the Faculty Senate office. The Faculty Senate President for 1997-98 is Carol Payne Smith and the Senate Vice President is Paul Pancellia.
GRADUATE STUDIES COUNCIL

The Admissions, Financial Aid, and Student Affairs Council is responsible for initiating, reviewing, developing, and recommending policies pertaining to the academic and student services at Western Michigan University.

BUDGET AND FINANCE COUNCIL

The Budget and Finance Council functions to: (1) review the budget and financial concerns of the University and make recommendations as appropriate; (2) review and make recommendations concerning the funding of new academic programs, both on and off campus; (3) conduct special studies as requested by the Executive Board of the Faculty Senate.

CAMPUS PLANNING COUNCIL

The Campus Planning Council serves as an advisory body to the administration and Faculty Senate on matters related to the acquisition, design, renovation, maintenance, and general use of all classroom buildings, faculty office structures, residential units, recreational facilities, and lands owned by the University. In this capacity, the council: (1) develops and recommends policies to provide a framework within which campus agencies may act in making administrative decisions; (2) develops procedures for the evaluation of policy decisions and administrative actions; (3) processes information brought before the council from the administration, faculty, and students which will guide the council in making informed recommendations in its areas of concern; and (4) reviews all major planning proposals submitted by any campus unit which call for decisions regarding building sites, space allocation, long-range campus growth and development, or which impede, limit, or have any major impact on the esthetic, physical, or socio-ecological environment of the campus, community, or region.

GRADUATE STUDIES COUNCIL

The Graduate Studies Council reviews, develops, and recommends policy regarding graduate programs at Western Michigan University. Policy recommendations include, but are not limited to, the admission of applicants to the Graduate College, development of graduate curricula and approval of graduate programs, selection of graduate faculty, awards and fellowships, and graduate student personnel practices. Reviews of existing programs, proposed new programs, significant program changes, the academic standards of graduate level programs, and reports related to graduate programs that are submitted to accrediting bodies on behalf of academic units. The work of the council is accomplished through standing and ad hoc committees, and on behalf of the council within the framework of its policies and subject to its review.

REGIONAL EDUCATION COUNCIL

The Regional Education Council is responsible for reviewing, developing and recommending policies dealing with regional education, continuing education and other related public service at the University. Policy reviews and recommendations include, but are not limited to, pre-credit and continuing education courses and degree programs, and their relationship to on-campus offerings, non-credit programming, including conferences, seminars, workshops and short courses offered through the Division of Continuing Education, and public service programming.

RESEARCH POLICIES COUNCIL

The Research Policies Council is responsible for reviewing, developing, and recommending policies dealing with the enhancement and implementation of research and creative activity in the University.

UNDERGRADUATE STUDIES COUNCIL

The Undergraduate Studies Council is a policy-recommending and review body with oversight over any matter related to the undergraduate programs at the University. Thus, for example, it is concerned with the establishment of new departmental programs, new interdisciplinary undergraduate programs, changes in duplication between existing programs or courses, and needs for additional or specialized instruction. The USC also serves as the appeal body for disputed recommendations of the Undergraduate Curriculum Committee.

Libraries, University

The University Libraries consist of the Dwight B. Waldo (Main) Library, the Education Library, the University Library, the Education Library, the Regional History Collections and Archives, and the Visual Resources Library. The total collection, which numbers over three million bibliographic items, includes books, bound periodicals, music scores, recordings, maps, documents, and materials in microform. About 6,619 titles are currently received.

The main collection is housed in the Dwight B. Waldo Library, which is named for the first president of the University (1895-1954). It was enlarged in 1967 to almost double its original size. A 105,000 square-foot addition and renovation of 145,000 square feet of existing space was completed in 1996. The new addition provides room for the expanding collection as well as 1,900 student stations. The Library is a depository for United States and Michigan government documents. Microprint editions of selected United Nations documents and official records are also available.

A microform collection of more than 1,503,227 contains such items as the Human Relations Area File, the American Periodical Series, Early Newspapers of the 18th and 19th centuries, the U.S. National Archives, Early English Books printed in Great Britain from 1475-1700, and ERIC documents (documents in educational research published by the Educational Resources Information Center).

Some special collections are maintained by the library, and holdings have been especially strengthened in some subject areas to support University programs:

1. The Ann Kercher Memorial Collection is an extensive collection of materials on Africa south of the Sahara. Started more than two decades ago, the collection has grown rapidly to become a noteworthy addition to the library resource.

2. Library holdings on Southern Asia are another area of special strength. Together with the Kercher African collection, they help support the University’s commitment to area studies.

3. Another area of collection strength is the history, religion, philosophy, and culture of the Mediterranean. Holdings which have support the programs of the University’s Medieval Institute. The collection also includes rare books, manuscripts, and incunabula, the majority of which are in the Indefinite loan to Western from the Abbey of Gethsemane. Over 900 of the 9,000 volumes in this collection are rare items of historical and medicinal scholars from all over the world.

4. The Randall Frazier Memorial Collection, honoring a notable alumnus, has a wealth of material on the history and culture of Black America.

5. The Regional History Collection is a unique group of items on the thirteen counties of Southwest Michigan. In this group, this collection contains manuscripts of early residents of this area.

6. The C.C. Adams Ecological Collection consists of the personal collection of books and papers of the pioneer American ecologist, Charles C. Adams.

7. The Map Library, a unit of Public Services, is the second largest map collection in the State of Michigan and the third largest of all map libraries in the state. The present collection of about 183,826 items includes Army and U.S. Geological Survey maps, which are cataloged and readily available for use. In addition to the maps, the Map Library also possesses more than 1,000 atlases.

The Music and Dance Library is located in the Dorothy U. Dalton Center. In addition to more than 40,000 books and scores, it is a powerful retrieval service, contains online indexes to journal articles and report literature in select subject disciplines. Terminals installed in Waldo Library and its branches give the user access to the databases. From the same terminals, users can access the FirstSearch system which contains over 60 additional databases covering all subject areas. The University Libraries’ World Wide Web page (http://www.wmich.edu/library) provides access to all the databases listed above as well as additional selected online indexes. Users can personally search online for material in a subject area and compile and print the references to use in writing papers or completing reports on other projects.

Indexes on CD-ROM terminals provide additional automated access to periodical articles in general interest periodicals, in science and technology journals, in business journals, and in education documents and journals. A special CD-ROM index provides access to the NEWSBANK collection of articles from newspapers all over the country on a variety of topics.

General and specialized reference service is provided at the Main Reference and Information Desk, at the Science Reference Desk, in the Documents Department and in the Maps Department in Waldo Library. Reference collections of indexes, abstracts, dictionaries, handbooks, bibliographies, etc., are maintained in each of the University Libraries, and reference librarians offer personal assistance in finding books, information, and other resources needed for class or research related problems.

An online automated retrieval system (OARS), offered by the library access databases in nearly every subject. The computerized operation allows users to significantly reduce time spent on library searches for researchers, undergraduates, faculty, staff, and students on a cost retrieval charge basis. Inquires about this service may...
be made at Reference Services in the main library and at all branch libraries.

Interlibrary loan service is available to both students and faculty to provide access to materials not owned by the University Libraries. Requests for loans may be initiated at public service desks in all libraries, as well as at the Interlibrary Loan office in Waldo Library.

Students enrolled in off-campus classes are always welcome at the libraries on campus. Remote access to the library’s online databases is available from the regional centers as well as from home computers. Students are provided direct document delivery of materials held in the on campus libraries. Reference assistance is also provided upon request. In addition, students are provided access to an online index to articles in over 13,000 journals with the option of ordering for a fee 24-hour delivery of an article to a fax machine of their choice.

Information about library access and services is available at each of the regional centers and other sites designated by the regional centers.

### Media-related Services

#### University Video Services

1124 Dunbar Hall  
(616) 387–5003

Fax: (616) 387–4630

University Video Services is an academic support unit providing classroom teaching, distance learning/broadcasting, and technical support to the University. The unit is made up of several areas including Cable Television (EduCABLE), Technical Services, Video Production, Media Utilization, Video Distribution, Teleport, and WMUK-FM. Services related to the various areas will be described below.

**Cable Television**  
0116 Dunbar Hall  
(616) 387–4997

EduCABLE is a full service cable television, radio and audio distribution system serving 3800 residential units on campus and some academic buildings. The system offers forty-three channels of television ranging through education, instruction, information, enrichment and entertainment. Twenty radio stations, including Western’s WMUK and WQRF, are transmitted for best high fidelity stereo reception in resident hall rooms along with five satellite delivered audio services. EduCABLE is operated in partnership with the Telecommunications Department.

**EduCABLE Access Center (Channel 7) and Electronic Bulletin Board**

The EduCABLE Access Center is designed to encourage the free flow of communication among students. Students and student organizations can create video programs to share with on-campus residents. Channel 26 is designed for general public viewing and is intended to promote WMU educational and cultural activities. Events such as public lectures, seminars, concerts, plays, film series and dance events are announced on this electronic bulletin board. EduCABLE Channel 26 will be displayed in a growing number of public areas on the WMU campus and eventually will be delivered to area cable systems for use on their higher education channels.

**Video Production**

1124 Dunbar Hall  
(616) 387–5020

The Video Production area within the University Video Services, comprised of a team of media specialists, provides professional support to departments, faculty and staff for the development of graphic, photographic, audio and/or video projects. Services include:
- Media consultation
- Photography (slide duplication, prints)
- Graphic design and production for video
- Audio production and duplication
- Video production
- Teleconferencing support services
- Telecourse design and production
- Multi-Media/Interactive Video production
- Computer animation

The primary mission of Video Production is to serve the instructional needs of the University community; however, other projects are welcome as long as they are of a non-profit, non-partisan or non-religious nature (except those designed by faculty for classroom use).

**Dunbar Audiospatial Equipment Center**

2214 Dunbar Hall  
(616) 387–5060

The Audiospatial Unit of Technical Services provides faculty, staff and students of the University with audiovisual equipment. The unit includes an audiospatial equipment distribution center in Dunbar Hall. Services include audiovisual consultation, maintenance service for audiovisual equipment, purchase recommendations, and trouble shooting.

**AV Equipment**

Faculty, staff and student organizations can request AV equipment by contacting the equipment room in Dunbar Hall at 387-5060. Twenty-four (24) hours advanced notice is preferred, but if the desired equipment is available, it can usually be picked up immediately. There is no charge for instructional use of AV equipment. For non-instructional use, there is a charge, which varies by equipment item requested.

**Media Utilization**

1124 Dunbar Hall  
(616) 387–5003

The coordinator provides information on media resources and arranges satellite-delivered programming for faculty and departments and student groups. Handles duplication of copyright-cleared programs and instructional off-air recording requests, and manages sales of Media Production produced video programs.

**Office of Video Distribution**

1112 Dunbar Hall  
(616) 387–5004

The Office of Video Distribution (formerly Office of Technology Initiatives) was instituted in 1991 to foster visual media outreach from the Western Michigan University campus to its regional centers, to its primary service area in Southwest Michigan and, via satellite technology, to the North American continent and beyond. The Office assists private sector businesses and the broader educational community in utilizing the specialized resources that WMU has developed, such as our satellite transmitting teleport and diverse video production capabilities.

**Technical Services**

1124 Dunbar Hall  
(616) 387–5780

Technical Services offers engineering support for various media units within University Video Services and to the University community. The unit operates and maintains the various electronic facilities of the Video Services including the WMUK radio studios and transmitter/tower, television studios, cable television network, academic programming, electronic classrooms, lecture halls, satellite uplink and downlink equipment, and audio-visual maintenance and repair services for the University. Staff of Technical Services also consult with other units of the University on Technical matters.

### Musical Activities

Numerous musical activities and organizations at Western Michigan University are available for the cultural enrichment of the student. Faculty members, students, and guest artists provide a schedule of more than three hundred on-campus recitals every year, to which all University students are invited. Students may participate actively in musical life on campus by joining one of the many ensembles—the Marching Band, Symphonic Band, Concert Band, Orchestra, University Chorale, Collegiate Singers, Gold Company, Grand Chorus, Jazz Orchestra, Jazz Lab Band, Treble Chor, Collegium Musicum, Pep Band, Musical Theatre productions and Opera Workshop. The School of Music also offers opportunities for participation in small ensemble groups for voices, strings, woodwinds, brass, jazz, and percussion.

In addition to School of Music performances, productions are presented by Miller Auditorium and the Student Entertainment Committee.

### Parking

Detailed regulations concerning the use of motor vehicles on campus is available from the Department of Public Safety’s Parking Services. All students are eligible to park a motor vehicle on University property, however, they must first register their motor vehicle, motorcycle and/or moped with the Parking Services and pay a registration fee. Information concerning parking regulations, parking permits, and parking violations can be obtained by visiting Parking Services located at 2507 West Michigan Avenue (at the corner of West Michigan and Knollwood) or by telephoning 387–4609 during normal University business hours.

### Police

Located at 511 Monroe, off the 1300 block of West Michigan Ave., the Department of Public Safety is open 24 hours a day. Providing a full range of police services through the use of a uniformed patrol division, a detective division, and a communications center, the Department of Public Safety is responsible for investigating all crimes and accidents occurring on University property and is committed to providing an environment conducive to the education of the students at Western Michigan University. Towards that goal, the department’s various divisions and bureaus have coordinated their efforts to create and maintain a feeling of security and safety within the University community. Information can be obtained by visiting the office, telephoning 387–5555 or 911 in an emergency.

Information concerning parking regulations, parking permits and parking violations can be obtained by visiting Parking Services located at 2507 West Michigan Avenue (at the corner of West Michigan and Knollwood) or by telephoning 387–4609 during normal University business hours.
Publications
Western Herald, WMU's student newspaper, is published Mondays, Tuesdays, Wednesdays, and Thursdays during the fall and winter semesters. Monday and Thursday during the spring session, and Wednesday during the summer session. The Western Herald is made available to students partially through support from the general fund of Western Michigan University. All positions on the paper are filled by students with the exception of the general manager/advisor.

Western News is the official publication for faculty and staff members. It is published every other Thursday during fall and winter semesters and spring and summer sessions when classes are in session, by the Office of Marketing, Public Relations and Communications, which also produces WMU-the Western Michigan University Magazine in association with the Office of Alumni Relations and is published for alumni and other friends of the University.

Reading Horizons, a journal published five times a year, is devoted to the teaching of reading at all levels, and is published by the Department of Education and Professional Development and the College of Education. The Department of English publishes a number of journals including Comparative Drama, a scholarly journal, circulated nationwide, edited by members of the English Department.

Other academic journals that publish scholarly works include Institute for Cistercian Studies, Evaluation Center, Medieval Institute Publications, and New Issues Press.

Substance Abuse Services
University Student Substance Abuse Services, located in the Sinc deceuse Health Center, provides an outpatient treatment and prevention program for Western Michigan University students concerned with their use, misuse, or abuse of alcohol and other mood-altering substances. Under the auspices of the University Counseling and Testing Center, Division of Student Affairs, the program offers information, assessment, training, counseling and supportive services to referral and follow-up services to individuals and groups. Also offered are support groups to those students seriously interested in exploring their relationship with mood altering drugs (alcohol, marijuana, stimulants, narcotics, depressants and barbiturates) as well as groups for adult children of alcoholics.

University Substance Abuse Services is licensed by the state of Michigan Department of Public Health and is directed by a nationally certified substance abuse therapist and professor of psychology. Services are free, unless they are court ordered, and completely confidential as required by state and federal law. Students are encouraged to make an appointment through the Sinc deceuse Health Center reception area, or, by calling 387-3257.

Radio
WMUK is Western's full power stereo public radio broadcasting service, operating at 102.1 on the FM dial with a power of 50,000 watts. WMUK(FM) began broadcasting in 1951, with a power of 400 watts. In 1955 a Kellogg Foundation grant made possible a power increase to 36,000 watts. In 1973, through a federal grant, WMUK increased its power to 50,000 watts and moved transmission facilities to a site 10 miles north of campus. WMUK now serves an area 80 miles in radius; this area includes most of the southwestern quarter of the state.

WMUK(FM) provides a cultural extension of the University through its broadcasts of campus, community, and area events. Through the satellite-linked National Public Radio network of stations, WMUK provides listeners with outstanding programming in the fine and popular arts, news, and information from around the world. WMUK has built an enviable reputation in classical, blues, and jazz music programming, as well as programming for Spanish-speaking audiences.

WMUK(FM) is a charter member of NPR, the National Public Radio Network of over 500 non-commercial radio stations.

WMUK(FM) has won many honors for its programming over the years, including the Major Armstrong Award for excellence in community service programming, the Corporate Grant Public Broadcasting award for extraordinary service to the community through public radio, the Ohio State Award, and the George Foster Peabody Award for meritorious service in broadcasting.

WIDR(FM), a 100-watt station operated by students, broadcasts on 89.1. Facilities of WIDR(FM) are located in the L. Dale Faunce Studio Building. WIDR(FM) offers a unique opportunity for Western Michigan University students to gain experience in programming, promotion, and station operation.

University Recreation Programs and Facilities
Student Recreation Center (616) 387-3760

The Student Recreation Center (SRC) is a student oriented, multi-use recreational/fitness facility programmed, staffed, and financed by Western Michigan University Students. Recreational, educational, and health promotion programs are provided for the benefit of all Western Michigan University students, faculty, staff, spouses, emeritus and alumni facility members. The facility includes an 8,000 square foot fitness/weight room with over 100 pieces of state-of-the-art equipment, a recreational pool with attached swim pool and saunas, a 45' climbing wall, indoor jogging track, basketball courts, volleyball/badminton courts, indoor tennis courts, 10 racquetball courts, aerobics room, multipurpose gym, fitness testing laboratory, and much more.

The Student Recreation Center is equipped with a state-of-the-art electronic security system to help protect our student-funded facility from vandalism and to ensure that all users are properly authorized. Only ID cards belonging to individuals who have paid the facility fee may access and take advantage of programs and services.

Informal Recreation
Informal recreation permits individual choice of activity. Various facilities are available on a drop-in or reservation basis including basketball courts, volleyball courts, racquetball courts, tennis courts, squash court, indoor and outdoor tracks, fitness/weight room, and swimming pool. Other open recreation opportunities include badminton, table tennis, climbing wall and wallball. Equipment for various activities may be checked out with a valid ID card from Equipment Issue located in the Student Recreation Center.

Outdoor Recreation
The University Recreation system also includes a lighted, commercial-style outdoor track, tennis courts, soccer fields, intramural fields and a sand volleyball court. Selected outdoor equipment may be available for checkout with a valid ID card from the Student Recreation Center.

Intramural Sports
Intramural Sports are available to students, faculty staff and members of the SRC who are interested in competitive activities. The program offers both team and individual sports, including basketball, volleyball, soccer, softball, ice hockey, flag football, tennis, racquetball, badminton and much more. Intramurals provide opportunities for individuals to participate in sports and experiences that will help them to develop team building and leadership skills. These experiences permit participants to set goals, relate to others, participate in physical activity, and enrich their lives. Opportunities for leadership are available for students who wish to officiate contests.

Fitness Programs
Fitness classes are available for individuals interested in improving their health and physical development. A variety of classes and effective exercise programs. A variety of instructor-led classes are offered, including back care, water exercise, high/low aerobics, step aerobics, stretch and tone classes and those which promote a body/mind connection such as Tai Chi and yoga.

Fitness Weight Room
Located in the Student Recreation Center, the 8,000 square foot FitnessWeight Room contains a full line of van exercise, free weights and free weights machines and free weights, computerized exercise bicycles, stair climbers, rowers, and ski machines. Student Exercise Specialists are available to instruct on use of the equipment and to provide exercise training guidelines to meet personal goals.

PhyStyl-es
PhyStyl-es is a fitness testing program designed exclusively for Western Michigan University students. The program offers free-of-charge fitness assessments and individual exercise program development for students who wish to develop and maintain healthy levels of physical fitness. The testing package includes heart rate monitoring, blood pressure analysis, and physical assessments for flexibility, muscular strength and endurance, and cardiovascular endurance. A consultation is available to obtain personal exercise recommendations and guidelines based on current levels of physical fitness and personal goals.

Climbing Wall
The WMU Climbing Wall is designed to challenge and teach participants about the unique sport of indoor climbing. The wall is a tope-rope system where climbers are harnessed in for safety. SRC members who wish to climb the wall may check out the URPF Climbing Clinic. Through the clinic participants learn how to harness in for safety and belaying techniques. Come feel the excitement of scaling a 46 foot wall.
Special Events
URPF regularly conducts one or two special events each semester, such as National Girls and Women Sports Day, Spike Fest Volleyball Tournament, Jump Rope For Heart, Workout for Hope, Schick Three Player Basketball Tournament, and the Turkey Trot Two Mile Run/Walk Race. These events may coincide with other University events or reflect a seasonal holiday theme. Games, activities, and contests are offered in an informal, festive atmosphere designed to provide interaction among the participants.

For more information on services and specific days and times of programs, URPF publishes a schedule brochure three times per year.
Western Michigan University is concerned about the safety and welfare of all students, faculty, staff, and visitors, and is committed to providing a safe and secure environment. Because no campus is isolated from crime, Western Michigan University has developed a series of policies and procedures that are designed to ensure that every possible precautionary measure is taken to protect persons on campus. Although we have been fortunate in not experiencing a significant number of serious crimes, it would not be honest to state that such incidents have not taken place. We have taken numerous steps to enhance security in our buildings and on our grounds. Additionally, we wish to provide all members of the University community with the facts about the policies and programs that are designed to increase safety and reduce crime.

**THE DEPARTMENT OF PUBLIC SAFETY**

The Department of Public Safety is located at 511 Monroe, just off the 1300 block of West Michigan Avenue, and is open 24 hours a day, providing around-the-clock protection and services to the University community. Officers are on duty 24 hours a day, 7 days a week in 365 days a year. The Department is responsible for law enforcement, security, and emergency response on campus.

Police officers are certified through the State of Michigan, receive their police authority from the Sheriff of Kalamazoo County, and have arrest powers throughout the county. The Department enforces federal, state, and local statutes and University regulations. The Department is one of five public safety services to the University community on a timely basis about campus crime and crime-related problems. These efforts include the following:

1. **Annual Report**: A comprehensive annual report of crime-related information is compiled, published, and distributed. This annual report is available to anyone upon request.
2. **Student Newspaper**: The student newspaper, Western Herald, publishes a summary of criminal incidents in every edition. This summary is prepared by student reporters who have access to police crime reports.
3. **Special Alerts**: If circumstances warrant it, special printed crime alerts can be prepared and distributed either selectively or throughout the campus.
4. **Federal and State Crime Reports**: The University Police, since its inception in July 1973, have submitted crime data to the Michigan State Police which is also forwarded to the Federal Bureau of Investigation. Summaries of this crime data are released annually in the *Crime in Michigan, Uniform Crime Report and Crime in the United States, Uniform Crime Reports.*

**CRIME STATISTICS**

The following crimes were reported to the University Police:

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Burglary</td>
<td>6</td>
<td>18</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Motor Vehicle Theft</td>
<td>17</td>
<td>6</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>The following arrests were made by the University Police:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquor Law Violations</td>
<td>69</td>
<td>69</td>
<td>121</td>
<td>364</td>
</tr>
<tr>
<td>Drunk Driving</td>
<td>128</td>
<td>124</td>
<td>157</td>
<td>143</td>
</tr>
<tr>
<td>Drug Abuse Violations</td>
<td>17</td>
<td>33</td>
<td>34</td>
<td>44</td>
</tr>
<tr>
<td>Weapons Possession</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>0</td>
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**CRIME PREVENTION**

We feel that almost every crime committed on campus is preventable. As part of the University’s educational mission, the Department of Public Safety attempts to teach members of the campus community how to reduce their chances of suffering from a violation of their property or themselves. For this reason, the Department has several officers trained in crime prevention techniques. The University’s crime prevention program is based upon the dual concepts of eliminating or minimizing criminal opportunities, whenever possible, and encouraging students, faculty, and staff to be responsible for their own security and the safety of others.

In addition to the student watch program, the parking lot escort service, and emergency telephone system, the following crime prevention programs and projects exist:

1. **Crime Prevention Presentations**: Numerous crime prevention presentations are made annually to such campus groups as freshman orientation, resident and off-campus students, international students, specific campus departments, academic classes, and student organizations.
2. **Printed Crime Prevention Material**: Printed crime prevention brochures, posters, and handouts related to theft and personal safety are widely distributed at crime prevention presentations and at various locations throughout campus.
3. **Operation Identification**: Operation Identification - the engraving of drivers license numbers on items of value - is strongly promoted and made available free-of-charge.
4. **Sexual Assault Awareness, Education and Prevention**: In cooperation with Women’s Resources and Services, Office of Student Life, Division of Student Affairs, numerous sexual assault awareness, education, and prevention presentations are made each year to members of the University community. See appendix B for the WMU Sexual Assault - Statement of Guidelines, Programs and Procedures.
5. **Enhanced Telephone System**: All on-campus telephone calls made to the Department of Public Safety’s business number (387-5555) or the emergency number (911) display the number of the originating telephone instrument. This enables the police dispatcher to determine the location of the call in case Public Safety’s knowledge of the origin of an emergency call even if the caller is unable to report the phone number.
to communicate verbally. The same is true for the police call box system.

6. Alarm Systems: A sophisticated alarm monitoring system, located in the Department of Public Safety, monitors a comprehensive network of security, fire, and panic alarm systems.

RESIDENCE HALL SECURITY
All interior residence hall doors to the living areas are locked 24 hours a day.

Non-residents must be escorted through these doors by a resident host. Additionally in most halls all exterior doors except the front lobby doors are locked 24 hours a day, and students are expected to enter only through the front door. The building staff locks the front doors from 10:00 p.m. to 7:00 a.m. on weekdays and from 8:00 p.m. to 7:00 a.m. on weekends. During the night when the front door is locked, a night security staff member stationed near the door monitors all persons coming through the door. Non-residents must sign a guest log and are not permitted to proceed unless accompanied by a resident host. Keys to the front door (for entry during the period when the door is locked) and to their own rooms are provided to residents at the time of check-in and must be loaned to anyone. The remaining exterior doors cannot be opened by key.

Each residence hall room has an excellent door lock, and an effective lock changing procedure is in place. All resident rooms located on the ground floor and those on roof levels are furnished with wooden rods that prevent the window from being opened from the outside. Student room doors leading to the corridor are equipped with a chain lock. In halls with shared bathrooms adjacent to the student room, the room side of the bathroom door is equipped with a lock.

Public safety staff (including student watch and escort service employees) residence hall staff, and building coordinators daily collect and report maintenance needs concerning lighting and building security to the physical plant.

The University campus is well lighted, and further lighting improvements are being made when needed or when buildings and parking lots are renovated. University landscape service staff members are very much aware of the potential hazard that dense shrubbery can present. Evergreens and shrubbery that are near sidewalks or against buildings are pruned so that they could not conceal a person. Low growing low density plantings that would not provide hiding places for intruders are utilized near building entrances used at night.

DRUG AND ALCOHOL POLICY
The University complies with federal, state, and local laws including those that regulate the possession, use, and sale of alcoholic beverages and controlled substances. The Department of Public Safety staff actively enforces laws concerning drugs and alcohol which includes:

1. Distribution, use, or possession of any illegal drug or controlled substance.
2. Possession and/or consumption of alcoholic beverages by individuals under the age of 21.
3. Illegal possession or consumption of an alcoholic beverage in a public place.
4. Driving under the influence of an alcoholic beverage or controlled substance.

In addition to criminal prosecution, the Student Code details drug and alcohol offenses and discipline for students - ranging from reprimand to expulsion from the University.

The University Substance Abuse Services are located in the Student Health Center. Confidential service is provided to students who seek assistance or are referred for assessment. New all students receive information about substance use and abuse and about relevant University services at an orientation program preceding their enrollment.

WEAPONS POSSESSION
The unauthorized possession or use of firearms, fireworks, flammable or dangerous chemicals, or other dangerous substances or compounds, and other lethal weapons is prohibited on University property or in University facilities.

Violation of the policy is confined to such specific situations as Reserve Officer Training Corps (ROTC) weapons training and police officers.

1. The Individual's Responsibility

The cooperation and involvement of students and employees themselves in a campus safety program is absolutely necessary. Individuals must assume responsibility for their own personal safety and the security of their personal belongings by taking simple, common sense precautions, for example, although the campus is well-lighted, an individual - male or female - may feel more comfortable using the University Police escort service when returning to the residence halls late at night. Room doors should be locked at night and when the room is unoccupied. Valuables such as stereo, cameras, and televisions should be marked with engraving or other instruments provided by the University Police at no charge. Bicycles should be registered with the University Police and should be secured with a sturdy lock. Individuals with cars must park them in their assigned area and keep their vehicles locked at all times. Valuables should be locked in the trunk. Individuals should not engage in any suspicious looking people whom they feel do not belong in the area or any unusual incidents to the University Police immediately.

APPENDIX A

SEXUAL ASSAULT VICTIM GUARANTEED

Sexual assault, including date and acquaintance rape, is a crime of very serious concern to the WMU Department of Public Safety. If you are the victim of a sexual assault that occurs on campus, the Department of Public Safety guarantees you the following:

1. We will meet with you privately, at a place of your choosing in this area, to receive the information we guarantee. Your name will not be released to the public or media.
2. You will not be pre-judged, nor be blamed for what has occurred.
3. Your complaint will be handled with sensitivity, understanding and professionalism.
4. If you prefer, you may be comfortable talking with a female or male officer, we will do our best to accommodate your request.
5. We will assist you in arranging any medical care or treatment that you need.
6. We will assist you in arranging any medical care or treatment that you need.
7. We will assist you with contacting a counselor and make available other resources to help you through this process.
8. Your complaint will be thoroughly investigated to help you achieve the best outcome. This may involve the arrest and full prosecution of the suspect responsible. You will be kept informed of the progress of the investigation and/or prosecution.
9. We will continue to be available to you, to answer your questions, explain the systems and processes involved (prosecutor, courts, etc.) and to be a listening ear if you wish.
10. Your complaint will be taken seriously, regardless of your gender or the gender of the suspect.

If you have been sexually assaulted, call the WMU Department of Public Safety at 387-5555 and say you want to privately make a sexual assault complaint. You may call any time of day or night. If we fail to achieve any part of the above guarantee, the Director of Public Safety, Robert J. Brown, will meet with you personally to address any problems. DPS wants to help make the WMU campus safe for all students, faculty, staff, and visitors.

Issued by Robert J. Brown, Director of Public Safety September 1, 1996

APPENDIX B

SEXUAL ASSAULT: STATEMENT OF GUIDELINES, PROGRAMS, AND PROCEDURES

Western Michigan University recognizes that sexual assault is a serious social problem that occurs among college students as well as within other segments of our society. The University makes a strong commitment to work toward preventing sexual assault within our community, to provide support and assistance to sexual assault victims, and to impose sanctions on those who have been found guilty of committing a sexual assault. Our goal is to foster and protect an environment of mutual respect and concern and a safe community in which learning and growing takes place.

For purposes of this statement, the term "sexual assault" includes rape, attempted rape, acquaintance rape and other sex offenses, both forcible and non-forcible.

PREVENTION EFFORTS

The Sexual Assault Education Project (SAEP), an ongoing program of Women's Resources and Services (WRS), Office of Student Life, provides educational programs for our students focusing on acquaintance rape. Programs are presented in residence halls, for student organizations, in academic courses, and as part of University 101: Freshman Seminar. In addition, all entering first-year students attend a presentation on sexual assault during freshman orientation. All freshmen and all students attending SAEP presentations receive a brochure that includes the information contained in this policy statement. This brochure is available and distributed through other means and readily available at a number of campus locations.

The WMU Department of Public Safety presents numerous crime prevention programs annually that include discussion of personal safety issues. Programs are presented to such campus groups as freshman orientation, resident and off-campus students, international students, specific campus departments, academic classes, and student organizations. Printed crime prevention materials are distributed during presentations and at various locations throughout campus.
RESPONDING TO SEXUAL ASSAULT

The University recognizes the right of a sexual assault victim to decide, without pressure or coercion, what action s/he will take following an assault. The University encourages students to report all crimes to the police and to pursue sanctions against offenders through the University judicial process. The University makes information available to students about sexual assault victim rights, options, and resources for help. Staff also assist victims in carrying out their decisions and accessing needed services.

The University encourages victims of sexual assault to take the following steps following an assault:

1. Preserve physical evidence. A special physical examination performed at the hospital collects evidence that will be helpful if the victim later decides to prosecute the assailant. To preserve evidence, the victim should not wash, brush teeth, comb hair, use the toilet, douche, destroy clothing or straighten up the area where the assault occurred. The victim should also bring another set of clothing to the hospital, since the clothing a victim had on during the assault will probably be taken into evidence.

2. Report the assault to the police—dial 911. It is the victim's decision whether or not to report the assault to the police. Reporting a sexual assault to the police may protect the victim and others from possible future victimization by helping public safety officers apprehend the assailant. A police report also maintains the victim's future option of criminal prosecution, and helps support a University disciplinary action or a civil law suit against the perpetrator. Making a police report does not obligate the victim to prosecute the assailant. Whether or not the case will be prosecuted is a decision that is made later, based on a number of factors. Except as otherwise required by law or court order, the Department of Public Safety will not release the victim's or the suspect's name or any identifying information to the media or the public.

3. Get medical attention. The rape evidence exam should be performed as soon after the assault as possible. In Kalamazoo, the exam is available at Bronson Methodist Hospital or Borgess Medical Center emergency rooms. If the victim decides not to have the rape evidence exam, s/he should still be examined for possible injury, pregnancy, and sexually transmitted infections. An exam for these purposes is available at the Sonders Health Center, Planned Parenthood of South Central Michigan, or from a physician of choice.

4. Ask for information, support, and assistance. To help sexual assault victims in obtaining accurate and complete information about their rights, options, and available resources for help, as well as any assistance they need in carrying out decisions about what to do following an assault, the University provides the services of a Sexual Assault Victim Advocate (SAVA). To contact a SAVA, call Women's Resources and Services, 387-2995. Sexual assault victims may request special accommodations, reinterpretations or arrangements and, when appropriate, a change in University living arrangements. Requests for such assistance may be made directly to the Dean of Students (387-2150) or through the SAVA to the Dean of Students. The assistance of a SAVA is available during weekdays (Monday through Friday, 8:00 a.m. to 6:00 p.m.). For immediate support and assistance at other times, students should call the YWCA Sexual Assault Program (SAP) 24-hour crisis line, 345-3036. "YWCA SAP" provides information and support by phone or on-site at the hospital or police station.

5. Report the assault to Student Judicial Affairs. Sexual assault is expressly prohibited by the WMU Student Code, and the University has the right to discipline students who violate the University's rules and regulations. Anyone who is assaulted by a WMU student, or who knows that a sexual assault by a WMU student has taken place, whether on campus or elsewhere, may request that the University take disciplinary action against the accused. It is not necessary for the victim to file a police report in order to pursue sanctions through the University judicial system; however, it is strongly recommended. Since Student Judicial Affairs has limited resources to investigate a crime such as sexual assault, it is generally to the victim's benefit to file a police report. Pursuing sanctions through the University does not preclude the victim from also pursuing criminal prosecution or a civil lawsuit.

The University judicial process is initiated by a complaint being made to the University Judicial Officer (387-2160). A detailed description of the process is included in the Student Code, copies of which are available at many offices on campus, including Women's Resources and Services. Sexual assault victims are assured the following rights within the University judicial process:

1. The right to be present during the entire proceeding.
2. The right to have a counselor. Sexual Assault Victim Advocate, support person, or lawyer present throughout the process to advise and provide support.
3. The right to not have their sexual history discussed during the proceedings, except as it relates to the specific incident in question.
4. The right to relate their account of the incident.
5. The right to be informed of the results of the judicial proceeding.
6. The right to have their name and any identifying information kept confidential except as otherwise required by law, court order, or University policies or needs.
7. The right to a speedy hearing and decision.

A student charged with committing sexual assault is assured of the same rights. A student found guilty of committing a sexual assault or other sexual offense by Student Judicial Affairs will be given a penalty appropriate to the offense. Possible sanctions range from a reprimand to expulsion from the University.

RESPONDING FOR SUPPORT AND ASSISTANCE IN KALAMAZOO

MEDICAL CARE
Bronson Methodist Hospital, 252 East Lovell, 341-6386
24-hour emergency care; rape evidence exam.

Borgess Medical Center, 1521 Gull Road, 383-4815
24-hour emergency care; rape evidence exam.

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COUNSELING SERVICES

WMU Counseling Center: 2510 Faunce Student Services, 387-1850
Free private and confidential counseling. YWCA Sexual Assault Program, 353 East Michigan 345-9412 (office), 345-3036 (24-hour crisis line)
Free, short-term counseling for victim, friends, and family. Individual and group sessions; services on campus one day/week.

INFORMATION, SUPPORT, ADVOCACY

Sexual Assault Victim Advocate, Women's Resources and Services, A331 Ellsworth Hall, 387-2995
Information, referral, emotional support, and assistance in regard to medical care, police involvement, counseling, academic concerns, University judicial process, free. Victim Assistance Unit, Kalamazoo Prosecuting Attorney's Office, 383-8677
Assistance to crime victims involved in a court case. Also provides assistance with filing Crime Victim's Compensation claims which may compensate a victim for expenses related to medical and counseling services, and lost wages.

YWCA Sexual Assault Program, 353 East Michigan, 345-9412 (office), 345-3036 (24-hour crisis line)
24-hour on-site support and assistance to victim and family/friends at hospital or police station; support and assistance to victim during all phases of prosecution; free.

STUDENT JUDICIAL AFFAIRS

University Judicial Officer, Faunce Student Services, 387-2160
Advises the University's judicial system for handling complaints of student violations of the Student Code.

WMU DEPARTMENT OF PUBLIC SAFETY

511 Monroe, 387-5555 (non-emergency), 911 (emergency).

INFORMATION ISSUED

Issued by Theresa A. Powell, Vice President for Student Affairs, July 1, 1993. Approved by Dieter H. Haenicke, President.

FURTHER INFORMATION

Further information about campus safety can be obtained from the Department of Public Safety, 616-387-5555.

This information is provided in compliance with the Federal Crime Awareness and Campus Security Act of 1990.
Student Academic Rights and Responsibilities

Western Michigan University defines the issues of academic evaluation, academic honesty, conduct in academic research and academic policy application as matters of academic conduct. The following policies and procedures shall apply to all matters of student academic conduct.

Student Academic Rights and Responsibilities

1. Student performance will be evaluated solely on academic criteria, as specified by the instructor in class or on the course outline in accordance with departmental, college and university policy.
2. Students have protection against prejudiced or capricious academic evaluation.
3. Students are free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion and interpretation, but they are responsible for learning the content of any course of study for which they are enrolled.
4. Students will be informed by the faculty about course requirements, evaluation procedures, and the academic criteria to be used in each class. This information will be provided in writing at the beginning of the semester or sufficiently in advance of actual evaluation.
5. Students have the right to have all their examinations and other graded material made available to them with an explanation of the grading criteria. Faculty will retain all such materials not returned to the student for at least one full semester (or through spring plus summer sessions) after the course was given. Faculty are not required to return such material to the student but must provide reasonable access.

Academic Honesty

If a student is uncertain about an issue of academic honesty, he/she should consult the faculty member to resolve questions in any situation prior to the submission of the academic exercise.

Violations of academic honesty include but are not limited to:

Cheating

Definition

Cheating is intentionally using or attempting to use unauthorized materials, information, notes, study aids or other devices or materials in any academic exercise.

Clarification

1. Students completing any examination are prohibited from looking at another student's examination and from using external aids (for example, books, notes, calculators, conversation with other) unless specifically allowed in advance by the faculty member.
2. Students may not have others conduct research or prepare work for them without advance authorization from the faculty member. This includes, but is not limited to, the services of commercial term paper companies.

Fabrication, Falsification and Forgery

Definition

Fabrication is the intentional invention and unauthorized alteration of any information or citation in an academic exercise. Falsification is a matter of altering information while fabrication is a matter of inventing or counterfeiting information for use in any academic exercise or University record. Forgery is defined as the act to imitate or counterfeit documents, signatures, and the like.

Clarification

1. "Invented" information shall not be used in any laboratory experiment, report of results or academic exercise. It would be improper, for example, to analyze one sample in an experiment and then "invent" data based on that single experiment for several more required analyses.
2. Students shall acknowledge the actual source from which cited information was obtained. For example, a student shall not take a quotation from a book review and then indicate that the quotation was obtained from the book itself.
3. Falsification of University records includes altering or forging any University document and/or record, including identification material issued or used by the University.

Multiple Submission

Definition

Multiple submission is the submission of substantial portions of the same work (including oral reports) for credit more than once without authorization.

Clarification

Examples of multiple submission include submitting the same paper for credit in two courses without the faculty member's permission; making revisions in a credit paper or report (including oral presentations) and submitting it again as if it were new work. (Different aspects of the same work may receive separate credit; e.g., a report in history may receive credit for its content in a history course and for the quality of presentation in a speech course.

Paraphrase

Definition

Plagiarism is intentionally, knowingly, or carelessly presenting the work of another as one's own (i.e., without proper acknowledgement of the source). The sole exception to the requirement of acknowledging sources is when the ideas, information, etc., are common knowledge.

Instructors should provide clarification about the nature of plagiarism.
Academic Grade Appeals Procedure

1. Whenever a student believes he/she has a grievance regarding the grade they have received, they shall first arrange a meeting with the faculty member who will explain the reasons for the grade and, if warranted, recommend a change.

2. The student must initiate contact with the faculty member involved or in his/her absence the appropriate unit chair/director within 90 days of the end of the semester for which the grade was assigned. Failure to act within the ninety-day time period will disqualify the student from further consideration of the grade.

3. If the student believes he/she has not received a satisfactory resolution of the grievance from the faculty member he/she shall then meet with the academic unit chair/director, who may effect a satisfactory resolution.

4. If the student remains dissatisfied after meeting with the academic unit chair/director, the student may meet with the University ombudsman for an appeal. The function of the ombudsman in this situation is to collect the student's grievance from the student, academic unit chair/director, and the faculty member. The University ombudsman may make a decision that: (a) the student's grievance is not warranted and should not be considered further; (b) the student's grievance is warranted and the ombudsman will attempt to arrange a resolution acceptable to the faculty member and the student; or (c) the student's grievance is warranted, but an agreeable resolution cannot be reached, and the grade will be reinstated.

5. The Academic Fairness Committee is appointed by the University president from a roster of faculty recommended by the University Senate Executive Board and students recommended by the Western Student Association and the Graduate Student Advisory Committee. The Committee consists of four faculty, three undergraduate students, and three graduate students, with the chair appointed by the University president.

6. When a case is presented to the Academic Fairness Committee, the chair will call the Committee into session within 30 days of the referral. The Committee shall investigate the case, make sure that all interested parties have a full opportunity to present their positions. The Committee may decide upon: (a) no grade change, (b) a change of letter grade, (c) credit/no credit, or (d) any other grade used by the Records Office. The decision of the Committee is final and must be made within 60 days after the first meeting of the Committee on the case.

7. If the Academic Fairness Committee decides there should be no change of grade, it will so inform the student, the faculty member, the academic unit chair/director, and the academic unit. If the Committee recommends a change of grade, the Committee will first inform the faculty member of its intent so that he/she may initiate the change. If the faculty member prefers not to initiate the change, the Committee will notify the registrar of the change.
8. To protect all parties involved, confidentiality consistent with the Committee's task will be maintained.

9. Occasions do occur when a faculty member or other academic official may wish to question a grade or a grade change independent of the appeals procedure (items 1-7). In such instances, the faculty member shall be consulted.

General Academic Appeals Procedure

Students may appeal charges of or sanctions for violations of the academic rules and guidelines, including academic honesty, conduct in research, or applications of an academic policy using the following procedures:

1. A student who disagrees with the charge or decision shall first meet with the faculty member or person bringing the charge or making the decision within 90 days of receiving notification of the action.

2. If the disagreement between the student and the faculty member or other academic official is not resolved, a student may appeal in writing to the next administrative level (e.g., academic unit) within 14 calendar days of receiving notice of the first review. If the academic unit has approved procedures in place for considering such appeals, the chair/director shall refer the appeal to that process. If the unit does not have established procedures, the chair/director shall consider the appeal.

3. If no resolution is reached and the student wishes to appeal the unit level decision, he/she may request in writing a review by the college dean within 14 calendar days of receiving notice of the unit's decision. In such cases, dismissal from an academic program or from the University, the college dean shall refer the student's appeal to a College Academic Review Board under procedures outlined below.

The College Academic Review Board will make a recommendation to the dean within 30 days:

- College Academic Review Board: Each college (excluding the Honors College and the Graduate College) will establish a College Review Board consisting of five members, three faculty and two students. The three faculty members are elected by the faculty educational records. These members include faculty, administrative, clerical and personnel within the institution, to officials of other institutions in which students seek to coordinate the inspection and review of the students' records will be corrected or amended in accordance with the decisions of the hearing officer. The hearing officer who will adjudicate such challenges will be the Registrar, or a person designated by the Registrar, who does not have a direct interest in the outcome of the hearing.

- December 31 of each academic year. The dean may accept the College Academic Review Board's recommendation or may forward the Review Board's recommendation and his/her alternate recommendation to the provost. In a case involving a graduate student, the college dean will consult with the dean of the Graduate College before issuing a decision.

- If the student wishes to appeal the decision of the dean or the College Review Board, he/she may request in writing a review by the provost within 14 calendar days of receiving notification of the college level review. The provost's decision will be final except for written appeal to the president, when academic dismissal from the institution will result in the student's permanent academic record.

- Students may appeal charges of academic dishonesty made by the registrar, Undergraduate Admissions, the Graduate College or other units not in an academic college structure first to the director of that unit, and then to the provost. The provost's decision will be final.

- At each review level in the appeals process, the reviewer shall investigate the appeal, making sure that all interested parties have a full opportunity to present their positions. The reviewer shall be able to recommend: (a) support for the initial charge and/or sanction; (b) modification of the initial charge and/or sanction; (c) no support for the initial charge and/or sanction. Records must be maintained at each review level.

- If a student fails to appeal to the next step within any of the time limits specified in this policy, the prior action will be considered final.

- Throughout the appeals process, a student may select one representative to provide assistance during the appeal. However, the student must advise the review officer or body, in writing, and identify the representative when requesting an appeal.

The Family Educational Rights and Privacy Act

The Family Educational Rights and Privacy Act of 1974 is a Federal law which states that (a) a written institutional policy must be established and (b) a statement of adopted procedures covering the privacy rights of students must be made available. The law provides that the institution will maintain the confidentiality of student education.

Western Michigan University accords all the rights under this law to students who are declared independent. No one outside the institution shall have access to, nor will the institution disclose any information from students' educational records without the written consent of the student, except to personnel within the institution, to officials of other institutions in which students seek to enroll, to persons or organizations providing services to students financial aid, to accrediting agencies carrying out their accreditation function, to persons in compliance with a judicial order, and to persons in an emergency in order to protect the health or safety of students or other persons. All these exceptions are permitted under the Act.

Within the Western Michigan University community, only those members, individually or collectively, acting in the students' educational interest are allowed access to student educational records. These members include faculty, administrative, clerical and professional employees, and other persons who manage student record information (e.g., Office of the Registrar, Controller, Financial Aid, and the Office of Academic Records Orientation). At its discretion, the institution may provide Directory Information in accordance with the provisions of the Act, to include: student name, address, telephone number, date and place of birth, current and major field of study, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended by the student, participation in officially recognized activities and sports, and weight and height of members of athletic teams. Students may withhold Directory Information by notifying the Registrar in writing within the official drop-add period of each semester or session. The law provides that the student, with the right to inspect and review information contained in their educational records, to challenge the contents of these records, to have a hearing if the outcome of the challenge is unsatisfactory, and to submit explanatory statements for inclusion in their files if they feel the decisions of the hearing panels to be unacceptable. The Registrar at Western Michigan University has been designated by the President to coordinate the inspection and review procedures for student educational records, which include admissions, personal, academic, and financial data, academic, cooperative education, and placement records. Students wishing to review their educational records must make written requests to the Registrar. Records covered by the Act will be made available within forty-five days of the request. Students may have copies made of their records with certain exceptions, (e.g., a transcript of an original or source document elsewhere). These copies are made at the students' expense, at the prevailing rate of ten cents per page. Educational records do not include the records of instruction, administrative, and educational personnel, which are the sole possession of the maker and are not accessible or revealed to any individual except a temporary substitute for the original records of the law enforcement unit; student health records; employment records; or alumni records. Health records, however, may be reviewed by physicians of the students choosing.

Students may not inspect and review the following, as outlined by the Act: financial information submitted by the student; confidential letters and recommendations associated with admissions, employment, or job placement, or honors to which they have waived their rights of inspection and review, or educational records containing information about more than one student, in which case the institution will permit access only to that part of the record which pertains to the student inquiring. The institution is not required to permit students to inspect and review confidential letters and recommendations placed in their files prior to January 1, 1975, provided those letters were collected under established policies of confidentiality and were used only for the purposes for which they were collected.

Students who believe that their educational records contain information that is inaccurate or misleading, or is otherwise in violation of their privacy or other rights, may discuss their records contain information that is inaccurate or misleading, or is otherwise in violation of their privacy or other rights, may discuss their reasons for the decisions, and will be delivered to all parties concerned. These records will be corrected or amended in accordance with the decisions of the hearing officer, if the decisions are in favor of the students. If the decisions are unsatisfactory to the students, the students may place with the
Sexual Harassment and Sexism

Western Michigan University is committed to an environment which encourages fair, humane, and beneficial treatment of all faculty, staff, and students. In accordance with that fundamental objective, the University has a continuing commitment to assure equal opportunity and to oppose discrimination because of race, sex, sexual orientation, age, religion, national origin, or handicap. Therefore, in that same perspective, neither sexual harassment nor sexism will be tolerated at Western Michigan University. It is expected that each member of the University community will consider himself/herself responsible for the proper observance of this policy.

DEFINITIONS

Sexual Harassment: Sexual harassment is defined as unwelcome sexual conduct which is related to any condition of employment or evaluation of student performance. This definition is intended to include more than overt advances toward actual sexual relations. It applies as well to repeated or unwarranted sex-related statements, unwelcome touching, or sexually explicit comments, and/or graphics. All persons should be sensitive to situations that may affect or cause the recipient discomfort or humiliation or may display a condescending sex-based attitude towards the person. Sexual harassment is illegal under both state and federal law. In some cases, it may be subject also to prosecution under criminal sexual conduct act. Conduct will be defined as sexual harassment when any or all three of the following conditions exist:

1. The sex-related situations are unwelcome by the recipient.*
2. A specific or implied connection with employment or student status is involved.
3. The sexual harassment continues after the recipient has made it clear that the conduct is unwelcome.*

*Note: In cases of overt physical sexual conduct, a plaintant threat if sexual favors are not given, or promised reward in exchange for sexual favors, no notice that the conduct is unwelcome shall be necessary and a finding of sexual harassment may be based on a single occurrence.

Sexism: Sexism is defined as the perception and treatment of any person, not as an individual, but as a member of a category based on sex. Whether expressed in overt or subtle form such as sex-related jokes or materials, sexism in the classroom or workplace is unacceptable at the University and its eliminations shall be the responsibility of the entire University community. Depending upon the seriousness of the misconduct, informal corrective action may be adequate.

COMPLAINT PROCEDURE

Sexual harassment and sexism constitute acts of misconduct. Therefore, whenever such acts are reported and confirmed, prompt, disciplinary action will be taken, up to and including discharge. However, to enable the University to act through these formal procedures, employees and students are encouraged to report such incidents. Employees and students should report such conduct to the Director of the Affirmative Action Office.

RECOGNIZING SEXUAL HARASSMENT AND SEXISM

Sexism and sexual harassment can take the form of:
- Derogatory jokes or comments based on sex
- The use of graphics or other materials degrading persons based on their sex.
- Unwelcome touching or ogling.
- Overt advances.
- Coercion, with the promise of reward.
- Threats, with the promise of punishment;
- Physical assault.

Sexism and sexual harassment are prohibited at Western Michigan University.

The University’s policy on harassment and sexism states: “Sexual harassment and sexism constitute acts of misconduct. Therefore, whenever such acts are reported and confirmed, prompt disciplinary action will be taken, up to and including discharge.”

YOU COULD BE A VICTIM

Who are the victims? Anyone, male or female, young or old, can be the victim of sexual harassment from someone of the opposite sex. But most often, women are harassed by men. Any woman can be the target of harassment, but two groups are the most vulnerable: women entering male-dominated fields of study, and women from minority groups. Both of these types of women may feel uncomfortable and out of place in their environments. The harasser, sensing this discomfort, finds them easy prey.

TAKING ACTION AGAINST THE SEXUAL HARASSER

If you are being harassed, take action to stop it. The University will support you.
- Some options available to you are:
  - Say no. Make it loud and clear. A harasser does not expect confrontation.
  - Keep records of all incidents and confrontations.
  - Find witnesses or others who will back up your claim.
  - Get support from a friend, counselor, professor, or anyone else you trust. Make sure you don't keep it bottled up inside; the more help you get, the faster the harasser will stop.

Student Conduct

Rules and regulations in the Student Code covering student conduct are developed by the Division of Student Affairs and reviewed by the Admissions, Financial Aid and Student Affairs Council, and approved by the University administration, and students. The policies, when approved by the Board of Trustees, are published in The Student Code. Rules and regulations appearing in this code are developed under the philosophy reflected in this statement.

Western Michigan University is committed to maintaining an environment which protects the right of students to freely pursue academic inquiry and personal expression while encouraging them to develop critical judgment, citizenship, and self-discipline.

The Dean of Students has overall responsibility for student conduct and discipline. When infractions of rules and regulations occur, students will be referred to the Office of Student Judicial Affairs for disposition.

President’s Statement on Racial and Ethnic Harmony

Discrimination: Complaints and Grievance Procedure

Western Michigan University, in accordance with the law, prohibits discrimination in the provision of all student instruction, activities, and programs. Discrimination based on race, color, religion, national origin, sex, sexual orientation, age, handicap, height, weight, or marital status shall not be tolerated in the determination of eligibility, participation, or grading for any courses or program established for the benefit of students unless otherwise provided by law.

Students who have inquiries about the University’s Anti-Discrimination Policy or about anti-discrimination laws, including Title IX and the Rehabilitation Act of 1973, or who have complaints or prohibited discrimination, may file their inquiries and complaints with the Affirmative Action Officer, 274 Walwood Hall (387-8970).

The Affirmative Action Officer will receive and investigate complaints of prohibited discrimination filed with him/her by students and may assist the student(s) resolving their concerns. The complaint, an oral allegation or charge against the University, an employee(s), or agent, stating prohibited discrimination has occurred, must be filed with the Affirmative Action Officer or professor, instructor, or program director within fourteen (14) calendar days of events or knowledge of events giving rise to the complaint. A complaint must be filed by the student and discussed with the Affirmative Action Officer before any formal grievance can be initiated.

The Affirmative Action Officer will make reports and recommendations to the complaining students and to the academic dean or program director concerned. In the event the student’s complaint is not satisfactorily resolved, the student may file a formal written grievance. Formal written grievances protesting prohibited discrimination shall be filed in accordance with the Anti-Discrimination Grievance Procedure for Students.

A grievance is defined as a formal written allegation by a student(s) that there has been a violation of the University’s Anti-Discrimination Policy or a discriminatory application of official University policies, procedures, rules, or regulations regarding student rights or privileges.

Any student(s) who wants to file such grievance should contact the Affirmative Action Officer, 274 Walwood Hall (387-8970). The grievance must be filed with the Affirmative Action Department on an official University Grievance Form and signed by the student(s) involved. The grievance must be timely, state all facts relevant to the protested events, indicate when the incident(s) occurred, and specify the discriminatory acts and policies, rules, or regulations involved.

The Affirmative Action Department will serve as an intermediary for written grievances and is to receive copies of all such grievance correspondence. Any student(s) filing a written grievance may choose to have a representative present at any step in the grievance procedure. The Affirmative Action Department is given at least twenty-four (24) hours notice prior to the concerned meeting.
THE GRIEVANCE PROCEDURE

Step 1: Departmental Level
A formal grievance must be filed with the Affirmative Action Department no later than thirty (30) calendar days after the event or events being grieved took place. The Affirmative Action Department will then forward the grievance to the Step 1 representative, who will be the Department Head or any other person designated by the appropriate Vice President to respond to the grievance. The Step 1 representative must provide a written answer within fourteen (14) calendar days after receiving the formal grievance.

Step 2: Appeal to the Vice Presidential Level
If the grievance is not resolved at Step 1, the student may appeal to the appropriate Vice President within seven (7) calendar days after receiving the departmental representative’s written answer. The student must file the appeal with the Affirmative Action Department, using an official University appeal form. The Affirmative Action Department will, in turn, notify the departmental representative and the appropriate Vice President of the student’s appeal. The appropriate Vice President or his/her designated representative will then arrange a meeting with the grievant, his/her representative (if requested), and any other individuals who may help resolve the grievance. This meeting must be held within fourteen (14) calendar days after the appropriate Vice President or his/her designee hearing the appeal receives the grievance from the Affirmative Action Department. Within seven (7) calendar days after this meeting, the appropriate Vice President or his/her designee hearing the appeal will communicate an answer in writing to the involved parties.

Step 3: Appeals to the Presidential Level
If the grievance has not been resolved at Step 2, it may be appealed to the University President. The Affirmative Action Department must receive the appeal within seven (7) calendar days after the grievant receives the Step 2 answer. The President, at his/her discretion, will handle the grievance personally or will designate a representative to conduct a hearing or investigation of the grievance, report findings, and recommend a decision. The President will make the final grievance decision and communicate it to the appropriate parties.

In addition to filing a grievance with the University’s Affirmative Action Department, the student may file a complaint directly with the Office of Civil Rights, U.S. Department of Education or pursue both avenues of complaint resolution.
DEGREES AND CURRICULA

Bachelor's Degrees
The Board of Trustees, on recommendation of the President and faculty of Western Michigan University, confers degrees as follows:

BACHELOR OF ARTS
BACHELOR OF BUSINESS ADMINISTRATION
BACHELOR OF FINE ARTS
BACHELOR OF MUSIC
BACHELOR OF SCIENCE
BACHELOR OF SCIENCE IN ENGINEERING
Aeronautical; Automotive; Computer Systems, Electrical; Material Science; Industrial; Manufacturing; Mechanical; and Paper
BACHELOR OF SCIENCE IN MEDICINE
BACHELOR OF SCIENCE IN NURSING
BACHELOR OF SOCIAL WORK
SECOND BACHELOR'S DEGREE
To receive a second baccalaureate degree, a student must:
1. previously hold a degree from a regionally accredited college or university;
2. complete a minimum of 30 credits in residency beyond the requirements for the first degree;
3. complete the requirements for a new major (or GUS concentration); and
4. meet all specified University, College, certification and program requirements to include general education, proficiencies, and a minimum 2.0 GPA.

Generally, no second degree will be granted from the college or academic area in which the first degree was earned. Rather than seeking a second baccalaureate degree, students may enroll as post-baccalaureate students and have the completion of an additional major recorded on the transcript.

Students who wish to pursue two or more baccalaureate degrees from WMU must also meet the above requirements. Students who meet the requirements for more than one major program but who do not meet the above standards may receive a single degree with more than one major recorded on the transcript. NOTE: College or program accreditation standards may impose additional requirements or limitations. Completion of certification requirements generally do not qualify the student for a second degree.

Graduate Degrees
MASTER OF ARTS
MASTER OF BUSINESS ADMINISTRATION
MASTER OF DEVELOPMENTAL ADMINISTRATION
MASTER OF FINE ARTS
MASTER OF MUSIC
MASTER OF PUBLIC ADMINISTRATION
MASTER OF SCIENCE
MASTER OF SCIENCE IN ENGINEERING
MASTER OF SCIENCE IN ACCOUNTANCY
MASTER OF SOCIAL WORK
SPECIALIST IN EDUCATION
Sixth-year programs are offered in Educational Leadership and School Psychology.
DOCTOR OF EDUCATION
Three doctoral degree programs are offered by the College of Education: Counseling and Personnel Education Leadership, and Special Education.
DOCTOR OF PHILOSOPHY
Programs leading to the Ph.D. degree are offered in Biological Sciences, Comparative Religion, Computer Science, Economics, English, Geology, History, Mathematics, Political Science, Psychology, Science Education, and Sociology.
DOCTOR OF PUBLIC ADMINISTRATION

Certificates
VALIDITY LEVEL OF MICHIGAN CERTIFICATES
There are two basic levels of Michigan teaching certificates currently available:
1. ELEMENTARY certificates issued after September 1, 1988 have the following validity: Kindergarten through eighth grades all subjects in a self-contained classroom, and sixth to, and including, eighth grades in the teachable major(s) and/or minor(s).
2. SECONDARY certificates issued after September 1, 1988 have the following validity: Seventh through twelfth grade in teachable major(s) and minor(s).

TYPES OF MICHIGAN CERTIFICATES
There are four basic types of Michigan regular and vocational certificates currently available: the Provisional, the Professional certificate, which may eventually be obtained when the holder of a Provisional certificate meets requirements as outlined in the "Professional Certificate Requirements" section below; the Temporary Vocational Authorization; and the Occupational Education certificate. The Professional certificate replaced the Continuing certificate and the Occupational Education certificate replaced the Full Vocational certificate on July 1, 1992.

PROVISIONAL CERTIFICATE REQUIREMENTS
A Provisional certificate is issued by the Michigan Department of Education upon satisfactory completion of an approved program, including a bachelor's degree, offered by a teacher preparation institution and payment of a $125.00 certificate fee. An overall grade point average of 2.5 is required at Western Michigan University for a Provisional certificate. Effective September 1, 1991, the Michigan Board of Education issues a teaching certificate to a person only after the person passes both a basic skills examination and an appropriate subject area examination for each subject in which certification is granted.

PROFESSIONAL CERTIFICATE REQUIREMENTS
The requirements for the Professional certificate are:
1. EXPERIENCE. The candidate must have taught successfully for the equivalent of three years following the issuance of and within the grade level and subject area validity of the Provisional certificate.
2. PLANNED PROGRAM. The candidate must earn eighteen semester hours after the issuance of the Provisional certificate in a course of study established and/or approved as a "planned program" by an approved teacher education institution. A person with an approved master's or higher degree (regardless of when earned) is not required to complete the eighteen semester hour program.
3. PLANNED PROGRAM. The candidate must earn eighteen semester hours after the issuance of the Provisional certificate in a course of study established and/or approved as a "planned program" by an approved teacher education institution. A person with an approved master's or higher degree (regardless of when earned) is not required to complete the eighteen semester hour program.
4. MEET ALL REQUIRED COURSES. The candidate must complete all required University, College, certification and program requirements to include general education, proficiencies, and a minimum 2.0 GPA.

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3. PLANNED PROGRAM. The candidate must earn eighteen semester hours after the issuance of the Provisional certificate in a course of study established and/or approved as a "planned program" by an approved teacher education institution. A person with an approved master's or higher degree (regardless of when earned) is not required to complete the eighteen semester hour program.
4. MEET ALL REQUIRED COURSES. The candidate must complete all required University, College, certification and program requirements to include general education, proficiencies, and a minimum 2.0 GPA.
Certificate by WMU must earn at least twelve semester hours of the eighteen semester hour program from WMU. Credits may not be earned by correspondence, from a two-year college, or from a non-accredited institution. The candidate must earn a grade equivalent to a "C" or better in all courses.

All candidates for the Michigan Provisional certificate must present a minimum of six semester hours of reading methodology credit for the elementary level certificate or three semester hours of reading methodology credit for the secondary level certificate. Such credit may have been completed at any stage of the candidate’s college level preparation.

Individuals holding a Provisional certificate with a vocational education endorsement are required to complete ten semester hours of relevant vocational education credit within the eighteen semester hour planned program in order to earn an Occupational certificate.

Provisional Renewal Requirements

When the Provisional certificate expires before the holder is able to fulfill all requirements for the subsequent certificate, such holder can, at any future time(s), qualify in the following manner for a renewal of the Provisional certificate: The first three-year renewal is available any time after actual completion of the first ten semester hours of the eighteen semester hour "planned program." After expiration of the first three-year renewal, if the holder has not completed the experience requirements for the Professional certificate, a second three-year renewal is available any time after actual completion of the entire eighteen semester hour "planned program."

Certification Application Procedures

The Professional, Occupational, and Provisional Renewal will be recommended by the approved Michigan teacher education institution which "planned" or approved the eighteen semester hour program of additional credit. The candidate applies directly to such institution which "planned" or approved the eighteen semester hour program from WMU. The candidate must earn a grade equivalent to "C" or better in all courses.

Validity Span of Michigan Certificates

All initial Michigan Provisional certificates, Provisional Renewal certificates, Professional Education certificates, Occupational Education certificates, and Temporary Vocational Authorizations expire on June 30 of the appropriate year, determined by the month and year of issuance. The initial Michigan Provisional certificate and the Temporary Vocational Authorization are valid for 5½ to 6½ years, depending on the month of issuance. A Provisional Renewal is valid for 2½ to 3½ years depending on the month of issuance. Continuing certificates (issued prior to July 1, 1992 — predating the present Professional certificate), Permanent certificates (issued prior to July 1, 1976 — predating the Continuing certificate), and Full Vocational Authorizations (issued prior to July 1, 1992 — predating the Occupational Education certificate), have identical validity spans and identical reinstatement requirements. They automatically remain valid as long as the holder serves in an educational capacity. Any full-time or part-time education employment at any level) for a minimum of 100 days (need not be consecutive days) in any given five-year period. (The "given five-year period" is determined by looking backward — NOT forward — from any current date to the equivalent date five years earlier.)

Professional Education and Occupational Education Certificates

Beginning July 1, 1992, persons receiving a Professional Education certificate or an Occupational Education certificate will be subject to the provisions of Rule 380:1133. The certificate(s) will be renewed every five years on the basis of six (6) semester hours of approved academic credit from a four-year teacher preparation institution or the equivalent in State Board approved professional development programs that will award credits obtained as Continuing Education Units (SB-CEU's).

Undergraduate Curricula and Approved Majors

College of Arts and Sciences: Students selecting a communication or psychology program will be placed in the (1) "PRE-COMMUNICATION" (PCOM) or the (2) "PRE-Psychology" (PPY) MAJOR respectively until requirements have been met. See the Department of Communication or Department of Psychology section for complete information on admission requirements.

CURR: LEC Liberal Education

Major: AMS American Studies

ANT Anthropology

BIO Biology

BCS Biochemistry

BMK Biomedical Sciences

BCP Broadcast Cable Production

BUC Business-Oriented Chemistry

CHE Chemistry

COS Communication Studies

CSP Computer Science

CPL Computer Science—Theory and Analysis

CRJ Criminal Justice

EAM Early Childhood

ECC Economics

ENG English

FRE French

GEO Geography

GEL Geology

GEO Geophysics

GER German

HIS History

HYS Hydrology

IPC Interpersonal Communication

JNL Journalism

LAT Latin

MAT Mathematics

MED Media Studies

OQM Organizational Communication

PHI Philosophy

PHY Physics

POL Political Science

PPA Political Science in Public Administration

PSY Psychology

PUB Public History

PUB Public Relations

REL Religion

SOC Sociology

SPA Spanish

STA Statistics

SPM Student Planned Major

TCM Telecommunication Management

TOU Tourism and Travel

CURR: STC Student Planned Curriculum

Major: STC Student Planned Curriculum

Preprofessional Programs

PAH Pre-Architecture

PD Pre-Dentistry (Select a major from Liberal Education Curriculum)

PL Pre-Law (Select a major from Liberal Education Curriculum)

PM Pre-Medicine (Select a major from Liberal Education Curriculum)

Coordinator Majors: These are majors to be selected only along with a standard major.

AFS African Studies

AIS Asian Studies

BAS Black American Studies

EVS Environmental Studies

EUR European Studies

LMS Latin American Studies

WMS Women's Studies

Haworth College of Business:

CURR: PBA Pre-Business Administration

Major: Must select major from BAD Curriculum

CURR: BAD Business Administration

Major: ACT Administrative Systems

AGV Advertising and Promotion

CIS Computer Information Systems

ECO Economics

FIN Finance

FMK Food Marketing

GBS General Business

IDM Industrial Marketing

INS Insurance Science

ISM Integrated Supply Management

MGT Management

MKT Marketing

PAB Public Administration

REA Real Estate

RET Retailing

STB Statistics

College of Education:

(3) Students selecting teacher certification programs will be placed in the "PRE-EDUCATION" (PED) CURRICULUM unless they have been admitted to the College of Education section for complete information on admission requirements.

CURR: CTE Career and Technical Education

Major: DRA Drafting

GRA Graphic Arts

HHE Home Economics Education

MWD Metalworking

PCW Power/Automotives

SEB Secondary Education in Business

SEM Secondary Education in Marketing

WOK Woodworking

CURR: DI Dietetics

Major: DI Dietetics

CURR: EED Elementary Education

Major: EGM Elementary Group Minors

CURR: EEM Elementary Music

Major: MUS Music, Elementary

CURR: FSA Food Service Administration

Major: FSA Food Service Administration

CURR: FST Family Studies

Major: FST Family Studies

CURR: HPR Health, Physical Education and Recreation

Major: CHE Community Health

PEN Exercise Science

REC Recreation

CURR: IET Interior Design

Major: ITD Interior Design

CURR: JHS Middle School and Junior High School

Major: ENG English

FRE French

GER German

MAT Mathematics

SPA Spanish

CURR: STC Student Planned Curriculum

Major: STC Student Planned Curriculum

Preprofessional Programs

PAH Pre-Architecture

PD Pre-Dentistry (Select a major from Liberal Education Curriculum)

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College of Education:

(3) Students selecting teacher certification programs will be placed in the "PRE-EDUCATION" (PED) CURRICULUM unless they have been admitted to the College of Education section for complete information on admission requirements.

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Major: DRA Drafting

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Major: CHE Community Health

PEN Exercise Science

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Major: ITD Interior Design

CURR: JHS Middle School and Junior High School

Major: ENG English

FRE French

GER German

MAT Mathematics

SPA Spanish

CURR: STC Student Planned Curriculum

Major: STC Student Planned Curriculum

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PD Pre-Dentistry (Select a major from Liberal Education Curriculum)

PL Pre-Law (Select a major from Liberal Education Curriculum)

PM Pre-Medicine (Select a major from Liberal Education Curriculum)

Coordinator Majors: These are majors to be selected only along with a standard major.

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FMK Food Marketing

GBS General Business

IDM Industrial Marketing

INS Insurance Science

ISM Integrated Supply Management

MGT Management

MKT Marketing

PAB Public Administration

REA Real Estate

RET Retailing

STB Statistics
Students not selecting a curriculum will be placed in the UNIVERSITY (UNV) CURRICULUM until a selection can be made. Students are encouraged whenever possible to select a specific curriculum.

Student Planned Curriculum

The Student Planned Curriculum (STC) provides students the opportunity to pursue educational goals which cannot readily be accommodated in other university curricula. The usual major/minor requirements are suspended within this program. Instead the individual student, working with an assigned advisor, selects coursework related to his/her academic and educational goals. Thus the student enjoys considerable freedom and flexibility in designing such a program. Aside from the University's General Education and Intellectual Skills requirements, the major consists entirely of elective courses which must be sufficient in number to meet general degree requirements. Students completing this major are eligible to receive either the B.A. or B.S. degree depending upon the particular configuration of coursework selected.

The primary uses of the STC fall into three categories: 1) as a preparation for graduate or professional study; 2) as a way to pursue employment possibilities in areas where no conventional curricula exist; and 3) as a convenient way to obtain a broad interdisciplinary undergraduate education without particular concern for career possibilities. Non-traditional students are often especially attracted to it for this latter reason. Any undergraduate student in good academic standing, with 75 or fewer semester hours earned, is eligible to enter the STC. Students may initiate this process by contacting the University Counseling Center (387-1850) and requesting an appointment with one of the designated STC counselors. Those applying for admission into the curriculum are expected to develop a written statement outlining educational goals as well as the proposed course of study.

General University Studies

General university Studies is a baccalaureate degree program offered through the Division of Continuing Education. This degree is available for those students with technical and/or community college backgrounds who wish to return to college to complete the requirements for a bachelor's degree. Upon completion, students receive either the Bachelor of Arts or the Bachelor of Science degree, depending upon the subject matter content of the program. Specific course requirements vary with the selected area of concentration. All programs must be planned with an academic advisor for the area of concentration. Arrangements for consultation with an advisor will be provided at the student's convenience. Inquiries about the General University Studies programs may be directed to any of the Division's offices.

On the main campus in Kalamazoo:
Office of Adult Learning (Office of Kalamazoo Off-Campus and Weekend Programs)
A320 Ellsworth Hall
Western Michigan University
Kalamazoo, MI 49008-5161
(616) 387-4127

Office of Administrative Services
A103 Ellsworth Hall
Western Michigan University
Kalamazoo, MI 49008-5161
(616) 387-4160
The Division's regional centers are located as follows:
Grand Rapids Regional Center
2333 East Beltline, SE
Grand Rapids, MI 49546-5936
(616) 771-9470

Lansing Regional Center
300 N. Washington Square, Suite 200
Lansing, MI 48933-1204
(517) 372-8114

Muskegon Center for Higher Education
221 S. Quarterline Road
Muskegon, MI 49442-1742

Battle Creek Kendall Center
50 West Jackson
Battle Creek, MI 49017-3505
(616) 965-5380

Southwest Regional Center
2160 Lakeview Avenue
St. Joseph, MI 49085
(616) 983-1968

Traverse City Regional Site
220 Dendrinos Dr., Suite 200-S
Traverse City, MI 49684
(616) 922-1788

GENERAL REQUIREMENTS
The general requirements for a bachelor's degree in the General University Studies curriculum include the following:
1. Complete at least 122 hours of credit, with a minimum of 60 hours of academic work from an accredited four-year, degree-granting institution including Western Michigan University residency requirement. A minimum of 30 hours of credit must be taken from Western Michigan University.
2. Completion of a planned area of concentration, involving a minimum of 45 semester hours of credit. Some work may include credit completed in the first two years of the student's preparation or credit given for non-accredited training or experience.
3. Completion of the General Education requirement for a minimum of 37 semester hours of credit. This work does not have to be exclusive of work included in the area of concentration.
4. Complete the University's Computer Literacy, Intellectual Skills, and Baccalaureate Writing requirements.

AREAS OF CONCENTRATION
American Studies
Applied Liberal Studies
Applied Professional Studies
Criminal Justice
Health Studies
Social Science Studies
Technical-Scientific Studies

Please see section on the Division of Continuing Education elsewhere in this catalog.

Preprofessional Programs
Every professional school has prescribed the nature and amount of academic work to be completed as a prerequisite to the professional training for a particular vocation.
Four years of higher education are generally required by most professional schools for entrance. Western Michigan University is able to offer its students courses of study that meet the requirements for this preprofessional training. It should be noted, however, that the courses outlined are only suggested plans to illustrate in general the kinds of programs that preprofessional students should follow. In every case students should plan their courses of study according to the requirements of the school to which they plan to transfer for professional training. It cannot be emphasized too strongly that the student should exercise care to make certain that the specific requirements of a particular school will have been met.

DENTISTRY
Maria McGurn
Medical Sciences Advisor
2307 Friedmann Hall
387-4366

Most dental schools require three years of academic study and prefer baccalaureate degree candidates. They expect students to have good basic training in chemistry, biology, and physics, good communication skills, and some background in the humanities and social sciences. In general, dental schools require two semesters each of English, Physics, Biology, Inorganic Chemistry, and Organic Chemistry. Since minimum course requirements vary among dental schools, you should find out specific requirements by consulting the publication, Admission Requirements of U. S. and Canadian Dental Schools (call number: RK 91.A58 Latest Edition in Science Ref.), which is on reserve in Waldo Library and is also available in 2307 Friedmann Hall. The Dental Admission Test (DAT) is required by all dental schools, and is offered at Western Michigan University each spring and fall.

Most pre-dental students at Western Michigan University major in either Biology, Biomedical Sciences, or Chemistry. However, dental schools look with equal favor on other majors, as long as students complete the minimal pre-dental requirements. It is important that pre-dental students see the preprofessional advisor on a regular basis for curriculum guidance. The advisor is located in 2307 Friedmann Hall.

Also available through the advising office are Predental Advisory Booklets, Dental Admission Test application forms, centralized application service forms, and Preprofessional Evaluation Committee Services. Predental students are encouraged to join the Medical Sciences Association, which is composed of students interested in health science careers.

Students should complete the minimal requirements by the end of their junior year or before they take the Dental Admission Test. The sequence of courses will depend on the student’s major and minor, as well as appropriate prerequisites, Western Michigan University courses which fulfill minimum dental school requirements, and also provide a good foundation for the Dental Admission Test, are listed below:

1. CHEM 101 or 102, 120, 360, and 361
2. BIOS 150, 151, 250, and 350
3. PHYS 113/114 and 115/116 or 205/206 and 207/208
4. ENGL 105 plus a literature course.

LAW
Advisors: Haworth College of Business
N. Batch, T. Gossman, N. Hawker, F. W. McCarty, L. Stevenson, C. Van Auker-Haght
3200 Haworth College of Business
387-5729

Advisors: College of Arts and Sciences
N. J. Kate Hayes
2307 Friedmann Hall
387-4366

P. G. Renstrom
3420 Friedmann Hall
387-5697

No special college program is required or recommended by most law schools. In general, law schools urge a solid four-year program leading to a bachelor's degree. Although it is relatively unimportant what the prospective law student uses for a major, it is most important that a high level of academic achievement be maintained. It is also important that the prospective law student's education be as broad as possible.

The first-year student is urged to concentrate on satisfying first-year General Education requirements, and on improving his/her writing and speaking skills by taking courses in English and communications.

A first-year student should see a prelaw advisor during the first semester for assistance in selecting a curriculum. A transfer student should see a prelaw advisor as soon as possible.

MEDICINE AND OSTEOPATHIC MEDICINE
Gyuila Fiscor
Medical Sciences Faculty Mentor
gyuila.fiscor@wmich.edu
5060 McCracken Hall
387-4366

Maria McGurn
Medical Sciences Advisor
2307 Friedmann Hall
387-4366

Medical schools increasingly want students with diverse backgrounds and a wide variety of skills and interests. They expect good basic training in chemistry, biology, physics, and mathematics, but also want students to have well-developed communication skills and long-term interests in the humanities and social sciences. In general, medical schools require two semesters each of English, Physics, Biology, Inorganic Chemistry, and Organic Chemistry. Since minimum course requirements vary among medical schools, you should find out specific requirements by consulting the publication, Medical School Admission Requirements, which is on reserve in Waldo Library (call number: No. R745 A8 Latest Edition in Science Ref.) and is also available in 2307 Friedmann Hall. The Medical College Admission Test (MCAT) is required by nearly all medical schools, and is offered at Western Michigan University each spring and fall.

Most premedical or preosteopathic students at Western Michigan University major in either Biology, Biomedical Sciences, or Chemistry. However, medical schools look with equal favor on other majors, as long as students complete the minimal premedica requirements. It is important that premedical and preosteopathic students see the preprofessional advisor on a regular basis for curriculum guidance. The advisor is located in the College of Arts and Sciences Advising Office, 2307 Friedmann Hall.

Also available through the advising office are Premedical Advisory Booklets, Medical College Admission Test application forms, centralized application service forms, and Preprofessional Evaluation Committee services. Premedical and preosteopathic students are encouraged to join the Medical Sciences Association, which is composed of students interested in health science careers.

Students should complete the minimal requirements by the end of their junior year or before they take the Medical College Admission Test. In addition, courses in genetics, physiology, and biochemistry are recommended. The sequence of courses will depend on the student's major and minor, as well as appropriate prerequisites. Western
Michigan University courses which fulfill minimum medical school requirements, and also provide a good foundation for the Medical College Admission Test, are listed below:

1. CHEM 101 or 102, 120, 360, and 361
2. BIOS 150, 151, 250, and 350
3. PHYS 113/114 and 115/116 or 205/206, 207/208.
4. ENGL 105 plus a literature course.

PRE-ARCHITECTURE
N. J. Kate Hayes, Advisor 2307 Friedmann Hall 387-4366

The pre-architecture curriculum at Western Michigan University is a program to help students prepare themselves to apply for admission to a school of architecture after approximately 1-1/2 - 2 years of study. As these types of schools tend to be specific in nature and vary from school to school, course recommendation is based in coordination with a particular school of architecture's program requirements. Course work selected at Western Michigan University is essentially liberal arts based rather than technically oriented.
THE CARL AND WINIFRED LEE
HONORS COLLEGE

Joseph G. Reisch
Dean
John E. Martell, Jr.
Assistant to the Dean
Sharon Kaempfer
Academic Advisor
Terri Benton-Ollie
Coordinator, Student Volunteer Services

The mission of the Carl and Winifred Lee Honors College is to design and foster curricular and co-curricular programs for the academically talented student. These programs allow students to pursue their major areas of study and to join with other bright students in Honors courses, internships, research projects, community work, and social activities. Faculty who teach through the college are recognized by the University as individual academic advisors who enjoy working with students.

The Lee Honors College strives to create an environment for critical thinking and active learning. Bringing together students in small classes allows for a variety of educational approaches which depart from the traditional lecture/hot taking format. Teachers are encouraged to broaden the arenas for learning without compromising educational rigor. A variety of programs and activities is available to members of the Lee Honors College.

Independent study, special Honors seminars, inter-university enrollment at local colleges, and undergraduate internships in the community may be arranged by Honors students. The Undergraduate Research and Creative Activities Award, administered by the college, provides financial support for a variety of supervised undergraduate projects.

Student involvement is an important aspect of Honors education. Students become involved with the college not only through courses but through the Honors Student Association and Honors housing. The college sponsors trips, speakers, a newsletter, and other cultural and social activities. Through these activities students enhance their affiliation with the University and prepare themselves for leadership positions in their professional lives.

A special focus for the Lee Honors College is community involvement and volunteerism. The Office of Student Volunteer Services housed in the college provides all University students with information and referral services to over 150 local agencies and to state, national, and international volunteer opportunities. Student Volunteer Services also sponsors campus-wide service events such as the College Volunteer Opportunities Fair, Trick-or-Treat For Food Shelf, and Into the Streets.

The Lee Honors College is a member of the National Collegiate Honors Council and the Mid-East Honors Association. It is a founding member of the Michigan Honors Association. Honors students and administrators of the college have held office in these organizations and regularly participate on regional and national Honors committees, making presentations to other Honors colleagues. The Lee Honors College serves as the campus office for the WMU chapter of the national freshman honorary Alpha Lambda Delta and the national upper class honor society Phi Kappa Phi. Each spring eligible students are invited to apply for membership. These organizations sponsor academic and social events throughout the school year.

THE ACADEMIC PROGRAM OF STUDY

The Carl and Winifred Lee Honors College admits students at all stages of their university education, including incoming freshmen, transfer students, and on-campus students. Students are admitted to the college based on high school and university grade point averages, American College Test (ACT) scores, co-curricular activities, an essay and academic recommendations. Students may request an application by calling or writing the Dean of the Lee Honors College.

The purpose of the Lee Honors College academic program of study is to deepen and enrich a student's undergraduate experience in a way that coordinates with other University requirements. At the freshman-sophomore level, it consists of courses that earn General Education or major credit and which are clustered around a theme in order to allow students to explore relationships among various disciplines. In consultation with an Honors advisor, students enroll in two course clusters consisting of three courses each. At the junior and senior levels, students take two interdisciplinary seminars which examine critical issues within the fields housed in a particular college. A senior capstone project, the Honors College Thesis, requires students to prepare and present a paper or performance typical of professional work in their major field.

Upon successfully completing this academic program of study, students graduate from the Lee Honors College and the major college, with special Honors in a specific discipline. They are recognized as graduates of the Lee Honors College at graduation ceremonies. This honor is also noted on the transcript.

For further information on specific aspects of the Lee Honors College, call or write to the Dean of the Carl and Winifred Lee Honors College, Western Michigan University, Kalamazoo, MI 49008; telephone 616-387-3230; email: Lee+Hnrs@wmich.edu

Baccalaureate Writing Requirement

Students who have been accepted into the Lee Honors College may satisfy the Baccalaureate Writing Requirement by successfully completing HNRS 499 Honors College Thesis.

Honors Courses (HNRS)

Each semester a variety of honors courses, course clusters, and seminars is offered. Many of these are applicable to General Education requirements and other curriculum requirements. These courses and seminars are described in the Lee Honors College course booklet, which is printed each semester. All Honors courses are so indicated on the transcript.

The following variable topic/variable credit courses enable the Lee Honors College to offer a wide range of additional seminar and experiential learning opportunities. Information and descriptions for specific semester offerings are available at the college office.

HNRS 290 Honors Seminar Variable Credit
An undergraduate seminar for first- and second-year Honors students. The content of the seminar varies and will be announced in advance.

HNRS 299 Independent Study Variable Credit
An opportunity to explore individually, under the guidance of a faculty member, a topic or problem in almost any area.

HNRS 399 Field Experience (Community Participation) Variable Credit
An organized association with a person or institution involving work and learning activities related to a significant academic interest of the student.

HNRS 490 Honors Seminar Variable Credit
An undergraduate seminar for upper level Honors students. The content of these seminars varies and will be announced in advance.

HNRS 492 Visiting Scholars Variable Credit
A seminar involving visiting scholars from other institutions and countries. The content of these seminars varies and will be announced in advance.

HNRS 495 Individual Studies Variable Credit
Students in the Lee Honors College may enroll in this course for one or several semesters upon approval of the Dean of the Lee Honors College. The course is an administratively supervised facility for individual study outside the usual course structure.

HNRS 499 Honors College Thesis 3–6 hrs.

The design, writing, and defense of a directed research project appropriate to the major disciplinary area of the student. The thesis must be directed by a faculty sponsor and approved by one additional faculty member knowledgeable in the discipline or an allied discipline. A copy of the final project must be filed with the Lee Honors College. Prerequisite: approval of the thesis project by the Dean.
OFFICE OF INTERNATIONAL AFFAIRS

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Western Michigan University conducts active programs of international education, research and service on campus and in a variety of overseas locations. The Office of International Affairs, established in 1981, provides leadership and administration for the international involvements of the University.

The Office of International Affairs was established because Western Michigan University recognized that in international programming the most successful efforts occur where overall responsibility is concentrated in a single office. The mandate of the office is to plan, manage, and encourage the development of WMU's international programs and activities and to work on a cooperative basis with all the colleges and departments of the University.

Under the direction of the Executive Director of International Affairs, the responsibilities of the office include the initiation and maintenance of linkages with foreign universities and agencies as well as American universities and agencies operating abroad. The office administers the University's foreign study programs, faculty and student exchanges, study abroad scholarships, field courses and seminars abroad, and study tours. It manages the recruitment of foreign students, and aids faculty and administrators in developing technical assistance projects and in preparing proposals for funding international projects from off-campus sources. The office also sponsors conferences and symposia on international issues, provides small grants for professional international travel of faculty, and assists with applications for international fellowships for faculty and students. All inquiries, contracts, negotiations, requests and the like are to be channeled through the Executive Director and the Office of International Affairs. All commitments negotiated between Western Michigan University and any party abroad must be negotiated with the assistance of the Executive Director and must bear his signature and/or that of the President. The President may, on occasion, delegate the authority to sign contracts for the University to other University officials.

All courses offered abroad, faculty and student exchanges, study tours, affiliations, and consultancies conducted in the name of Western Michigan University must be authorized by the Executive Director. This provides protection for scholars and students and allows for an accurate record system regarding the University's endeavors. It also assures that the legal and financial responsibilities of the University are properly understood.

The Office of International Affairs supervises the units responsible for serving the needs of foreign students: the International Student Services Office, which handles the admission and special circumstances of foreign students, and the Career English Language Center for International Students, which provides intensive English instruction for foreign students seeking admission to U.S. institutions of higher learning.

Institution-to-Institution Linkages

The Office of International Affairs negotiates formal linkages with educational institutions abroad. These institutional affiliations involve direct operational ties, arrived at through mutual agreement and providing mutual benefit. Western Michigan University's interest in institutional affiliations around the world is a logical outgrowth of the University's integrated, international perspective on education.

These linkage contracts have facilitated faculty and student exchanges, teaching and research opportunities for professors and students, visiting scholar programs, scholarships for students, and the development of library resources. The University assigns a high priority to establishing academic cooperation agreements which involve mutual collaboration and benefits and institutionalize a "Michigan connection" with the world.

Western Michigan University's "twinning program" with Sunway College in Kuala Lumpur, Malaysia is a good example of a mutually beneficial linkage contract. Through this cooperative degree program, Malaysian students who seek undergraduate degrees in business, mass communications, computer science, pre-engineering, sciences, and general education take their first two years of courses at Sunway College and the final two years at WMU. A full-time resident director from Western Michigan University supervises the curriculum to ensure that WMU-modelled courses at Sunway are exact equivalents of those at WMU. Owing to substantial savings in tuition fees and living expenses, the pursuit of a foreign degree by Malaysian students is thus made more affordable. Since its inception in 1987, more than 1,500 students have passed through this innovative program.

CURRENT LINKAGE PARTNERS

Africa
- Addis Ababa University, Addis Ababa, Ethiopia
- Obafemi Awolowo University, Ille-Ife, Nigeria

Americas
- Autonomous University of Queretaro, Queretaro, Mexico
- Autonomous University of Guadalajara, Guadalajara, Mexico

Asia
- Guangxi University, Nanning, People's Republic of China
- Hong Kong Baptist University, Hong Kong, People's Republic of China
- Nankai University, Tianjin, People's Republic of China
- Xbei University, Xi'an, People's Republic of China
- National Kaohsiung Normal University, Kaohsiung, Taiwan, Republic of China
- Christ College, Bangalore, India
- Hindustan College, Madras India
- School for International Training, Jakarta, Indonesia
- Aoyama Gakuin Women's Junior College, Tokyo, Japan
- Dairo Bunka University, Tokyo, Japan
- Japan Aviation Academy, Yamanashi and Chitose, Japan
- Josai University, Sakado, Saitama, Japan
- Josai International University, Togane, Chiba, Japan
- Keio University, Tokyo, Japan
- Nagoya Gakuin University, Satoo, Aichi, Japan
- Nihon University, Tokyo, Japan
- Otaru University of Commerce, Otaru, Hokkaido, Japan
- Rikkyo University, Tokyo, Japan
- St. Margaret's Junior College, Tokyo, Japan
- Takaoka College of Law, Toyama, Japan
- Sockymung University, Seoul, Republic of Korea
- Sunway College, Kuala Lumpur, Malaysia
- International Business Management Education Centre, Singapore

Europe
- University of Franche-Comté, Besançon, France
- Sibelius Academy, Helsinki, Finland
- University of Tubingen, Tubingen, Germany
- Fachhochschule Kiel, Kiel, Germany
- Free University of Berlin, Berlin, Germany
- University of Paderborn, Paderborn, Germany
- University of Passau, Passau, Germany
- Haarlem Business School, Haarlem, The Netherlands
- Norwegian School of Management, Oslo, Norway
- Saratov State University, Saratov, Russia
- University of Leicester, Leicester, United Kingdom
- University of Latvia, Riga, Latvia
- Institute of Spectroscopy, Russian, Academy of Sciences, Moscow, Russia
- University, Varlo, Sweden
- Inter-University Center, Dubrovnik, Croatia
Middle East
- The American University in Cairo, Cairo, Egypt
- Tel Aviv University, Ramat Aviv, Israel

Area Studies Programs
On campus, the Center for International and Area Studies serves as the focus of four specialized programs: African, Asian, European, and Latin American Studies. The course offerings for these interdisciplinary programs are selected from more than a dozen departments. Each of the four area studies programs offers courses on the region’s arts, culture, languages, and spoken languages in the region, philosophies, religions, history, geography, economic conditions, political systems, social changes, and international relations. Full descriptions of the area studies options are given in the interdisciplinary programs section of this catalog.

Study Abroad
Margaret Riley
Director of Study Abroad
Ellsworth Hall, Second Floor, B-Wing (616) 387-5890

Throughout the world, growing numbers of students are crossing borders to participate in unique educational experiences. Each year more than 70,000 Americans study abroad, part of a larger global flow of one million students who are learning about the world outside their home country. Western Michigan University considers study abroad an integral part of formal education complementing and enhancing study in Kalamazoo. To help prepare WMU graduates for this era of global affairs and multinational business, the Office of International Affairs offers a variety of opportunities for study, work, and volunteer experiences in foreign countries. Qualified students may study abroad by attending a program sponsored directly by Western Michigan University or another American institution, or by enrolling in a foreign university. In all cases students must enroll with the advice and guidance of the Director of Study Abroad in the Office of International Affairs.

Locations Abroad
Western Michigan University undergraduates regularly study in approximately 30 countries and enroll in programs and universities throughout the world. The university has established a number of its own foreign study programs and affiliations with selected institutions abroad. In addition to a challenging course of study at a foreign institution of higher learning, these programs offer the experience of immersion in the life and culture of the host country.

Africa
The University of Ghana, located in Legon, a suburb of the capital city of Accra, offers the opportunity to study the Twi language and choose electives from the wide range of courses ranging from social sciences to performing arts. Fall and spring semesters. Program sponsored by C.I.E.E.

Asia
JAPAN
JCMU: Japan Center for Michigan Universities, Hikone, Shiga Prefecture. The JCMU is a joint project of Shiga Prefecture, the State of Michigan, and Michigan's 15 public universities, offering a two semester program in Japanese language and culture, and intensive summer Japanese language programs. Course offerings include Japanese (4 levels), Japanese society and culture, and courses taught by visiting scholars e.g. Japanese business, technology, management, Japanese politics and government, and communication and contemporary media. Keio University Student Exchange Program offers one scholarship for two semesters of study in Tokyo. This competitive scholarship covers tuition, room, and board.

The Japan Adventure/Japan Horizon Programs in Otsu, Shiga Prefecture, Sakaide, Shikoku combine study and work in this unique, low-cost program sponsored by Lansing Community College. Participants take Japanese language and culture classes with Japanese instructors while working on a cruise ship or in a tourist complex. This is an ideal program for beginning students of Japanese.

Diato Bunka University Student Exchange Program offers the opportunity to study Japanese language, literature, law, economics, and international relations in Higashimatsubara, Saitama near Tokyo. This is a reciprocal exchange program in which participants pay tuition, fees, and room, and board to their home university and switch places.

Josai International University Student Exchange Programs offers the opportunity to study Japanese language and culture, humanities, management, and information sciences in Tochigi, Chiba near Tokyo. This is a reciprocal exchange program in which participants pay tuition, fees, and room, and board to their home university and switch places.

Nagoya Gakuin University Student Exchange Program offers the opportunity to study Japanese language and culture, economics, and commerce in Seto, Aichi, in the Kansai region. This is a reciprocal exchange program in which participants pay tuition, fees, and room, and board to their home university and switch places.

Nihon University Student Exchange Program offers the opportunity to study Japanese language and culture in the Tokyo area at Japan's largest private university which is renowned for its engineering and science programs. This is a reciprocal exchange program in which participants pay tuition, fees, and room expenses to their home university and switch places.

Otaru University of Commerce Student Exchange Program offers the opportunity to study Japanese language and business in Otaru, on the northern island of Hokkaido. Applicants must be a student in the Hamworth College of Business or Department of Economics. This is a reciprocal exchange program in which participants pay tuition, fees, and room, and board to their home university and switch places.

Rikkyo University Student Exchange Program offers the opportunity to study Japanese language in Tokyo at one of Japan's oldest private universities. This is a reciprocal exchange program in which participants pay tuition and fees to their home university and switch places.

AIEJ (Association of International Education, Japan) Student Exchange Scholarships may be awarded to participants in exchange programs with WMU "sister schools". Living expenses in Japan and airfare between U.S. and Japan are covered.

MALAYSIA
WMU's South-East Asia Semester at Sunway College, Kuala Lumpur offers the only U.S. study abroad program in Malaysia and includes WMU Resident Director on-site. All courses are duplicates (same numbers, texts) of WMU home campus courses, including business, communications, computer science, pre-engineering, sciences, and general education. Fall, winter, and spring-summer semesters. Instruction in English.

SINGAPORE
Nanyang Technological University in the city-state of Singapore offers the opportunity to experience first-hand the dynamism of Asia's booming economies. NTU's ultra-modern campus features schools of accountancy and business, engineering and applied sciences, communication studies, plus a National Institute of Education offering arts, science, education and physical education. All courses are taught in English. Winter semester.

Australia
Monash University, Melbourne, Victoria offers a full curriculum, with special strengths in Australian literature, business, Southeast Asian studies, Japanese Studies, Asian languages, Australian studies, anthropology, administrative sciences, biology and mathematics. Melbourne has been called "The world's most liveable city." One and two semester programs.

University of Western Australia, Perth, is the oldest and most prestigious university in Western Australia, and ranks among the best in Australia. Courses are offered in the arts, economic, business, communications, social sciences, engineering, and education on Australia's most beautiful campus situated on the banks of the Swan River, a center for sailing and water sports. One and two semester programs.

University of Wollongong, in the city of Wollongong on the east coast south of Sydney, is one of Australia's national research institutions. It offers a full curriculum including Australian studies, advanced manufacturing and materials, arts, business, communications, economics, education, English, the environment, geography, geology, health, law, mathematics, politics, natural sciences, and social sciences. One and two semester programs.

Europe
THE GRAND TOUR OF EUROPE
European Arts and Culture: Renaissance to Modern: Focus on the summer term field course following in the tracks of the Boswell and Goethe on the classic itinerary of the Grand Tour: The Netherlands, France, Germany, Austria, Switzerland, and the ultimate destination: Italy. Offered bi-annually in even numbered years.

AUSTRIA
Vienna: Semester or Year Abroad offers courses in business and liberal arts taught in English, plus German language (3 levels). Fall, winter, or academic year options. Sponsoreed by the Midwest Consortium for Study Abroad (MCSSA).

BELGIUM
“European Culture and Society” Program at KU Leuven, near Brussels. Founded in 1425, the Katholieke Universiteit Leuven (KUL) is situated in a “university town” just twenty minutes from Brussels, capital of the European Community (EC). Courses focus on the development of the European Community, with
offering in business, history, international relations and the European Community, literature, communications, sociology, philosophy, theology (all in English), plus Dutch (Flemish), French and German
language courses. Fall, winter, or academic year options; must be junior or senior.

CROATIA
A Future of Religion Seminar is offered each spring at the Inter-University Center of Post-Graduate Studies in Dubrovnik.

CZECH REPUBLIC
Charles University, Prague offers courses in economics, politics, history, culture (all taught in English), Czech language. Fall, winter, or academic year options. Sponsored by C.I.E.E.

ENGLAND
The American College in London offers courses in business administration, commercial art, fashion design, fashion merchandising, and interior design. Fall, winter, spring, and summer quarters.

The University of Leicester, north of London, offers a full curriculum, including American studies, biological sciences, economics, geography, history of art, math, sociology, chemistry, English, geology, history of science, physics, archaeology, computer science, French, German, Italian, political science, astronomy, economic and social history, history, law, and psychology. Personal tutors are allocated to each student each semester. Fall, winter, or academic year options.

The WMU Cambridge Summer Seminar, offered biennially since 1979, is a three-week study abroad opportunity. Participants study British literature, history, and culture while in residence at a college of the University of Cambridge.

FINLAND
The Sibelius Academy, Helsinki, offers studies in performing music, jazz, folk music, music education, opera, orchestra and choir conducting, and composition and music theory.

FRANCE
Universite de Franche-Comte, in the city of Besancon in eastern France, near the German and Swiss borders, is the site of WMU's study abroad program in France. Participants study in the university's progressive language institute where they take courses in French language and culture. Advanced students are permitted to take classes in the university in other academic areas. Winter semester.

The American University Center in Aix-en-Provence offers intermediate and advanced French language instruction and liberal arts courses. Fall, winter, and academic year options.

University of Haute Bretagne, Rennes (Brittany) offers courses in advanced French language, culture, civilization. Fall, winter, or academic year options. Sponsored by C.I.E.E.

Summer Study in Lyon is a WMU program that offers a month of study in French language and culture at the Institut de Langue et de Culture Francaises and home-stays with families in Lyon, in south central France. Offered bi-annually.

Universite de Paris-Sorbonne is the host for the Critical Studies Program focused on contemporary French trends in literature, philosophy, and film studies. Fall, spring, or academic year. C.I.E.E. Program.

GERMANY
Free University of Berlin Exchange Program offers the opportunity to study for an academic year in the capital city of Germany. Two scholarships are available which include tuition, housing, and a stipend.

University of Paderborn Exchange Program offers the opportunity to study for an academic year in this modern university in north-central Germany weights in engineering and science. Two scholarships are available which provide tuition waivers.

University of Passau Exchange Program offers the opportunity to study for an academic year in this modern university located in a historic city in Bavaria, near the Austrian border. One scholarship covers tuition and housing.

University of Tübingen Exchange Program offers the opportunity to study for an academic year in this famous medieval university and city in Swabia. Two scholarships are available which include tuition and housing.

ITALY
The University of Macerata, northeast of Rome, offers courses in art history, economics (European integration), history, political science, literature, Italian language (3 levels), taught in English by faculty of the university. Fall, winter, and spring terms. Sponsored by ACSA: American Center for Study Abroad.

Studio Art Centers International (SACI), Florence offers studio arts, Italian language, and liberal arts courses. Studio art classes include drawing, painting, etching, lithography, sculpture, photography, film production, ceramics, fabric design, weaving, jewelry, serigraphy, painting conservation, graphic and interior design. Fall, winter, late spring, and summer terms.

NETHERLANDS
The Haarlem Business School Exchange Program offers the opportunity to study international business management in the historic city of Haarlem, just east of Amsterdam. Courses are taught in English with the option to study Dutch or other languages. This is a reciprocal exchange program in which participants pay tuition and fees to their home institution and switch places.

NORWAY
The Norwegian School of Management Exchange Program, offers the opportunity to study business administration, management, and marketing in Norway's capital city of Oslo. Courses are taught in English. This is a reciprocal exchange program in which participants pay tuition and fees to their home institution and switch places.

SWEDEN
Vaxjo University Student Exchange Program offers the opportunity to study in Sweden's "international" university south of Stockholm. Participants enroll in an integrated English-language program which includes programs in business, comparative politics, international economics, and Scandinavian culture; intensive Swedish language course is also available. This is a reciprocal exchange program in which participants pay tuition, fees, and room, and board to their home university and switch places.

Latin America and the Caribbean

MEXICO
Universidad Autonoma de Queretaro, in the colonial city of Queretaro, northwest of Mexico City, is the site of WMU's study abroad program in Mexico. Participants take a course in Spanish language and culture, and then other courses of their choice with Mexican students in the Colleges of Sociologia (humanities and social sciences) or Business Intermediate to advanced Spanish skills required. Winter semester or academic year.

The Universidad de las Americas (UDLA), Puebla, offers a full curriculum taught in Spanish, including business, management, and liberal arts courses. Fall, winter, or academic year options.

PUERTO RICO
WMU's Seminar in Tropical Biology is a field program held annually in spring term in Puerto Rico. The course explores the bio-geography of a Caribbean island, including rainforests, desert zones, and coral reefs.

Middle East and the Mediterranean

EGYPT
The American University in Cairo offers Arabic language (3 levels); anthropology, business management, chemistry, communications, computer science, economics, Egyptology, engineering, English, math, Middle Eastern studies, physics, political science, sociology, all taught in English. Semester, academic year, and summer options.

ISRAEL
Tel Aviv University offers courses in Arabic and Hebrew languages (3 levels); archaeology, arts, business/management, Israeli studies, Jewish/Judaic studies, life sciences, Middle East studies, taught in English. Semester or academic year options.

MEDITERRANEAN INSTITUTE
WMU's Summer Institute on the Mediterranean World is a ship-based program which cruises to archaeological sites in Italy, Southern France, Greece, Turkey, Egypt, and Israel.

Other Locations

I.S.E.P. Programs
Western Michigan University is a member of the International Student Exchange Program (ISEP), which was established in 1979 under the Fulbright-Hays Act. ISEP is an organization of more than 200 universities around the world that exchange students on a reciprocal basis for a semester or academic year. Participants pay tuition, fees, and room, and board to their home university and switch places. WMU students can choose from more than 100 universities worldwide, including non-traditional sites in Africa, Asia, Eastern Europe, Latin America, and the South Pacific.
Full information and application materials are available in the Office of International Affairs.

C.I.E.E. PROGRAMS
Western Michigan University is a member of the Council on International Educational Exchange (C.I.E.E.), which through its Cooperative Centers for Study Abroad offers a variety of semester and summer abroad opportunities. C.I.E.E. has developed programs for students of many different academic areas, programs in developing countries, and programs that include an experiential learning component. In addition to the C.I.E.E. programs in the Czech Republic, France and Spain noted above, WMU students may participate in programs in Argentina, Brazil, China, Costa Rica, Ghana, Hungary, Indonesia, Poland, Russia, Thailand, and Vietnam. Full information and application materials are available for all of these programs at the Office of International Affairs.

INTERNATIONAL MUSIC SEMINARS
String, Jazz, African, Technique, art and photography are the focus of summer workshops for musicians, painters, and photographers. Concurrent with the workshops are a concert series and international art and photography exhibits. Locations vary from year to year; past sites include Innsbruck, Austria; Exeter, England; and Bologna, Italy.

INTERNATIONAL SOCIAL WORK SEMINARS
Field courses in Comparative Social Service Systems are offered in cooperation with universities and social services agencies abroad. Locations vary from year to year; past sites include England, Nicaragua, and Russia.

SPRING AND SUMMER FIELD COURSES
In addition to these programs, Western Michigan University sponsors a variety of overseas courses and study-tours in spring and summer designed for students, teachers, alumni/ae, and friends of the University. Sites of past programs include China, Kenya, and Vietnam.

Since Western Michigan University's study abroad offerings are subject to change, interested students are urged to contact the Office of International Affairs for up-to-date information.

About Studying Abroad

WHO STUDIES ABROAD
WMU undergraduate and graduate students from all colleges and majors are eligible to study abroad. Approximately 70,000 American college students study abroad each year. Given the growing interdependence of the world community, overseas experience is becoming an important component of a complete college education.

WHEN STUDENTS STUDY ABROAD
WMU students usually study abroad their sophomore, junior, or senior year. Many students find that their sophomore or junior year is the most satisfactory time to study abroad. To ensure adequate preparation, it is useful to begin planning for study abroad six to twelve months before the intended semester(s) abroad.

TRANSFER OF CREDITS AND GRADES
Students participating in study abroad through the Office of International Affairs will receive credit for their work abroad. The Director of Study Abroad has catalogs, program materials, and evaluations to help students plan their studies abroad. As part of the application process, students must obtain approval of their academic plans from the Director of Study Abroad, and must arrange credit transfer with the Director before leaving for study abroad. The Director of Study Abroad will assist students through the process of applying, pre-arranging, and transferring credit.

FOREIGN LANGUAGE REQUIREMENTS
Many foreign study programs do not require any previous experience with a foreign language, while other programs require up to two years or the equivalent of college-level language study. Students should begin planning for foreign language study in their freshman year if they would like to study in a country where English is not the primary language.

For students who do not have proficiency in a foreign language, there are many options outside of English-speaking countries. WMU students can study in programs taught in English e.g. in Belgium, Egypt, Israel, Malaysia, the Netherlands, and Singapore, including many of the options listed above. Some students choose to not study the host country's language until they are abroad, and can make rapid progress in the foreign environment.

LENGTH OF STAY
WMU students may study abroad for a spring or summer term, one semester, or the academic year. Students who are studying foreign languages find it beneficial to study abroad for at least two semesters. Many students, however, will find a strong semester program to be attractive. Any experience abroad is beneficial, however, most participants report that the longer the stay abroad the more the benefits.

HOUSING ARRANGEMENTS
Options for study abroad students include living with a family, in a university residence hall, or in an apartment.

ADMISSION AND APPLICATION PROCEDURE
All students who wish to receive WMU credit for study abroad must meet with the Director of Study Abroad and fill out the WMU Study Abroad application materials available at the Office of International Affairs.

FINANCIAL AID
Western Michigan University students who are eligible for grants, loans, and scholarships may be able to use most of their sources of aid for all WMU-approved study abroad programs. Scholarships offered by the Office of International Affairs specifically for foreign study are listed in the scholarships section of this catalog. Students need financial assistance to participate in overseas programs should consult with the Office of International Affairs and the Office of Student Financial Aid and Scholarships regarding eligibility, process, and deadlines.

INTERNATIONAL WORK AND VOLUNTEER INFORMATION
Students may purchase the International Student Identity Card, Youth Hostel Pass, and C.I.E.E. travel insurance, and faculty may obtain the International Teacher/Professor Card through the Office of International Affairs. Information about work abroad is available, including C.I.E.E.'s Work Abroad Program which enables U.S. students to work abroad legally on a part-time basis in Britain, Canada, Costa Rica, France, Germany, Ireland, Jamaica, and New Zealand. Information is also available about International Workcamps and other opportunities for voluntary service abroad.

Summer Institutes

Summer Institutes in "English Language and American Culture," "Business and American Society," "Law and American Society," and/or "Technology and American Society" are offered by the Office of International Affairs in cooperation with the Cooperative Language Center for International Students (CELCIS) each year in June, July and August. A combination language and lecture program is tailored to the interests of each group of students. Subjects covered may include American English, Business English, American national character, history, politics, social issues, international relations, business practices, arts, and music.

The Business, Law, and Technology Programs include visits to factories, offices, and farms, including such places General Motors, Nippondenso, Pioneer Seed Company, and the Chicago Board of Trade. The extracurricular program includes home visits with American families, visits with Canadian university students, a Lake Michigan beach, local touring and visits to such places as the President Gerald R. Ford Museum in Grand Rapids and the Henry Ford Museum (Greenfield Village) near Detroit. Summer Institutes are often combined with tours around the United States.

Fulbright Campus Office

The Office of International Affairs is the official campus liaison office with the Council for the International Exchange of Scholars (CIES) and the Institute of International Education (IE). Information about Fulbright Scholar-in-Residence Grants, Visiting Fulbright Scholars and Occasional Lecturers, Teacher Exchange Programs, and Fulbright Grants for Graduate Study Abroad are made available to faculty members and students.

WMU numbers among its faculty more than 25 alumni/austrae of the Fulbright Program who have won awards to Argentina, Australia, Belgium (2), Botswana, the Czech Republic, Finland, France, Germany (4), India (7), Japan, Peru, the Philippines (3), Romania, Russia, Spain, Sweden, Taiwan, and Zimbabwe. WMU students have long competed successfully for Fulbright Grants for Graduate Study; recent awards included grants for study in economics in Colombia, a teaching assistantship in Germany, archaeology in Italy, and theatre in England.

Peace Corps

Western Michigan University is the fourth largest source of Peace Corps volunteers among all colleges and universities in Michigan, according to a report published by the Peace Corps. Since the Peace Corps’ founding in 1961, more than 200 WMU graduates have served as volunteers. The Office of International Affairs assists in informational and recruiting activities.

Liaison with International Education Organizations

The Office of International Affairs maintains contact with international administrators and study abroad advisors at other universities, embassies, consultants and organizations interested in international education. The office also maintains affiliation with appropriate national and state organizations such as the Association of International Education Administrators, Institute of International Education, the Council on International Educational Exchange, the Association of Collegiate Registrars and Admissions Officers, and NAISA: the Association of International Educators.
Directly and through constituent units of the University, the Office of International Affairs builds linkages with organizations engaged in providing international services to U.S.-based and foreign clients. It also distributes information about the international programs, activities, and capabilities of Western Michigan University to other institutions, agencies, and government units located in the United States and abroad.

Center for International and Area Studies
Howard J. Dooley, Executive Director
Second Floor, B-Wing, Ellsworth Hall
(616)387-3951

African Studies Program
Sisay Asefa, Advisor
Asian Studies Program
Victor Xiong, Advisor
European Studies Program
William Ritchie, Advisor
Latin American Studies Program
Claudio Milman, Advisor

The International and Area Studies Program, established in the early 1960’s with the assistance of a major Ford Foundation grant, serves as the focus of four areas of specialization: African Studies, Asian Studies, European Studies and Latin American Studies. Every semester, more than 140 courses are offered in International and Area Studies by faculty in 13 departments. The Area Studies programs operate under the aegis of the Office of International Affairs. Detailed descriptions of the major and minor requirements for these programs may be found in the College of Arts and Sciences interdisciplinary programs section of this catalog.

Canadian Studies Committee
David Burnie, Chair
Finance and Commercial Law
3246 Schneider Hall
(616) 387-5764

The Canadian Studies Committee promotes teaching and research in Canadian history, culture, and contemporary affairs. It sponsors course offerings in Canadian subjects, and organizes symposia on Canadian subjects and U.S.-Canadian relations.
The Department of Military Science courses are open to all university students. Courses are intended to develop responsibility, individual confidence, leadership and tactical skills, and to provide a knowledge of the role of the military in society. The department offers a four year and a two year Military Science program, which can lead to an officer's commission in the Army Reserve, Army National Guard, or Regular Army upon successful completion of the program. ROTC scholarships are available to students, and a student need not be enrolled in the military science program to compete for the ROTC scholarship. The chair of the department and all instructors are officers or noncommissioned officers of the United States Army assigned to the department by permission of the University. They administer the military science program and conduct all classes offered by the department. The government provides uniforms for all Advanced Course students as well as additional financial assistance for students in the last two years of the program.

Career Opportunities
Army ROTC increases opportunities for students by giving them options and by developing leadership potential for a civilian and/or military career. To enter the Advanced Course, a student agrees to finish the ROTC instruction, then accept a commission and an assignment in either active or reserve forces duty. The active duty career option is usually three years for non-scholarship students, and assignment to a leadership position similar to the junior management level in the civilian sector. Starting salary for a second lieutenant on active duty is approximately $26,000, plus benefits. The reserve forces career option combines the benefits of a civilian job with the leadership and management experience gained in the Army Reserve or National Guard. The reserve forces obligation is three to six months on active duty (attending a military branch school for the Officer Basic Course) and the remainder of an eight-year obligation in the reserve forces.

ROTC Admission Requirements
ROTC courses are open to all university students with no obligation. To be eligible to enter into the Advanced Course (Commissioning Program) students must: be a full time student; be a U.S. Citizen; not be more than 27 years of age; have a minimum cumulative GPA of 2.0; not be a single parent; satisfy the Basic Course requirements either through attendance at ROTC Basic Camp, prior military service, or successfully passing all Basic Course academic requirements, be able to pass the Army Physical Fitness Test; be of good character as evidenced by no record of disciplinary problems or civil convictions; not be an alcohol abuser or drug user; and pass a Military Entrance Physical Exam.

Scholarships
Army ROTC has one of the largest scholarship programs in the nation. Awards are competitively based on ability, not on income. ROTC scholarships are offered for two, three, and four years. Four-year scholarships are awarded to incoming college freshman. Three year and two year scholarships are awarded to students already enrolled in the university. It is not a requirement to be enrolled in ROTC to compete for a scholarship. ROTC scholarships pay for tuition, lab, and most student fees; a flat rate of $450 per year for textbooks; and a tax-free subsistence allowance (up to $1,500) each year the scholarship is in effect. Additionally, WMU provides ROTC scholarship recipients with a $1000 annual incentive award.

Facilities
The department is located in Oakland Gym, with an indoor marksmanship range and classroom facilities. Special training is also conducted at Fort Custer Army Reserve Training Center near Augusta, Michigan. More information about the ROTC program is available at the ROTC office in Oakland Gym by calling 616-387-8120 or 616-387-8122.

Four Year Program
The four year military science program is divided into a Basic Course (first two years) and an Advanced Course (last two years) and is offered as a minor program by the University. Students who participate in the Basic Course are under no obligation to the active Army or the reserves.

Basic Course
The Basic Course is designed to give students a general knowledge of the role of national defense and also provides knowledge of leadership skills needed by military officers. Students completing the Basic Course have an opportunity to be considered for the Advanced Course program and obtain a commission in the active Army or Reserve Components. ROTC students take at least one military science course each semester. First year students normally take MLSC 140 in the fall and MLSC 150 in the winter semester. Sophomore students take MLSC 240 during the fall and MLSC 250 during the winter. Exceptions to the above requirements must be approved by the chair of the department. Students who have had three years of junior ROTC (High School JROTC) or more than six months of active military service may, with the approval of the chair of the department, have
Advanced Course

Students successfully completing the Basic Course may be enrolled in the Advanced Course with the permission of the chair of the department. Students accepted for the Advanced Course receive a non-taxable subsistence allowance of $150 per month while school is in session (up to $1,500 a year). The major emphasis of the Advanced Course is the development of individual leadership and military skills. During the junior year, students complete MLSC 340 and 350. Between the junior and senior year, students will receive pay for attending a four week camp which can qualify for academic credit (MLSC 390). During the senior year, students complete MLSC 440 and MLSC 450. Course work is also required of students in the areas of history, behavioral sciences, written communications, mathematics, and computer science in order to complete the Military Science minor. These courses will be taken in the general education distribution program areas. The Department of Military Science advisor should be consulted on the specific courses which satisfy these requirements. Exceptions must be approved by the chair of the department.

Two Year Commissioning Program

For those students who are transferring into the University, graduate students, and currently enrolled students who have not taken military science classes, but desire to be commissioned as a second lieutenant, a two year program is available. Students enter this program by applying for attendance at no obligation, to a six week ROTC Basic Summer Camp at Fort Knox, Kentucky. Attendance and successful completion of Basic Summer Camp is substituted for the Basic Course classes. At the basic camp, which can qualify for academic credit (MLSC 290), the student is trained, fed, and housed at the expense of the government. The student also receives travel pay plus a salary of approximately $761. Contact the Department of Military Science for details.

Military Science Minors

A department minor slip is required.

<table>
<thead>
<tr>
<th>FOUR YEAR PROGRAM</th>
<th>Military Science Courses (MLSC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Year</td>
<td>MLSC 140 and MLSC 150 4 hrs.</td>
</tr>
<tr>
<td>Sophomore Year</td>
<td>MLSC 240 and MLSC 250 5 hrs.</td>
</tr>
<tr>
<td>Junior Year</td>
<td>MLSC 340 and MLSC 350 6 hrs.</td>
</tr>
<tr>
<td>Senior Year</td>
<td>MLSC 440 and MLSC 450 5 hrs.</td>
</tr>
</tbody>
</table>

### TWO YEAR COMMISSIONING PROGRAM

| Prerequisite: Veteran or Basic Camp, or approval of department chair. |
|--------------------------|--------------------------|
| Junior Year              |                           |
| MLSC 340 and MLSC 350    | 6 hrs.                   |
| Senior Year              |                           |
| MLSC 440 and MLSC 450    | 5 hrs.                   |

### ADDITIONAL REQUIREMENTS

In addition to the courses listed above, all students in the minor program must complete one course from each group below:

#### A. History
- HIST 320 3 hrs.
- HIST 414 3 hrs.

#### B. Mathematics
- MATH 111 3 hrs.
- MATH 116 3 hrs.
- MATH 366 4 hrs.

#### C. Political Science
- PSCI 250 4 hrs.
- PSCI 350 4 hrs.

#### D. Psychology/Sociology
- PSY 100 3 hrs.
- SOC 171 3 hrs.

### Military Science Courses (MLSC)

A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture-lab hours).

#### BASIC COURSE

<table>
<thead>
<tr>
<th>MLSC 140 Outdoor Survival Skills (2-2) 2 hrs. Fall, Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emphasis is placed on outdoor survival skills, including land navigation, survival cooking, cold/hot weather injury prevention, basic first aid, CPR, and physical fitness. An off-campus exercise will put to use skills acquired during the course.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MLSC 150 Projecting National Power (2-2) 2 hrs. Fall, Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>A study of the factors contributing to national and international power, and an introduction to the principles of warfare and the causes of international conflict.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MLSC 240 Basic Leadership I (2-2) 2 hrs. Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>A study of leadership principles and methods of instruction. Includes a study of the evolution, purpose, and organization of the military.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MLSC 250 Basic Leadership II (3-2) 3 hrs. Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>A study of leadership considerations and practical applications with regard to small groups. Development of basic plans and coordination sequences.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MLSC 290 Basic Leadership Field Experience 3 hrs. Spring, Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>A six week summer camp designed for students who were unable to take the Military Science Basic Course on campus. The students receive practical experience and instruction in tactical and technical subjects, with specific emphasis on leadership training in the form of problem analysis, decision-making, and troop-leading experiences. Prerequisites: Approval of department chair.</td>
</tr>
</tbody>
</table>

### MLSC 299 Studies in Military Science 1-4 hrs. Fall, Winter, Spring, Summer

An opportunity for students who have been unable to take military science courses in sequence to obtain needed course work at more convenient times. Course content is adapted to meet the individual needs of the student. Prerequisite: Approval of department chair.

### ADVANCED COURSES

<table>
<thead>
<tr>
<th>MLSC 340 Advanced Leadership I (3-2) 3 hrs. Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studies of authority and responsibility, communication, leadership fundamentals, planning, counseling skills coordination, and ethical decision-making with emphasis on practical application to military situations. Prerequisite: Approval of department chair.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MLSC 350 Advanced Leadership II (3-2) 3 hrs. Spring, Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of advanced planning and coordination sequences applicable to the employment of military organizations. Prerequisite: Approval of department chair.</td>
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</table>

<table>
<thead>
<tr>
<th>MLSC 390 Advanced Military Leadership (3-0) 3 hrs. Spring, Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>A six week training session designed to supplement campus instruction by providing the cadet practical experience and instruction in tactical and technical subjects with specific emphasis on leadership training in the form of problem analysis, decision-making, and troop-leading experiences. Prerequisites: Approval of department chair.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MLSC 440 Line and Staff (3-2) 3 hrs. Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>A comprehensive course in the fundamentals of military administrative, logistical, training management, and the Army Officer Evaluation Reporting Systems. Prerequisites: Approval of department chair.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MLSC 450 Military Law, Ethics and Professionalism (2-2) 2 hrs. Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course content includes a survey of military justice, ethics, and professionalism required of military leaders. Prerequisite: Approval of department chair.</td>
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</table>

<table>
<thead>
<tr>
<th>MLSC 499 Studies in Military Science 1-4 hrs. Fall, Winter, Spring, Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>An opportunity for students who have been unable to take military science courses in sequence to obtain needed course work at more convenient times. Course content is adapted to meet the individual needs of the students. Topics may vary from semester to semester and students may repeat the course. Prerequisite: Approval of department chair.</td>
</tr>
</tbody>
</table>
A Program For Students Who Choose To Explore Academic and Career Options

University Curriculum provides beginning and transfer students who wish to explore academic and career options with advising, assessment, and referral services designed to help them select a curriculum. The program is designed with a sensitivity to students' developmental as well as academic needs.

Students in the University Curriculum are assigned advisors who are specialists in academic planning, human development, and career planning. Help is provided for course selection, academic program planning, interpreting skills and interest assessments, exploring academic and career alternatives, and establishing goals.

In addition to academic advising and career counseling, opportunities available for University Curriculum students include:

- UNIV 101: Freshman Seminar, 1–3 hours
- UNIV 102: Career Exploration and Development, 1 hour
- Academic Skills Center Programs and Workshops
- Career Exploration and Media Center
- Skills and Interest Assessments
- Specially-designed freshman curriculum options suited to skills and interests.

Course Options

UNIVERSITY (UNIV)

UNIV 101 Freshman Seminar
1–3 hrs.
This course is designed to assist students to encounter experientially, intellectually, and emotionally the various avenues of learning, and to foster the academic, personal, social, and career development of each student. The activities and assignments of the course aid students in the development of an intellectual awareness and provide the skills and self-management required for a successful transition from high school to the University. The course is intended to excite students about learning and living in the new and challenging world of Western Michigan University. For freshmen only.

UNIV 102 Career Exploration and Development
1 hr.
This course is designed to help the undecided student assess and develop skills in self-awareness, career awareness, decision-making, and planning. It will include activities to identify and explore the following areas: values, interests, career information, decision-making, and University resources. Assignments will involve written exercises and research in the Career Media Center.
College Mission Statement

The mission of the College of Arts and Sciences, in accordance with the traditional stewardship of the College, is to engender in students those skills, attitudes, and habits of mind which permit them to function responsibly in a profoundly complex and changing world. The College of Arts and Sciences at Western Michigan University offers undergraduate courses and programs of study in the humanities, the social and behavioral sciences, and the physical, biological and mathematical sciences. In addition to providing specialization in its many disciplines, the College contributes to the basic knowledge and the general liberal education of all students attending Western Michigan University.

The goals of the College for the undergraduate student, while including professional, pre-professional or vocational training, are specifically focused on developing the liberally educated adult. To this end, the College seeks to ensure that its students learn the skills necessary for critical thinking, decision making, problem solving and adapting to change; that they explore broadly in areas that will encourage understanding of their western and/or global heritage; and that they develop a respect for diversity in the world and the pluralism in this society. The College strives to encourage the growth of persons who have the self-confidence that comes with knowledge and the ability to seek out, analyze and evaluate information; persons who are competent, humane and sensitive to the human condition and to the physical environment in which they live, and who, therefore, will make effective and substantial contributions to society.

The College regards classroom attendance as an essential part of the educational experience of each student. Accordingly, the College has a strong expectation that students attend class, be punctual to class, and remain in attendance for the full class period unless there is a legitimate reason to be excused.

Curriculum and Majors

The College of Arts and Sciences has a single, unified curriculum. Liberal Education Curriculum (LEC). All students who graduate from the College of Arts and Sciences will be enrolled in the LEC curriculum. For a list of Arts and Sciences majors, see “Undergraduate Curricula and Approved Majors” in the Degrees and Curricula section of this catalog.

College Degree Requirements

1. The Liberal Education Curriculum. Students who enter with the 1997 and subsequent catalogs and who will graduate through the College of Arts and Sciences will complete the Liberal Education Curriculum (LEC) described below. Students who have entered under prior catalogs are encouraged to switch to the new LEC program.

2. Majors and Minors. Students who will graduate through the College of Arts and Sciences must have a major in one of the disciplines or programs of the College and a minor in Arts and Sciences or any other college in the university. In order to be admitted to any major in the College of Arts and Sciences, students should apply to the department or program as soon as possible and prior to completion of 36 semester hours. Transfer students with more than 35 hours should apply before matriculation. Failure to do this may mean that a student will not be permitted to enroll in major core courses. Change of curricula during the junior or senior year will be accommodated where possible.

3. Students who will graduate from the College of Arts and Sciences may use courses offered through Self-Instructional programs according to the following distribution of the 15 credits allowed in the Undergraduate Catalog. Up to 9 credit hours taken through Self-Instructional Programs may be used in fulfillment of the General Proficiency Areas, and LEC Core requirements; any or all of the 15 credit hours allowed may be used for electives. Under normal circumstances, Self- Instructional courses may not be used for credit toward a major or minor in Arts and Sciences. Students in the Arts and Sciences curricula should consult with an advisor prior to registering for any Self-Instructional course. The College Advising Office must give approval for Self-Instructional courses to be used toward completion of the General Education Distribution, Academic Proficiency Areas, and LEC Core requirements; a departmental advisor must approve use of Self-Instructional courses for prerequisites in a major or minor. Students with unusual circumstances rendering Self-Instruction temporarily appropriate for work in a major or minor in Arts and Sciences must have written approval from the department chairperson or department advisor before registering for those courses.

4. Students who will graduate from the College of Arts and Sciences in the Liberal Education Curriculum may not use the Credit/No Credit option except in elective courses.

5. Students who will graduate from the College of Arts and Sciences in the Liberal
Education Curriculum may not use the College Level Examination Program (CLEP) except in elective courses.

The Liberal Education Curriculum

All students at Western Michigan University must satisfy the University General Education requirements. The Liberal Education Curriculum (LEC) incorporates and expands upon the University General Education Program. Students who will graduate from the College of Arts and Sciences will satisfy the University General Education requirements as well as the additional Core requirements of the LEC.

The LEC is a comprehensive, unified program of study for the Bachelor of Arts and Bachelor of Science degrees in the College of Arts and Sciences. It reflects the traditional goals of liberal education in the humanities, the social sciences, and the natural sciences as articulated in the College of Arts and Sciences Mission Statement and provides a common academic experience for students in basic and advanced English composition, mathematics, foreign language, computer skills and critical thinking. In addition, the LEC focuses attention on contemporary issues and concerns, including the pluralism of society both within and among nations. Completion of portions of the program through study abroad, in Western Michigan University’s International Programs or by transfer of course work from a foreign college or university, is encouraged. In order to fulfill all the requirements of the LEC and fully realize the liberal arts experience, students must select their courses carefully by working closely with an advisor in the College’s Academic Advising Office, 2318 Friedmann Hall.

Students in the Liberal Education Curriculum will complete the University General Education Program with stipulations and additions comprising the LEC Core as described below.

1. Critical Thinking requirement: Proficiency 4 (Enhanced Proficiency) in the University General Education Program to be fulfilled by completing 4c (Critical Thinking).
2. Foreign Language requirement: Two semesters (6-8 hours) of a foreign language, or proficiency by exam, or two years of a foreign language in high school with A-S 101 (or better in final semester).
3. Additional Courses supplementing the Distribution Area requirements in the University General Education Program: (a) one additional course in Distribution Area 3 (U.S. Cultures); (b) one additional course in Distribution Area 6 (Science); (c) is optional for the additional science course; (d) one additional course in the Humanities (see Distribution Area 2 for departments; additional course need not be General Education course); (e) one additional course in the Social Sciences (see Distribution Area 5 for departments; additional course need not be General Education course); (f) only one of the two courses in the Social sciences may be a “principles” course and only one of the social science course from the following list: ANTH 100, 110, 140, 210, 240, BUS 170, 220, COM 200, ECON 107, 108, 109, 201, 202; GEOG 101, 103; HIST 103; PSCI 100, 105, 240, 250; PSY 100, SOC 200.
4. Computer Usage requirement: The university computer usage requirement must be fulfilled by (a) completing, with a passing grade, CS 105, or (b) completing CS 105 "credit by examination." For exemptions, students should see a College of Arts and Sciences curriculum advisor.

Besides the above LEC requirements, specific to the College of Arts and Sciences, students who will graduate from the College must have at a minimum a free-standing major (i.e., not a coordinated major) or take a minor from the College of Arts and Sciences or other College of the University. Students with two majors do not need a minor but should consult with a curriculum advisor.

The Academic Advising Office

George H. Demetropoulos
Kate Hayes
Julie Mace
Maria McGurn
2318 Friedmann Hall
387-4366

Students in the Arts and Sciences Liberal Education Curriculum should see a college advisor to plan their degree programs. The staff of the College of Arts and Sciences Advising Office advises students concerning Liberal Education Curriculum requirements as well as Intellectual Skills and other University requirements. An appointment should be scheduled during the student’s first enrollment period in order to obtain information regarding requirements.

Transfer students in the Liberal Education Curriculum, after they have received their credit evaluation forms from the Admissions Office, should have their transfer courses evaluated in credit toward their Liberal Education and other College or University requirements.

The staff of the Academic Advising office will provide introductory information about the programs, majors and minors available within the College of Arts and Sciences and will make referrals to other advising facilities, such as departmental advisors, etc. Students seeking exploratory information about the programs and curricula of the College are encouraged to visit this office.

Students may stop by, or call 387-4366 for an appointment.

Arts and Sciences Student Planned Major (SPM)

The Student Planned Major provides students who wish to graduate from the College of Arts and Sciences the opportunity to pursue educational goals which cannot readily be accommodated in the College’s disciplinary majors. The student will complete the College’s Liberal Education Curriculum and work with a College Advisor plus at least one faculty advisor to individually tailor a course of study of sufficient credit hours to meet general degree requirements. Students completing this major are eligible to receive either the B.A. or the B.S. degree depending upon the particular configuration of coursework selected.

Any undergraduate student in good academic standing, with 75 or fewer semester hours earned, is eligible to enter the SPM. Students interested in this option should contact the Director of Advising in the College of Arts and Sciences. Those entering the SPM are expected to develop a written statement outlining educational goals and the proposed course of study.

Arts and Sciences College Courses (A-S)

A-S 320 Interinstitutional Study

1-12 hrs.

Students may take classes at Davenport College, Kalamazoo College, and Kalamazoo Valley Community College through a cooperative program using this course number for credit toward a WMU degree. Information and enrollment forms may be obtained from the Registrar’s Office. Where credit toward the major or minor is desired, prior approval must be obtained from the student’s major and/or minor department.

A-S 330 Study Abroad—WMU Programs

1-16 hrs.

Student participation in an approved program of study in a foreign college or university organized through Western Michigan University’s Office of International Affairs.

A-S 331 Study Abroad—Non-WMU Programs

1-16 hrs.

Student participation in an approved program of study in a foreign college or university organized through an institution other than Western Michigan University. Where credit toward the major or minor is desired, prior approval must be obtained from the student’s major and/or minor department. Individual courses may be used in fulfillment of some areas of the College of Arts and Sciences Liberal Education Curriculum or the University General Education Program provided the content and scope of the course are appropriate. Students desiring to use study abroad in fulfillment of LEC or General Education requirements should bring a course description and syllabus to the Director of Advising in the College of Arts and Sciences Advising Office, prior to enrollment when possible, for approval and placement in the appropriate Distribution Area or Proficiency.

A-S 390 Arts and Sciences Seminar

1-4 hrs.

A variable topics course in interdisciplinary studies or other subjects that fall outside the traditional disciplines. May be taken as an elective or for credit in the College of Arts and Sciences major or minor by special arrangement with the department. Topics will be announced in the Schedule of Classes. May be repeated once when topic differs. Prerequisite: Permission of the instructor.

A-S 399 Field Experience (Community Participation)

2-8 hrs.

A program of independent study combining academic work with social, environmental, civic or political field work. May be used as elective credit only. Prerequisites: A written outline of the student’s project, approved by a faculty supervisor, with approval from the office of the Dean.
INTERDISCIPLINARY PROGRAMS

1. American Studies Program
2. Black Americana Studies Major and Minor
3. Criminal Justice Program
4. Environmental Studies Program
5. Center for International and Area Studies Programs:
   - African Studies, Asian Studies, European Studies, Latin American Studies
6. Medieval Institute Program
7. Science and Mathematics Teaching Minor
8. Social Science Teaching Minors
9. Women’s Studies Major and Minor
10. World Literature Minor

Black Americana Studies
Earl M. Washington, Director and Advisor
815 Sprau Tower
(616) 387–2664

Leander C. Jones, Advisor
819 Sprau Tower
(616) 387–2666

Benjamin C. Wilson, Advisor
818 Sprau Tower
(616) 387–2667

This Black Americana Studies (BAS) interdisciplinary program has a corrective and supportive function to the curricula and services of the University. Its broad design is to penetrate, permeate, and pervade the life of the University. Its more specific aims are to provide every student who comes to the University knowledge and understanding of the role that people of African descent have played and play in making America what it is. It is retelling the American story.

BAS core courses 200 Black Presence, and 300 and 301 Black Experience, have been approved for General Education credit.

Program
The BAS coordinate major requires a minimum of 24 credit hours to be taken in conjunction with a disciplinary major. Course work in the Black Americana Studies major includes an interdisciplinary core consisting of a core of courses in Black Americana Studies including one with a methodological focus (see offerings below marked with an asterisk), a selection of courses from other departments as listed, and a concluding capstone experience. Students must meet with the program advisor to declare a major before registering for the third course in the BAS core.

BAS COORDINATE MAJOR
24 credit hours minimum including Capstone Experience

1. The BAS core courses listed below will provide the necessary background to better comprehend the nature and history of the African experience in the Americas. Students will choose at least three from the courses listed below. Selection must include at least one course marked with an asterisk. Some of these courses can be double counted in General Education and BAS coordinate major up to a maximum of two courses, or Liberal Education Curriculum and BAS coordinate major up to a maximum of three courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAS 200</td>
<td>Black Presence</td>
<td>3</td>
</tr>
<tr>
<td>BAS 210</td>
<td>Black Nationalism</td>
<td>3</td>
</tr>
<tr>
<td>BAS 300</td>
<td>Black Experience: The African Beginnings to 1865</td>
<td>3</td>
</tr>
<tr>
<td>BAS 301</td>
<td>Black Experience: From 1866 to the Present</td>
<td>3</td>
</tr>
<tr>
<td>BAS 310</td>
<td>Black Woman: Historical Perspective and Contemporary Status</td>
<td>3</td>
</tr>
<tr>
<td>*BAS 314</td>
<td>Black Community</td>
<td>3</td>
</tr>
<tr>
<td>*BAS 320</td>
<td>Ecology and the Black Community</td>
<td>3</td>
</tr>
<tr>
<td>*BAS 330</td>
<td>History and Significance of Black Popular Culture</td>
<td>3</td>
</tr>
<tr>
<td>BAS 350</td>
<td>Blacks in Michigan</td>
<td>3</td>
</tr>
<tr>
<td>BAS 360</td>
<td>Black Woman / Black Man Relationships</td>
<td>3</td>
</tr>
<tr>
<td>BAS 400</td>
<td>Blacks in the Arts</td>
<td>3</td>
</tr>
</tbody>
</table>

2. Students must choose at least four courses from the two areas below. The choice must include at least one course from the Social Sciences and one from the Humanities.
   a. Social Science courses
      ANTH 341 Cultures of Africa | 3       |

American Studies Program
Ronald Davis, Advisor
4075 Friedmann Hall (387–4650)

Students in American Studies follow an interdepartmental program bringing to bear the insights of art, music, drama, literature, and the social sciences on the problems of American life. A broad-ranging study of American culture can provide an excellent background for students preparing for careers in education, advertising, journalism, research organizations and publishing houses, politics, public relations work in government and industry, the foreign service, mass communications, or law. American Studies also offers perceptive students an opportunity to evaluate the forces shaping their own culture and to assess their personal role in a complex society.

A 3.00 grade point average is generally considered a prerequisite.

MAJOR IN AMERICAN STUDIES
Students majoring in American Studies are expected to complete:
1. At least 36 hours in five approved fields.
2. At least 18 hours in courses numbered 300 or above.
3. At least 12 hours in one participating department.
4. An interdisciplinary course dealing with basic issues in American culture.

Baccalaureate Writing Requirement
Students who have chosen the American Studies major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:
HIST 390 Introduction to the Study of History
PHIL 410 Professional Ethics

MINOR IN AMERICAN STUDIES
The Minor requires 20 hours from four approved fields of American Studies. Approval of the advisor is required for entry into the program. Minor slip is required.
Black Americana Studies Courses (BAS)

A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

BAS 200 Black Presence
3 hrs.
A survey of the impact of the physical presence of people of African ancestry and descent in the European colonies of the Western Hemisphere from the earliest days of the age of exploration to the present. Historically oriented, the course is designed to be interpretive rather than chronological; to deal with Black presence as party to the expansion of Western Europe in the New World; as active participation in settling and developing the colonies, as a people apart or of contrast. How did the presence of Africans influence the development of the life and institutions of the country in Colonial, National and later years?

BAS 210 Black Nationalism in America
3 hrs.
An interdisciplinary study of Black Nationalism as an important, persistent and substantive ideology of Black America. This course analyzes and explores ideas and programs of Black leaders.

BAS 300 Black Experience: From the African Beginnings to 1865
3 hrs.
This course will examine the myriad patterns of adaptation and adjustment made by the enslaved Africans and free people of color to the continuing oppressive character of American Society prior to 1865. Slave narratives and abolitionists tracts written by freed people reveal much about the African-Americans' interpretation of their presence in the New World. The Black presence created a commonality of experience, the characteristics of which became and remain a distinctive American co-culture. It aims to examine how the Black presence altered the idea of race and how this alteration became a function of the institutional forms that Black Americans have shaped to survive in a hostile environment.

BAS 301 Black Experience: From 1866 to Present
3 hrs.
The Black Experience 1866 to the present will concentrate on the plight of the newly freed African-American. The development of the family in post bellum years, the Euro-American reaction to the change in status, the rise of pseudo scientific racist thought, the long-term psychological effects of slavery on both the victims and the victimizers, the search and the rise of Black Messianic leaders, the migration from the rural-agricultural South to the urban-industrialized North, the emergence of Black Nationalism-Civil Rights Movement and the non-Black backlash. BAS 300 is highly recommended.

BAS 310 The Black Woman: Historical Perspective and Contemporary Status
3 hrs.
This course is an examination of the historical perspective and contemporary status of the Black woman and her story, paying critical attention to her image as reflected in her role in the American society. The course emphasizes the problems, issues, and concerns of the Black woman. Students will participate in securing visiting Black female speakers and documenting their story as Black women.

BAS 314 The Black Community
3 hrs.
An investigation of the social forms and structures within the Black community from the unique Black perspective. The course will focus on the sociological, political, economic, psychological, and physical aspects of community building by a subordinated group.

BAS 315 The Underground Railroad in the Midwest
3 hrs.
During the mid to late 19th century, Calhoun County, Michigan was an active human rights center. This area was one stop on the Central Michigan route of the Underground Railroad. Slaves would begin their journey in the upper southern states, and go from stop to stop, ultimately reaching "their Canaan lands." There was a large group who participated in this pursuit of freedom for the enslaved Africans. They were considered subversive fanatics by slaveholders and righteous reformers by other. The aim of this class is the examination of the Underground Railroad system and the people involved. Of particular interest will be the role played by Michiganders in this freedom movement.

BAS 320 Ecology and the Black Community
3 hrs.
This course is the study of the relationships of local Black residents within their social and physical environments. The course focuses on the individual's status in the community through an evaluation of the social, political, economic and physical aspects of the environment as influenced by the social order of American society and its philosophy. Students are expected to complete a research study of a special ecological issue and to document the contributions of African Americans to Western Michigan University through the Annual W.E.B DuBois Conference.

BAS 330 History and Significance of Black Pop Culture — 1906 to Present
3 hrs.
This course will focus on the continuum to Black Pop Culture in the twentieth century, its developmental stages and its emergence as the nucleus of Pop Culture in "mainstream" America. Students will survey Black theatre, art, music, and literature in twentieth-century America and study the institutions, persons, sites, and traditions that it inspired.

BAS 350 Blacks in Michigan
3 hrs.
A survey of the significance of Blacks in the making of Michigan history. We will trace the movement of Blacks into Michigan, investigate patterns of settlement, reactions to the emigrants, and the development of the Black families and church as principal forces in the Black community. We will study the political, social, and economic implications of being Black in Michigan, both in urban and rural areas from 1790 to the present. The student will be introduced to the varieties of historical sources available for such study.

BAS 360 Black Woman-Black Man Relationships
3 hrs.
This course is a study of the dynamics of the Black male/Black female relationships in a variety of contemporary settings. Students are expected to assist in the conduct and documentation of the proceedings of the annual Black Male-Female Panel Discussion of social issues of special interest to the Black community, including family dynamics, male-female relationships and strategies for the improvement of those relationships.

BAS 400 Blacks in the Arts
3 hrs.
An examination of the creative dimension of the Black Experience as found in music, art,
literature, religion, and dance. This course will also explore the influence of science and technology on the arts and identify the underlying elements in these areas.

BAS 465 BAS Internship/Seminar 3–6 hrs.
Students will participate in an internship/practicum where their knowledge will be put directly into practice. They will be led through this experience with a seminar led by an approved faculty member from the BAS core faculty and, where appropriate, a person from the student's disciplinary major department. Prerequisite: A minimum of 15 credits in the BAS coordinate major.

BAS 498 Directed Independent Study 1–6 hrs.
A program of independent study, directed by an approved BAS faculty member, that allows the student to pursue readings relating to the Black Experience not dealt with in other courses. The initiative for describing the project, planning the method(s) of investigation, determining the appropriate results, and securing the cooperation of a faculty member to advise the work must come from the student. Applications are available in the BAS office and must be approved by the director.

BAS 510 Multiethnic Education 3 hrs.
This course is designed to prepare teachers and administrators who will work in a multiethnic setting. The course is primarily aimed at helping teachers at any level who teach a social studies component, but teachers of all other subjects, e.g., physical and biological sciences and special education and school administrators, will find the course useful. Students will learn how to compile data on the ethnic makeup and resources of the local community, and develop instructional packages and evaluation materials for use in multiethnic courses.

Criminal Justice Program
Ronald C. Kramer, Director
2408 Sangren Hall
(616) 387-5264

Michelle Volkmer, Advisor
2407 Sangren Hall
(616) 387-5286

Criminal Justice is an interdisciplinary curriculum designed to provide perspective on the entire criminal justice system. The program is designed to provide a well-rounded, theoretical, and practical education necessary for careers in criminal justice and/or graduate work in law, criminology, or other areas.

The Criminal Justice Major requires thirty-three hours of core and specialized classes including: Criminology, Criminal Justice Process, Sociology of Law Enforcement, Juvenile Delinquency, Correctional Process, Advanced Criminology, and Criminal Law. Specialized work in juvenile justice, courts, probation, and law enforcement administration is available as well as certification as a Michigan police officer. Curriculum and program details may be found under Sociology/Criminal Justice.

Environmental Studies
Molly Cole, Program Coordinator
239 Moore Hall
(616) 387-2716

Attached faculty:
David Hargreave
Michael D. Swords

Faculty with Joint Appointments:
John Cooley (English)
Kenneth A. Dahlberg (Political Science)

Central to the Environmental Studies Program is a concern for the long-term health and well-being of the planet and its inhabitants. An interdisciplinary program, it provides students with a variety of intellectual and practical experiences that provoke thought about the complex interrelationships that exist among humans, the social and technological systems they develop, and the natural environment in which they are embedded. It encourages students to develop an appreciation for the many elements of planetary health and to devise creative solutions to environmental problems. It offers students an opportunity to prepare for a professional role in one of the many environmentally-oriented fields (including conservation, remediation, development, public policy, planning, regulation, education or appreciation), to assume a position of leadership in the area of environmental advocacy, or to develop the attitudes and skills commensurate with a personally fulfilling, environmentally responsible way of living.

In addition to traditional course work, students in the Environmental Studies Program are encouraged to become actively involved in community environmental affairs by participating in an internship with a local organization or government agency, or by designing an independent project. Academic credit can be obtained for such experiences through ENVS 420 Internship, or ENVS 430 Environmental Projects.

Program details and course descriptions for Environmental Studies may be found under the Department of Science Studies located elsewhere in this Undergraduate Catalog.

Center for International and Area Studies
Howard J. Dooley
Executive Director of International Affairs, International and Area Studies

African Studies Program
Sisay Asfela, Advisor
Asian Studies Program
Victor Xiong, Advisor
European Studies Program
William Ritchie, Advisor
Latin American Studies Program
Claudio Milman, Advisor

The International and Area Studies Programs were established by the Trustees and Administration of Western Michigan University as interdisciplinary programs devoted to the study of cultures located geographically outside the continental United States. Coordination of the International and Area Studies Programs is provided by the Office of International Affairs.

There are numerous programs that should be of great interest to undergraduate students; a detailed description of each will be found on the following pages of this catalog. In broad outline, these programs of study fall within two categories: (1) undergraduate co-ordinate majors of twenty-four semester hours, and (2) undergraduate minors of fifteen semester hours. Students who enroll in any of these co-ordinate majors must also enroll in a standard major in any college in the University.

The International and Area Studies Programs are a joint endeavor by faculty and students designed to provide a curricular framework within which to examine, analyze, and hopefully—understand the peoples and institutions of the world in cross-disciplinary perspective.

The programs seek to provide students with a broad variety of intellectual and experiential stimuli designed to promote an understanding of areas—their history, languages, literature and fine arts, social institutions, political processes, major intellectual currents, geography, economic problems, and the relationship of these factors to the role of these nations in the world community. Students enroll in relevant departmental courses including readings and independent courses.

The International and Area Studies Programs are designed for those undergraduate students who plan to pursue careers in international business, education, government, or the professions in which success would be enhanced by an understanding of peoples whose values, traditions, customs and institutions differ markedly from those with which most of us are familiar.

These programs seek to promote the following educational objectives:
1. To assist Western Michigan University students achieve a better understanding of other peoples and institutions.
2. To explore, analyze, and evaluate the impact of specific areas on the course of world events.
3. To stimulate acquisition of foreign language skills by Western Michigan University students.
4. To provide a forum for the exchange of views between students and faculty concerned with contemporary world affairs.
5. To encourage cross/disciplinary research and study by both students and faculty of issues affecting the contemporary world.

A language is required in some majors. However, any student planning the study of an area at the graduate level or the pursuit of a foreign-related career should obtain as much fluency in a language as possible as an undergraduate. To avoid studying a language only makes the successful pursuit of a related career more difficult.

The International and Area Studies Programs develop and promote opportunities for students enrolled in these programs to study and travel in foreign countries—thereby acquiring a firsthand understanding of contemporary conditions while further developing facility in one or more foreign languages. Academic credit earned as a result of study or research undertaken abroad may be accepted toward completion of requirements for the coordinate major or minor.

Students should consult the appropriate area advisor for the development of a program of study and for each registration if necessary.

African Studies Program
Coordinate Major or Minor
Sisay Asfela (Economics), Advisor
5418 Friedmann Hall
387–5545
Email: asfela@wmich.edu
The African Studies Program is an interdisciplinary international education program of concentrated study leading to a coordinate major or minor in African studies as part of the student's overall bachelor's degree program. Its specific aims are to develop a greater appreciation of the rich varieties of cultures and their achievements, to stimulate acquisition of languages spoken in Africa and knowledge about contemporary African affairs, and to provide a forum for study, exchange, analysis, and evaluation of information and ideas concerning U.S.—African relations and the importance of Africa in the world. This program is ideally organized for the student who wishes to take advantage of the Student-Planned Curriculum available at Western. A student who enrolls for the coordinate major in African studies must also have a disciplinary major in any college of the University. The program requires 24 semester hours of courses for the major and 15 semester hours for the minor.

Courses for the coordinate major or minor must be taken from the following list of courses and departments. Students must have their program of study approved by the African Studies Program Advisor.

A-S 330-331 Study Abroad 1-16
A-S 404-405 Foreign Studies

*ANTH 341 Cultures of Africa 3
BAS 300 African Beginnings to 1865 3
ECON 108 Contemporary International Economic Issues 3
ECON 388 African Economics 3
ECON 484 Comparative Economic Systems 3
*ENGL 314 African Literature 4
*GEOG 389 Sub-Saharan African Languages 3
GEOG 309 Studies in Regional Geography—Africa 3
*HIST 388 Introduction to African Civilization 3
HIST 485 Early Islam 3
HIST 488 History of West Africa 3
HIST 489 Topics in African and Asian History* 1-3
PSCI 250 International Relations 4
*PSCI 341 African Political Systems 4
*REL 304 African Religions 4
SOC 430 Sociology of Development 3

* Core Courses

Baccalaureate Writing Requirement

Students who have chosen the African Studies coordinate major will satisfy the Baccalaureate Writing Requirement by successfully completing the designated course in their standard major.

STUDY ABROAD

Core requirements for the African Studies major or minor may be satisfied in part by appropriate course work at African universities or in approved study abroad programs. Consult the Director of Study Abroad in the Office of International Affairs for study abroad opportunities in Africa, and the African Studies Advisor for applicability.

ASIAN STUDIES PROGRAM

Victor Xiong (History), Advisor
4422 Friedmann Hall
387-4548

This is a program to acquaint people with Asia as a whole as well as specific topics and areas within the region. The future is with the Pacific rim;" is a common phrase and this program is designed to suit the individual focus of each student, whether the goal is international business and finance, technological development, economic growth, cultural interactions, education, social work or doing graduate work in an Asian related field. There is a wide range of course offerings and a high degree of freedom for the student to study the various complexities and process going on in this region stretching from Mongolia to Australia and Micronesia to the Middle East.

COORDINATE MAJOR

Undergraduates may choose an interdisciplinary coordinate major in Asian Studies. This is a double major program. In addition to fulfilling the requirements of a disciplinary major in any college of the University, the student is required to take 24 credit hours of approved Asian Studies courses. An Asian language or Japanese is not required for this major; however, it is strongly recommended, and training in an Asian language counts toward the requirements.

Baccalaureate Writing Requirement

Students who have chosen the Asian Studies coordinate major will satisfy the Baccalaureate Writing Requirement by successfully completing the designated course in their standard major.

MINOR

Undergraduates in any college of the University may choose an interdisciplinary minor in Asian Studies. Fifteen semester hours of approved Asian Studies courses are required.

CORE COURSES

A-S 330-331 Study Abroad 1-16
A-S 404-405 Foreign Studies

ANTH 240 Peoples of Cultural Anthropology* 3
ANTH 340 Cultures of Asia* 3
ANTH 332 Topics in World Cultural Areas* 3
ANTH 545 Topics in Ethnology* 3
BUS 594 International Business Seminar 1-6
CHIN 100 Basic Chinese I 4
CHIN 101 Basic Chinese II 4
CHIN 200 Intermediate Chinese I 4
CHIN 201 Intermediate Chinese II 4
COM 474 Intercultural Communications 3
ECON 380 International Economics* 3
ECON 387 Studies in Asian Economics 3
ECON 588 Economic Development* 3
ENGL 313 Asian Literature 3
ENGL 314 Asian Literature 3
GEOG 385 The Pacific Realm 3
GEOG 389 Mongolian Culture 3
HIST 349 Ancient Near East 3
HIST 376 Modern East Asia 3
HIST 385 Modern Middle East 3
HIST 476 Traditional China 3
HIST 477 Modern China 3
HIST 479 Modern Japan 3
HIST 485 Early Islam 3
HIST 489 Topics in Asian and African History 3
HIST 585 Studies in Asian and African History* 3
JPN 100 Basic Japanese I* 4
JPN 101 Basic Japanese II* 4
JPN 200 Intermediate Japanese I* 4
JPN 201 Intermediate Japanese II* 4
JPN 316 Japanese Composition* 3
JPN 317 Japanese Conversation* 3
JPN 477 Foreign Study** 1-16
JPN 550 Independent Study 1-3
LANG 100 Basic Critical Languages* 4
LANG 101 Basic Critical Languages* 4
LANG 200 Intermediate Critical Languages I* 4
LANG 201 Intermediate Critical Languages II* 4
LANG 210 Intermediate Critical Languages III* 4

MUS 352 Non-Western Music 4
PSCI 250 International Relations 4
PSCI 342 Asian Political Systems 4
PSCI 450 Seminar on International and Comparative Politics 3
PSCI 536 Comparative Public Administration 3
PSCI 549 Problems of Foreign Political Systems* 3-4
REL 302 Religion in the Indian Tradition 4
REL 303 Chinese Religion 4
REL 307 The Islamic Tradition 4
REL 308 Japanese Religion 4
REL 500 Historical Studies in Religion* 2-4
SOC 304 Introduction to Non-Western World* 4
SOC 334 Pacific Rim—Asian Societies 3
SOC 336 Modern Japanese Society 3

* Only topics related to Asian Studies
** If you choose a Japanese Minor, you cannot use the same credits for an Asian Studies Major or Minor

Study Abroad

Core requirements for the Asian Studies major or minor may be satisfied by appropriate course work at Asian universities or in approved study abroad programs. For example, the Japan Center for Michigan Universities offers a minimum of 13 credit hours for one semester, and 26 credit hours for two semesters of study in Japanese language, Japanese history, and other subjects. Transfer credits earned at WNMU's "sister schools," such as Keio University in Japan and Sunway College in Malaysia can be applied to the Asian Studies major or minor. Consult the Director of Study Abroad in the Office of International Affairs for study abroad opportunities in Asia, and the Asian Studies Advisor for applicability.

EUROPEAN STUDIES PROGRAM

COORDINATE MAJOR

William Ritchie (Political Science), Advisor
4312 Friedmann Hall
387-6598

The courses for this program concentrate on the European area. They are drawn from thirteen departments of the University which offer subject matter focused on the European area. The program is designed to appeal to those students who have an interest in Europe and wish to transcend the disciplinary boundaries of any one field of study. The European Major must be undertaken in conjunction with a disciplinary major and is designed to broaden the student outlook on the European area in general. Students are encouraged to concentrate on one of the major cultural-linguistic regions of Europe. For those students who have a broad interest in European culture and its institutions, and who do not wish to specialize in one of the major area complexes, there is the general option.

1. A minimum of 24 hours will be required for the completion of the coordinate major in European Studies. The European Studies coordinate major will be offered in the following options concerning these specific areas:

   • British Studies
   • Germanic Studies
   • Romance Studies
   • Russian and East European Studies
   • General Option

2. Students are encouraged to consult the area advisors in the field of their interest. Their tentative program worked out by the
area advisors should be brought to the European Studies Program advisor for audit and final signature. Interested students can also approach the advisor for European Studies directly.

3. Each regional option will require 8 hours of an appropriate language. Language study can be undertaken in the Department of Foreign Languages and Literatures and through study abroad. Students with the knowledge of an appropriate language may have this requirement waived.

4. Candidates for coordinate major degree must select three courses appropriate to their area of interest from an approved list with the assistance of their advisor.

5. The remaining hours are elective with the requirement that they have relevance to the European area and are to be selected in consultation with the student's advisor. Students who elect the general option of the coordinate major must select an advisory committee. The committee shall consist of the European Studies advisor, or an advisor pertinent to the student's general option, and a third member to be jointly agreed upon by the student and the European Studies advisor.

Baccalaureate Writing Requirement
Students who have chosen the European Studies coordinate major will require four semester hours of writing in the Baccalaureate Writing Requirement by successfully completing the designated course in their minor major.

MINOR
Fifteen semester hours taken from the list of European Studies courses are required for completion of a minor concentration in European Studies. Eight hours of language and one course, drawn from each of two disciplines listed in the core, will be part of the requirement. The language requirement can be waived only by written approval of the European Studies advisor. In case the student obtains permission to waive language, the required hours will be drawn from an appropriate list of core courses by the European Studies advisor.

STUDY ABROAD
The European Studies major or minor in any of the options may be satisfied in part by appropriate course work at European universities or in approved study abroad programs. For example, participants in the "European Culture and Society Program" at the University of Leuven, Belgium may be awarded a "Diploma of European Studies" by Leuven as well as earn credits towards their WMU program. Consult the Director of Study Abroad in the Office of International Affairs for study abroad opportunities in Europe, and the European Studies major/minor advisor for applicability.

British Studies
William Ritchie (Political Science), Advisor
European Studies Program
3412 Friedmann Hall
387-5698

The Coordinate Major in British Studies is designed to complement, not substitute for, conventional major programs in the various colleges of the University. Undergraduate students having a strong interest in Britain may pursue an interdisciplinary curriculum tailored by the student and the advisor to further the student's interests and career needs. Twenty-four credit hours must be selected from several of the thirteen departments participating in the program. More than forty separate courses constitute the total British Studies option of the European Studies Coordinate Major Minor Program.

The Coordinate Minor program in British Studies may be chosen by the student in consultation with the advisor. A minimum of 15 credit hours of approved British Studies courses must be accumulated successfully. Courses in British Studies currently approved are included in the list below. Students should consult with the advisor as to additions or changes.

A-S 330-331 Study Abroad
ECON 484 Comparative Economic Systems
ENGL 252 Shakespeare
ENGL 442 Modern Drama
ENGL 444 The British Novel
ENGL 532 English Renaissance Literature
ENGL 534 Restoration and 18th Century Literature
ENGL 536 19th Century British Literature
ENGL 538 Modern Literature
GEOG 383 Western and Southern Europe
HIST 362 History of England
HIST 363 Britain and the British Empire
HIST 460 Europe 1945-Present
HIST 462 Great Ages in English History
HIST 561 Victorian England
PSCI 340 West European Political Systems

In addition to the above courses many departments offer seminars, independent study, and variable topics courses which may be included in this program when they concentrate on the British Isles.

Germanic Studies
Peter Krawutschke (Foreign Languages and Literatures), Advisor
Germanic Studies Program
415 Sprau Tower
387-3212

The Coordinate Major in Germanic Studies must be combined with a major in a conventional academic discipline such as language, art, music, political science, history, or business. It consists of 24 credit hours which the student chooses together with an advisor from courses in thirteen departments. Eight credit hours or the corresponding knowledge of German or another Germanic language area are required together with the three core courses listed below.

The Coordinate Minor may be used to supplement conventional majors or as a minor. It consists of 15 credit hours. Eight hours of the corresponding knowledge of German or another Germanic language are required, together with two core courses from the list below.

CORE COURSES
GEOG 383 Western and Southern Europe
HIST 460 Europe Since 1945
PSCI 340 West European Political Systems

A SELECTION OF GERMANIC STUDIES COURSES
A-S 330-331 Study Abroad

ART 221 History of Art
ART 585 History of Baroque Art
ART 586 History of Baroque Art

ECON 484 Comparative Economic Systems

ENGL 410 Norse Literature and Mythology in Translation

GER 200-201 Intermediate German
GER 316 German Composition
GER 317 German Conversation
GER 322 German Life and Culture
GER 477 Foreign Study
HIST 346 Modern Germany
HIST 420 War in the Modern World
HIST 444 Early Medieval History
HIST 445 Later Medieval History
HIST 458 Europe 1919–1945

HIST 468 Topics in European History

HIST 565 Studies in Modern European History

MUS 270-271 Music History and Literature
MUS 572 Baroque Music
MUS 573 Classical Music
MUS 574 Romantic Music

PHIL 301 History of Modern Philosophy
PHIL 303 Existentialist Philosophers
PSCI 555 International Law
REL 305 The Christian Tradition

In addition to the above courses many departments offer seminars, independent study, and variable topics courses which may be included in this program when they concentrate on Germanic areas.

Romance Studies
Joseph G. Reish (Lee Honors College), Advisor

Romance Studies Program
Lee Honors College
387-3230

William A. Ritchie (Political Science), Advisor
European Studies Program
3412 Friedmann Hall
387-5698

Romance Studies is a coordinate major or minor program emphasizing an interdisciplinary approach to the study of France, Italy and Spain. Its aim is to present an integrated course of instruction in the arts, sciences, and philosophies of these modern-day nations linguistically and culturally linked to ancient Rome.

The program offers a variety of options to the student interested in broadening his/her knowledge of the cultural life of Western Europe. Courses may include music, political science, history, and Romance languages (French, Italian, and Spanish). A student selects a program of study in consultation with the Romance Studies advisor.
The **Coordinate Major** in Romance Studies (24 credit hours) is to be taken in conjunction with a standard academic major, such as accounting, English or dance. The **Coordinate Major in Russian Studies (15 credit hours)** may be pursued independent of any other University minor. Romance Studies enhances the student's overall academic program by giving it a global perspective. Knowledge about the world community can be useful in future employment and travel.

The **Coordinate Major** consisting of 24 credit hours must include three core courses as well as 8 credit hours (or equivalent knowledge) of a Romance language above the 100-101 basic level. To complete the major or minor the student chooses from the list of optional courses.

### CORE COURSES
- GEOG 383 Western and Southern Europe 3
- HIST 460 Europe Since 1945 3
- PSCI 340 Western European Political Systems 4

### OPTIONAL COURSES
- A S 389-391 Study Abroad 1–16
- A S 404–405 Foreign Studies, Seminars 1–6
- ANTH 343 Cultures of Europe 3
- ART 304-311 History of Art 6
- ART 585 History of Renaissance Art 3
- ART 586 History of 19th Century Art 3
- ART 589 History of 20th Century Art, 1900–45 3
- ART 590 History of 20th Century Art, 1945–present 3
- ECON 484 Comparative Economic Systems 3
- ENGL 442 Modern Drama 3
- FREN 200-201 Intermediate French 3
- FREN 316 French Composition 4
- FREN 317 French Conversation 4
- FREN 322 French Civilization 3
- FREN 328-329 Introduction to French Literature 6
- FREN 317 French Conversation 3
- FREN 318 French Civilization 3
- FREN 324-325 Cultural Studies 4
- FREN 328-329 Introduction to French Literature 6
- FREN 344 Summer Study in France 4
- FREN 477 Foreign Study 1–16
- HIST 452 The French Revolution and Napoleon 3
- HIST 456 Europe, 1815–1871 3
- HIST 457 Europe, 1781–1919 3
- HIST 458 Europe, 1919–1945 3
- HIST 468 Topics in European History 1–3
- HIST 565 Studies in Modern European History 3
- LANG 375 Foreign Literature in English Translation (French, German, and Spanish) 3
- MKTG 575 International Marketing 3
- MUS 270-271 Music History and Literature 6
- MUS 572 Baroque Music (1600–1750) 3
- MUS 573 Classical Music (1750–1800) 3
- MUS 574 Romantic Music (1800–1910) 3
- MUS 579 Operatic Literature 2
- PHIL 301 History of Modern Philosophy 3
- PHIL 303 Existentialist Philosophies 4
- PHIL 307 Phenomenology 4
- PSCI 541 Comparative Political Systems 3
- PSCI 549 Problems of Foreign Policy 3 or 4
- PSCI 555 International Law 3
- REL 100-101 Christian Tradition 4
- SPAN 200-201 Intermediate Spanish 6
- SPAN 316 Spanish Composition 3
- SPAN 317 Spanish Conversation 3
- SPAN 322 Life and Culture of Spain 3
- SPAN 325 Introduction to the Study of Spanish Literature 3
- SPAN 477 Foreign Study 1–16

In addition, departments frequently offer seminars, independent studies, and variable topic courses with direct emphasis on the political, economic and cultural life of France, Italy, and/or Spain. Students are strongly encouraged to participate in study abroad programs, many of which are sponsored by the Office of International Affairs.

### Russian and East European Studies
- James Butterfield (Political Science), Advisor 5351 Friedmann Hall 387-5636
- Dasha Nisula (Foreign Languages and Literatures), Advisor 5341 Friedmann Hall 387-4656

- **Russia** and **East European Studies**
  - **Russian** and **East European Studies** program is designed to complement study in any number of disciplines in the social sciences, humanities, and business. The area comprised of the former Soviet Union and the Eastern bloc has undergone profound changes since the end of the 1980s and continues to affect the course of world events on a massive scale.

The **coordinate major** and **minor** are designed to provide the student with an in-depth understanding of the cultural, social, economic and political character of the region, in addition to an intermediate level of accomplishment in the major language of the region, Russian.

A student who enrolls in this **Coordinate Major** or **Minor** in **Russian and East European Studies** must take at least 24 credit hours of coursework distributed as follows:

- **REQUIRED COURSES** —All students must take the following:
  - RUSS 200 Intermediate Russian I 4
  - RUSS 201 Intermediate Russian II 4
  - RUSS 310 Russian Civilization 3

- **ELECTIVE COURSES** —The remaining 13 hours are to be taken from among the following courses and/or others as approved by a Russian and East European Studies advisor.
  - ENGL 510 Special Topics in Literature: Russian Literature 3
  - GEOG 385 Central European, East European and Central Asian Economies 3
  - GEOS 384 Post-Soviet States 3
  - HIST 366 Soviet Union 3
  - HIST 465 Russian to 1855 3
  - HIST 466 Russia Since 1855 3
  - LANG 375 Russian Literature in Translation 3
  - PSCI 344 Russian and East European Politics 3
  - RUSS 316 Russian Composition 3
  - RUSS 317 Russian Conversation 3
  - RUSS 325 Introduction to the Study of Russian Literature 3
  - RUSS 344 Summer Study in the C. I. S. 3
  - SOC 531 Social Change in Eastern Europe 3

Occasionally, special courses are offered in various departments that qualify for elective credit in Russian and East European Studies. Consult one of the program advisors for information.

The **Minor** in **Russian and East European Studies** requires 15 credit hours as follows:

- **REQUIRED COURSES**
  - RUSS 100 Basic Russian I 4
  - RUSS 101 Basic Russian II 4

The balance of the courses must be taken from the electives listed under the major.

### STUDY ABROAD

Students are encouraged to take advantage of the semester program that WMU has established at Saratov State University in Russia. The WMU program at Saratov State University (SSU) offers qualified students the opportunity to study courses in Russian language and culture, and to live with a Russian family. For detailed information, consult the Russian and East European Studies advisors and the Director of Study Abroad in the Office of International Affairs about study abroad in Russian and other countries in Eastern Europe.

### LATIN AMERICAN STUDIES PROGRAM

#### COORDINATE MAJOR
- Claudio Mirman (Management), Advisor 3243 Schmider Hall 387-5839

Students enrolled in this coordinate major must select at least 24 hours from core and cognate courses available from the program advisor. Students must demonstrate intermediate-level proficiency in Spanish or Portuguese, and HIST 370, PSCI 343, and either GEOG 381 or GEO 362 are recommended.

Students wishing to enroll in the Latin American studies coordinate major should make this intention known to the Latin American studies advisor by no later than the first semester of their junior year—and preferably earlier.

#### Honors Certificate Program

A Certificate in Latin American Studies will be awarded from Western Michigan University on graduation to those who have completed the 24 hour coordinate major requirements as well as an oral and written examination by three members chosen from the Latin American Studies Committee. A grade point average of 3.50 and intermediate level proficiency in Spanish is a prerequisite in this program. The certificate is designated for students whose interest in Latin America goes beyond the usual academic program. The program is flexible involving independent studies and is, above all, tailored to each individual's interest.

#### Baccalaureate Writing Requirement

Students who have chosen the Latin American Studies coordinate major will satisfy the Baccalaureate Writing Requirement by successfully completing the designated course in their standard major.

#### MINOR

Fifteen semester hours taken from the list of Latin American studies courses are required for completion of a minor concentration in Latin American studies. HIST 370, PSCI 343, and either GEOG 381 or GEO 362 are recommended. Students enrolled in this minor are strongly urged to enrich their proficiency in Spanish especially through study abroad experiences.

Students wishing to enroll in this minor concentration should make this desire known to the Latin American studies advisor before courses are employed to satisfy this program are taken; records of the minor are maintained and verified by the Latin American studies advisor.

#### GOALS

The Latin American studies program offers students a combination of area specialized courses in geography, political science, economics, sociology, Spanish, history, religion, and anthropology to be linked to
Spanish Language courses and complemented by majors or minors in other fields. Especially appropriate choices would be Spanish, international business, tourism, or economics. In addition, secondary education certification would be especially relevant. Individual directed readings courses are also available on Latin American topics from a wide range of faculty.

A special feature of this program is the opportunity to spend a semester or year abroad in approved schools in Latin America or Spain or Portugal. Study abroad experiences are very valuable aids to linguistic fluency and cultural sensitivity.

For an up-to-date course listing, see the program advisor listed above.

CORE COURSES
A-S 330-331 Study Abroad 1-16
A-S 404-405 Foreign Studies
Seminars 1-6
ANTH 339 Culture of Latin America 3
ANTH 345 Topics in Anthropology (if appropriate) 3
EOCN 389 Latin America's Economy 3
GEOG 381 South America 3
GEOG 382 Mexico and the Caribbean (and Central America) 3
HIST 370 History of Latin America 3
HIST 471 History of Latin America Nations 3
MGMT 441 Managing in Latin America 3
PSCI 343 Latin American Political Systems 4
REL 313 Religion in America 4
REL 520 Methodological Studies in Religion 2-4
SOC 335 Modern Latin American Societies 3
SPAN 323 Life and Culture of Latin America 3
SPAN 477 Foreign Study* 1-16
SPAN 528 Survey of Spanish American Literature to 1500 3
SPAN 529 Survey of Spanish American Literature: Modernismo to Present 3
598 Special Studies (various departments) 3*
* Must consult Latin American Studies advisor.

STUDY ABROAD
Students are encouraged to take advantage of the semester program that WMU has established at the Universidad Autonoma de Queretaro (UAQ) in Mexico. The UWM program at UAQ offers qualified students the opportunity to study entirely in Spanish a variety of courses in business, the humanities, and the social sciences, and to live with a Mexican family. For detailed information, consult the Latin American Studies advisor, Spanish language faculty members and the Director of Study Abroad in the Office of International Affairs about study abroad in Mexico and other countries in Latin America.

The Medieval Institute
Paul E. Szarmach, Director and Advisor

Knowledge of medieval and Renaissance culture is being increasingly recognized as essential to an understanding of modern culture. The Medieval Institute was established by the University to develop and coordinate interdisciplinary programs in Medieval and Renaissance Studies. In addition to an undergraduate minor, the Institute offers a graduate program leading to an M.A. in Medieval Studies.

Western Michigan University has library resources and faculty to provide a good academic environment for the study of the Middle Ages and Renaissance. The Institute organizes and hosts the annual International Congress on Medieval Studies which has brought the University wide recognition throughout the United States, Canada, and Europe. The Institute's publishing program, Medieval Institute Publications, publishes significant current research in all areas of medieval studies. The headquarters of the Medieval Institute is in Walwood Hall.

MINOR PROGRAM
Students with an undergraduate minor must elect twenty hours, to include the following:
1. One history course chosen from the approved list.
2. One literature course chosen from the approved list.
3. One course in intellectual history, philosophy, or religion chosen from the approved list.
Electives from the approved list with the approval of the advisor.

APPROVED COURSES
Art
ART 220 History of Art (to the Renaissance) 3
ART 520 Independent Study in Art History 2-3
ART 563 History of Medieval Art 3
ART 565 History of Renaissance Art 3

Arts and Sciences
A-S 404 Foreign Studies Seminar: Social Sciences 1-6
A-S 405 Foreign Studies Seminar: Humanities 1-6

Comparative Religion
REL 305 The Christian Tradition 4
REL 306 The Jewish Tradition 4
REL 307 The Islamic Tradition 4
REL 500 Historical Studies in Religion (Christian Theology to 1500) 4
REL 410 Morphological and Phenomenological Studies in Religion (Great Islamic Thinkers) 4

English
ENGL 252 Shakespeare 4
ENGL 372 Development of Modern English 4
ENGL 452 Shakespeare Seminar 4
ENGL 510 Special Topics: Norse Literature and Mythology 4
ENGL 530 Medieval Literature 3
ENGL 532 English Renaissance Literature 3
ENGL 555 Studies in Major Writers (Dante, Chaucer) 3
ENGL 598 Readings in English 1-4

Foreign Languages and Literatures
French
FREN 550 Independent Study in French 1-3

German
GER 528 Survey of German Literature 3
GER 550 Independent Study in German 1-3
GER 559 History of the German Language 3

Latin
LAT 550 Independent Study in Latin 1-3
LAT 560 Medieval Latin 4

Spanish
SPAN 322 Life and Culture of Spain 3
SPAN 560 Independent Study in Spanish 1-3
SPAN 560 Studies in Spanish Literature 3

History
HIST 350 Ancient Greece and the Hellenistic World 3
HIST 351 Ancient Rome 3
HIST 360 Medieval World 3
HIST 440 Imperial Rome 3
HIST 441 Early Christianity 3
HIST 442 Byzantine Civilization 3
HIST 444 Early Medieval History 3
HIST 445 Later Medieval History 3
HIST 446 Renaissance Europe 3
HIST 447 The Reformation 3
HIST 498 Directed Research 3
HIST 550 Studies in Medieval History 3

Medieval Studies
MDVL 145 Heroes and Villains of the Middle Ages 3
MDVL 500 Interdisciplinary Studies in Medieval Culture 3

Music
MUS 270 Music History and Literature (early) 3
MUS 496 Readings in Music 1-4
MUS 517 Collegium Musicum 1
MUS 585 Medieval Music 2

Philosophy
PHIL 300 Ancient and Medieval Philosophy 3
PHIL 496 Independent Study 2-4
PHIL 598 Readings in Philosophy 2-4

Political Science
PSCI 350 Introduction to the History of Political Theory 1-3

Theatre
THEA 370 Theatre History 1-3

Medieval Courses (MDVL)
A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

MDVL 145 Heroes and Villains of the Middle Ages 3 hrs.
An interdisciplinary course designed to introduce beginning students to the medieval roots of the individual, social, and institutional ideals and values of modern Western culture as they are expressed and exemplified in the images of medieval heroes and their counterparts.

MDVL 500 Interdisciplinary Studies in Medieval Culture 3 hrs.
An interdisciplinary course organized around selected topics in Medieval and Renaissance Studies. The focus may be in a specific period (The Twelfth Century), a religious movement (Monasticism), a political structure (Venice-A Renaissance City-state), or the social fabric (Medieval Man: Image and Reality).

The overall aim of the course is to demonstrate to students and one needs to acquire a variety of skills to understand a single complex problem, and how to put traditional building blocks together in new ways. The course may be repeated for credit with a different topic.

MDVL 597 Directed Study 1-3 hrs.
Research on a selected topic in the field of Medieval Studies directed and supervised by a faculty member. Registration requires at least junior standing and approval by the Director of the Medieval Institute. May be repeated for credit. Prerequisite: Approval application required.
Science and Mathematics Teaching Minor

Advisor: College of Education
Office of Admissions and Advising
2504 Sangren Hall

This minor is open only to students enrolled in the elementary education curriculum. Transfer students will need to have their previous coursework in sciences and mathematics evaluated by a College of Education advisor prior to enrolling in this minor. This minor results in an endorsement in Science. To obtain information about an additional mathematics endorsement, contact the Department of Mathematics and Statistics.

Because of the interdisciplinary nature of this minor, one course must be selected from each of the three science areas.

A. REQUIRED SCIENCE (Select one course from each area. Courses approved for general education are marked with an *)

- Biological
  *BIOS 234 Outdoor Science 4
  SCI 170 Life Science for Elementary Educators I 3

- Earth Science
  *GEOL 130 Physical Geology 4
  *GEOG 105 Physical Geography 4

- Physical Science
  CHEM 200 Chemical Science in Elementary Education 4
  SCI 180 Physical Science for Elementary Education I 3
  SCI 231 Physical Science in Elementary Education II 4

B. REQUIRED MATHEMATICS

- MATH 151 Geometry for Elementary Teachers (Prerequisite: MATH 150) 3
- MATH 265 Probability and Statistics for Elementary Teachers 4

C. REQUIRED PRACTICA AND SEMINAR

- MATH 352 Teaching of Elementary Mathematics 3

Women's Studies Programs

Gwen Rasberg, Director
3327 Rood Hall
387–2510

Women's Studies courses are open to all students and may fulfill General Education, Liberal Education, major/minor, and elective requirements. The Women's Studies Program encourages all students to become familiar with their personal experiences and teaches approaches to thought and action that will prepare students to function effectively in a rapidly changing society. Courses in Women's Studies investigate the status of women in society, historically and at present, and analyze the processes of change in gender roles and social institutions. The organizing principle of the field is the concept of gender as a social construction. Equally important are the categories of ethnicity, race, class, age, sexual identity, and nationality, and gender is always investigated within this context.

The Women's Studies coordinate major requires a minimum of twenty-four credit hours in the major to be taken in conjunction with a disciplinary major. Course work in the Women's Studies major includes an interdisciplinary core consisting of an introductory course, intermediate courses focusing on research and theory, and culminating courses offering a capstone or practical experience. Further course work is to be selected from the list of approved Women's Studies electives in consultation with the Women's Studies advisor.

The Women's Studies minor brings an additional perspective to any field of study. It consists of sixteen hours of course work including two required Women's Studies courses and others to be selected from Women's Studies courses or the approved electives list.

In addition to the courses listed, students may pursue special interests and projects through independent studies developed in consultation with the Women's Studies advisor. Credit hours earned through independent studies are variable.

COORDINATE MAJOR (24 hours)

Required Courses

| WMS 510 Internship Seminar | 3 |

The following selected from WMS approved courses at the 300 or 400 level. At least:

- One course in Black Americana, Ethnic, or Non-western World (with departmental approval of topic)
- One course selected from the Women's Studies list in Humanities or Arts
- One course selected from the Women's Studies list in Social Sciences or Sciences.

MINOR (13 hours)

Required Courses

| WMS 200 Introduction to Women's Studies | 4 |

Electives to be taken from the WMS approved courses

WMS APPROVED ELECTIVES

For specific descriptions of the courses consult the departmental sections of the catalog. For approval of variable topics courses see Women's Studies advisor.

ANTH 345 Topics in Anthropology: Gender Issues (variable) 3
ANTH 360 Sex, Gender, and Culture (variable) 3
ANTH 545 Topics: Feminist Theory 3
ART 521 Women in Art 3
BAS 310 The Black Woman: Historical Perspective and Contemporary Status 3
BAS 360 Black Woman-Black Man Relationships 3
COM 479 Female/Male Interaction 3
ECON 309 Women and the Economy 3
ENGL 416 Women in Literature 3
FCS 210 Introduction to Human Sexuality 3
HIST 316 Women in American History 3
HIST 336 Women in European History 3
HIST 432 Women in America to 1870 3
HIST 433 Women in America Since 1870 3
MGMT 512 Women in Management: Male, Female, and Organizational Perspectives 3
PHIL 314 Philosophy and Public Affairs (variable) 4
PHIL 315 Race and Gender Issues (variable) 3
PSCI 270 Political Theory: Politics (variable) 1-3
PSCI 341 African Political Systems 4
PSCI 346 Women in Developing Countries 4
PSY 424 Introduction to Human Sexuality 3
REL 511 Women and Religion 4
SCI 133 Issues in Social Biology 4
SOC 190 Men and Women in Contemporary Society 3
SOC 479 Female/Male Interaction (Cross-listed with COM 479) 3
SOC 495 Topics in Sociology and Criminal Justice (variable) 3
SOC 510 Studies in Social Problems (variable) 3
SOC 563 Gender and Justice 3
SWRK 564 Special Studies: Women and Therapy (variable) 3

Women's Studies Courses (WMS)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

WMS 100 Media and the Sexes 3 hrs.

The course investigates how films, television, music videos and advertising present images of women and men to different audiences.
WMS 200 Introduction to Women's Studies
4 hrs.
This interdisciplinary core course in Women's Studies provides analytical frameworks for the study of gender and gender-defining institutions, focusing on women in American society. Course emphasizes approaches that recognize the diversity and similarity of women's experiences across class, racial and ethnic groups.

WMS 300 Working Women, Past and Present
3 hrs.
Analysis of the social significance of women's work in the United States. Emphasis is on the history of women's participation in the paid labor force, with consideration of women's changing role in the family and society.

WMS 310 Women and Social Institutions
3 hrs.
An interdisciplinary analysis of the impact of social institutions on women and women's impact on institutions. Focus is on change in such social institutions as education, law, medicine, the media, business and politics.

WMS 401 Foundations of Feminist Theory
3 hrs.
An investigation of various texts historically significant in the development of feminist concepts and theories. Includes texts from the past as well as the present. Prerequisite: WMS 200.

WMS 410 Special Topics in Women's Studies
3 hrs.
Variable topics in Women's Studies; may be repeated for credit when topic varies.

WMS 450 Male/Female Psychological Perspectives
3 hrs.
The course investigates the similarities and differences in male and female psychological perspectives in diverse segments of American society. The course provides a theoretical and practical analysis of the psychological behavior of individuals and social groups, and works toward descriptions adequate to the complexity of human beings and their institutions. Prerequisite: Junior or senior status.

The requirements for admission to 500 level Women's Studies classes is twelve hours of course work from the Women's Studies approved list (including WMS 200), and at least junior level status or departmental approval.

WMS 500 Seminar in Women's Studies
3 hrs.
A seminar offering variable topics that focus on special problems or issues in Women's Studies. Emphasis will be placed on developing skills in research approaches and on writing a research paper integrating the student's disciplinary training with investigation of an interdisciplinary problem in Women's Studies. May be repeated for credit when topics vary.

WMS 510 Internship Seminar
3 hrs.
Course offers an opportunity for the advanced student to apply theory and knowledge in Women's Studies to a professional or community project. Student will work under the supervision of a faculty advisor or a community sponsor. Opportunities available in areas such as television production, K-12 classroom presentations, and a variety of community organizations and agencies serving women and children.

WMS 550 Contemporary Feminist Theory
3 hrs.
An advanced course focusing on the analysis of American and European texts in feminist theory. The course will also consider the relation of these texts to other contemporary theoretical approaches. Prerequisite: WMS 400.

WMS 598 Readings in Women's Studies
1-4 hrs.
Individual study project available to the advanced student by permission of faculty advisor with departmental approval of project application.

World Literature Minor

Robert Felkel, Department of Foreign Languages and Literatures, Advisor
Edward Jayne, Department of English, Advisor

This is an interdisciplinary department program administered jointly by the Department of English and the Department of Foreign Languages and Literatures.

Studying the literature of other peoples of the world is one of the best ways to begin to know them. A great body of the world's literature is available for study in English translation in a variety of courses and departments at Western Michigan University. The world literature minor grows out of and is based on these courses.

This minor should be of value to students who have a general interest in literature and are curious about the world, especially that major part which does not have English as its literary language. Any student, including those majoring or minoring in English or Foreign Languages and Literatures, may elect the world literature minor. The minor should be of obvious value to students preparing to teach humanities or literature (at any of several levels), but education curricula students should understand that this minor is not a teaching minor.

The world literature minor can provide useful background to students interested in foreign affairs, law, politics, journalism, mass communication, and theatre. It should also be of interest to students in business, scientific, and engineering curricula who wish to do a minor outside their main field.

The minor should interest students who, whatever their career plans or major, wish the varied view and mixture of experiences of an interdisciplinary program. Also, the wide range of electivespossible should make the minor attractive to students who would like the opportunity to help shape their own programs.

Prerequisites listed for any of the courses in this minor will be waived. However, students with questions about the advisability of taking courses for which there are prerequisites should consult one of the minor advisors.

Transfer students should consult the minor advisor to determine the applicability of courses taken at other colleges. Minor slips are required. Both the English and the Foreign Languages and Literatures Departments have world literature minor advisors with regular office hours, either one of whom may issue minor slips. For information, stop at or call the English Department office (620 Sprau 387-2570) or the Department of Foreign Languages and Literatures (410 Sprau 387-3001).

Requirements

1. Six courses numbered 300 or above, one course from the following list:

   - ENGL 312 Western World Literature
   - OR 313 African Literature
   - OR 314 African Literature

2. Two or three courses (i.e. at least eight semester hours) selected from the following list:

   - ENGL 110 Literary Interpretation
   - ENGL 210 Film Interpretation
   - ENGL 252 Shakespeare
   - ENGL 312 Western World Literature

3. Three courses selected from the following list:

   - LANG 350 Classical Greek and Roman Mythology
   - LANG 375 French Literature in Translation
   - LANG 375 German Literature in Translation
   - LANG 375 Russian Literature in Translation
   - LANG 375 Spanish-American Literature in English Translation
   - LANG 375 Classical Literature in English Translation

Permissible Substitutions for Required Courses

With the approval of a minor advisor, students may:
1. Substitute one of the following courses for one course listed above in either Requirement 2 or Requirement 3:

   - THEA 370, 371, Theatre Backgrounds I, II

   OR

   - THEA 570 Devel. of Theatre Arts

2. Substitute an advanced literature course in a foreign language for one of the courses listed above in either Requirement 2 or Requirement 3.

3. Substitute a course or courses (maximum of 4 hours), not presently listed in the catalog, which may be offered as a special or temporary course and which is deemed by the advisors appropriate to the World Literature Minor.
AMERICAN STUDIES PROGRAM
See "Interdisciplinary Programs" in the College of Arts and Sciences.

ANTHROPOLOGY
Robert Sundick, Chair
Robert Anemone
James Clifton
Linwood Cousins
William Cremin
Arthur Helweg
Erika Loefler
Ann Miles
Rosario Montoya
Krishnakali Majumdar
Michael Nassaney
Tal Simmons
Danielle Wozniak
Alien Zagarell

The Program
The anthropology program is designed to provide students with an understanding of the human condition based on the integration of historical, cultural, and biological perspectives. Through course offerings, students will (1) broaden their familiarity with diverse ways of human life, past and present; (2) gain knowledge of human adaptation and variation from our earliest ancestors to modern peoples; (3) be exposed to employment opportunities in a variety of applied fields; and (4) be prepared for graduate study in anthropology.

All major and minor programs must be approved by one of the department's undergraduate advisors. Students are expected to meet with their advisor at least once every semester, preferably prior to selecting courses for the following semester. Students applying to graduate school in anthropology are encouraged to meet with their advisor two semesters before they plan to graduate for assistance in selecting courses for the following semester.

MAJOR
A major in anthropology consists of a minimum of 34 hours of anthropology courses and must include:
1. ANTH 210, ANTH 240, and ANTH 250
2. one writing intensive course in anthropology as designated in the catalog
3. six (6) additional hours of course work at the 400-level or above
4. no more than three (3) hours of course work at the 100 level
5. a grade of "C" or better in every anthropology class counted toward the major

A student with a major in anthropology is strongly encouraged to take a broad range of courses in all three subdisciplines of anthropology: archaeology, cultural anthropology and biological anthropology.

MINOR
A minor in anthropology consists of a minimum of 21 hours of anthropology courses and must include:
1. ANTH 210 or 110
2. ANTH 250 or 100
3. ANTH 240
4. six (6) hours of course work at the 400-level or above
5. no more than six (6) hours of course work at the 100 level
6. a grade of "C" or better in every anthropology class counted toward the minor

No more than twelve (12) hours of anthropology classes may be transferred for the major; no more than nine (9) hours of anthropology classes may be transferred for the minor.

BACCALAUREATE WRITING REQUIREMENT
Students who have chosen the anthropology major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

ANTH 400 Midwest Prehistory
ANTH 440 Ethnography
ANTH 450 Primate Behavior and Ecology
ANTH 501 Rise of Civilization
ANTH 520 Social Science Theory
ANTH 552 Forensic Anthropology

Anthropology Courses (ANTH)
A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

ANTH 100 Human Origins
3 hrs.
The nature, causes and prospects of being human as seen through an examination of the events and processes of biocultural evolution.

ANTH 110 Lost Worlds and Archaeology
3 hrs.
An introduction to the archaeological record relating to the development of culture from its stone age origins through the development of village agriculture and the beginnings of urban life.

ANTH 120 Peoples of the World
3 hrs.
A survey of the rich variety and range of non-Western peoples throughout the world, with emphasis on the role of culture in shaping human thought and behavior.

ANTH 140 Anthropology in Action
3 hrs.
This course applies anthropological knowledge to the study of sociocultural problems of contemporary life and provides an analytic process relevant to the needs of modern multicultural societies. It includes basic concepts, theoretical approaches, and methodologies useful to the discussion of potential solutions to world problems.

ANTH 210 Introduction to Archaeology
3 hrs. Fall, Winter
The science of archaeology is explored in terms of the methods and concepts used to discover and interpret past human behavior. Select portions of the Old and New World prehistoric cultural sequences provide the frame of reference.

ANTH 240 Principles of Cultural Anthropology
3 hrs. Fall, Winter
An introduction to the basic concepts, theoretical approaches, and methodological strategies employed in the study of traditional and contemporary sociocultural systems throughout the world. Attention given to research techniques and the insights derived from detailed case studies and cross-cultural comparisons.

ANTH 250 Introduction to Biological Anthropology
4 hrs. Fall, Winter
A survey of physical anthropology: evolutionary theory; hominid and primate evolution; the living primates, human osteology, human genetics and population variation.

ANTH 300 The Prehistory of North America
3 hrs.
A survey of the major prehistoric cultures of North America north of Mexico, including American Indian origins, early big-game hunters of the Great Plains, ecological adaptations of the Archaic stage, the complex
ANTHROPOLOGY 89

burial mound and temple mound cultures of the East, and prehistoric Pueblo cultures of the Southwest. Prerequisite: ANTH 110 or 210.

ANTH 303 Historical Archaeology
3 hrs.
Investigates the role of the material world in the colonial encounter and the development of capitalism. The course will integrate theoretical, methodological and substantive issues with an emphasis, though not exclusive focus, on North America. Prerequisite: ANTH 210 or consent of instructor.

ANTH 306 Archaeology of Civilization
3 hrs.
The course discusses the forces leading to the rise of the state and the emergence of centers of civilization. It investigates state emergence cross-culturally, examining shared characteristics and innovative pathways, social accomplishments and social costs, New World and Old World, far-fung and more recent past. Prerequisite: ANTH 210 or consent of instructor.

ANTH 309 Archaeology of Inequality and Resistance
3 hrs.
The course examines the dynamics of historical and archaeologically known forms of control and domination based upon status, class, gender and ethnicity. The course focuses on the social relation of oppressor and oppressed, the ideologies of control and the forms of social resistance. Prerequisite: ANTH 210 or consent of instructor.

ANTH 310 Environmental Archaeology
3 hrs.
An examination of the objectives and methodologies of environmental archaeology in seeking to identify and explain the interrelationships between human communities and their biophysical environments. Prerequisite: ANTH 210 or consent of instructor.

ANTH 332 Topics in World Culture Areas
3 hrs.
Studies of the major non-Western traditions of the world, such as those of North Africa and the Middle East, Sub-Saharan Africa, and Asia. Each offering covers major cultural configurations, e.g., rural-urban, peasant-nomad, great civilizations-tribal organizations. Emphasis will be on the unity and diversity tradition, and changes of peoples and cultures in the developing world. Topics will be announced each semester. May be repeated for credit with different topics.

ANTH 339 Cultures of Latin America
3 hrs.
A problem oriented approach to the study of peoples and cultures in Latin America, dealing with rural, urban, peasant, and elite groups. Topics such as social structure, religion, and culture change may be included.

ANTH 340 Cultures of Asia
3 hrs.
A problem oriented approach to the study of peoples and cultures of Asia, dealing with rural, urban, peasant, and elite groups. Topics such as social structure, religion, and culture change may be included.

ANTH 341 Cultures of Africa
3 hrs.
A problem oriented approach to the study of peoples and cultures of Africa, dealing with rural, urban, peasant, and elite groups. Topics such as social structure, religion, and culture change may be included.

ANTH 342 Cultures of Middle East
3 hrs.
A problem oriented approach to the study of peoples and cultures of the Middle East, dealing with rural, urban, peasant, and elite groups. Topics such as social structure, religion, and culture change may be included.

ANTH 343 Cultures of Eastern Europe
3 hrs.
A problem oriented approach to the study of peoples and culture of Europe, dealing with rural, urban, peasant, and elite groups. Topics such as social structure, religion, and culture change may be included.

ANTH 344 Indians and Eskimos
3 hrs.
A survey of Native American cultures, from the initial peopling of the New World by immigrants from Asia into the period of exploration and colonization of North America by Europeans. Various societies from selected areas will be examined to illustrate both the ingenuity and diversity of human responses to changing environmental conditions over time and in space.

ANTH 345 Topics in Anthropology
3 hrs.
An intensive study of selected topics or emerging fields in anthropology. Topics will vary and be announced each semester. May be repeated for credit with different topics.

ANTH 347 Ethnicity/Multiculturalism
3 hrs.
A study of the diverse perspectives of the many different ethnic groups in the United States. In the course we will analyze the social tensions, group dynamics, and consequences resulting from the cultural and ethnic diversity existing here. Some of the discussion will focus on the medical, legal, social, and political institutions that exist in a multicultural environment. Prerequisite: ANTH 120 or 140 or 240.

ANTH 349 Power and Conflict
3 hrs.
This course takes an anthropological approach to the study of power, dominance, control, and conflict in various forms and in a number of different contemporary sociocultural contexts. Prerequisite: ANTH 240 or consent of instructor.

ANTH 351 Human Osteology
4 hrs.
A study of the human skeleton. Emphasis will be on morphological and metrical variation, odontology, paleopathology, and reconstruction of the individual and the population. Prerequisite: ANTH 250 or consent of instructor.

ANTH 360 Sex, Gender, Culture
3 hrs.
Sexual differences around the world are culturally elaborated into gender-specific behaviors, normed relations between gender-coded people and objects, and various ideologies supporting the differences. In this course, biological and cross-cultural data will be used to explore the foundation of this process and its social, cultural, and psychological consequences of gender coding on men and women in different cultural settings.

ANTH 380 Highlighting Anthropology
1–3 hrs.
Topics of special interest to people outside anthropology will be emphasized using the workshop or short course format. Examples include: Ancient Americans; Archaeology and You; Forensic Anthropology; Michigan at the Dawn of History, 1–3 credit hours. Credit cannot be counted toward the major or minor in anthropology. (May be repeated for credit with a change in topic).

ANTH 399 Ethnography
1–3 hrs.
Examines various methods, problems, and issues in ethnographic research and writing, as well as the interaction between ethnographic practice and the development of anthropological theory. Course meets the baccalaureate-level writing requirement.

ANTH 400 Early Technologies
3 hrs.
A course deals with the analysis and interpretation of early technologies and technological organizations. The course will study the relationship to social, political, and economic dimensions of cultural systems. Prerequisite: ANTH 210 or consent of instructor.

ANTH 405 Archaeology of the Great Lakes
3 hrs.
A study of the prehistory and development of the baccalaureate-level writing requirement. Prerequisite: ANTH 210 or consent of instructor.

ANTH 406 Ethnography
1–3 hrs.
Examines various methods, problems, and issues in ethnographic research and writing, as well as the interaction between ethnographic practice and the development of anthropological theory. Course meets the baccalaureate-level writing requirement.

ANTH 407 Field Methods in Physical Anthropology
1–3 hrs.
In-depth study of one or more of the special methods of analysis used in physical anthropology. Examples include: paleoanthropology, paleoecology, bioarchaeology, zooarchaeology. Course meets the baccalaureate-level writing requirement.

ANTH 408 Primate Behavior and Ecology
1–3 hrs.
The course will cover the behavior and ecology of primates. Topics will include primates, taxonomy, constraints of body size on locomotion and diet, and primate social behavior in an ecological context. The behavioral ecology of individual species will be explored through readings, films, and when possible, direct behavior observation at a zoo. Course meets the baccalaureate-level writing requirement.

ANTH 409 Field School
1–3 hrs.
A field school is designed for students who wish to gain a greater depth of knowledge in a particular area (e.g., southwest Michigan, Lower Mississippi Valley). Participants will receive instruction in collecting and evaluating background information, creating a research design and implementing archaeological field-work (i.e., logistics, site location survey, mapping, recovering objects from archaeological contexts), and processing and curating data for analysis and interpretation in the laboratory. May be repeated with permission of instructor, but does not count toward the anthropology major or minor twice. Prerequisite: ANTH 210 or consent of instructor.

ANTH 410-419 Special Topics
1–3 hrs.
A study of a particular topic of interest. The student should have some familiarity with the topic in advance. The purpose of the course is to allow the student to gain a greater depth of knowledge in a topic.
which is not offered in a formal course. 

Prerequisites: Junior or senior standing and a declared major or minor in anthropology.

ANTH 499 Independent Research in Anthropology 1-3 hrs.

Students may contact a faculty member to conduct research under the guidance of the faculty member. Before the initiation of the research a literature search and a written proposal must be prepared. At the conclusion of the research project, a written report will be submitted to the guiding faculty member.

Prerequisites: Junior or senior standing and a declared major or minor in anthropology.

All 500-level courses

The prerequisites to 500-level courses are: Junior status and 12 hours of coursework in anthropology, including the specified prerequisite for each class.

ANTH 500 Topics in Archaeology 3 hrs.

A consideration of the prehistory of a particular geographic area (e.g. the southwestern United States, the Circumpolar) or of selected theoretical problems (e.g. artifact typology, prehistoric ecology). The topic to be studied will be announced each semester. (May be repeated for credit.) Prerequisite: ANTH 110 or 210.

ANTH 501 The Rise of Civilization 3 hrs.

The archaeological sequence in one or more of the nuclear centers of prehistoric civilization will be considered in some detail. The course may focus intensively upon one area (e.g. the Near East or Meso-America), or it may give equal emphasis to two or more areas in a comparative framework. Course meets the baccalaureate-level writing requirement. Prerequisites: Junior standing, 12 hours of anthropology and ANTH 210 or consent of instructor.

ANTH 502 The Origins of Agriculture 3 hrs.

An intensive study of the human transition from hunting-gathering to cultivation during the post-Pleistocene period. Topics to be treated include: both archaeological and botanical models to explain these processes; the comparison of agricultural systems in various parts of the world; the geographic distribution and biosystematics of selected cultivars; and the cultural systems which have arisen from the economic foundations of plant domestication. Prerequisite: Junior standing, 12 hours of anthropology, and ANTH 110 or 210.

ANTH 505 Social Archaeology 3 hrs.

Investigates the mechanisms of social, political, and economic integration within human societies by analyzing and interpreting the material world. Focus will vary between communal and complex social forms. Prerequisites: Junior standing, 12 hours of anthropology, and ANTH 210 or consent of instructor.

ANTH 506 The Archaeology of Gender 3 hrs.

Gender constructs, a critical organizing principle for human interaction, are becoming an important focus for archaeological investigation. This course will explore the multiple ways archaeologists have attempted to use gender relations as a means to gain insights into individual and social worlds. We will follow gender as an archaeological concept historically and conceptually. Participants will explore the attempts and successes of a gendered understanding of the archaeological record. Prerequisites: ANTH 210, junior standing, and 12 hours in anthropology.

ANTH 520 Social Science Theory 3 hrs.

The philosophical/theoretical and conceptual foundations of the social sciences in general will be discussed with special emphasis on contemporary anthropology, including traditional as well as post-structural ways of thinking. Course meets the baccalaureate-level writing requirement. Prerequisites: Junior standing, 12 hours of anthropology, and ANTH 240 or social science equivalent.

ANTH 531 Medical Anthropology 3 hrs.

This course starts with the premise that illness is as much a cultural as it is a biological phenomenon and explores the ways in which different societies, including our own, perceive and manage illness and disease. The primary focus of the course is to understand the intersection of cultural, social, and political variables in the experience of illness and the practices associated with healing. Specific topics include: ethnomedicine, spiritual healing, primary health care in the developing world, the symbolism of modern medicine, the political economy of health care and AIDS, and inequality. Prerequisites: Junior status, 12 hours of anthropology, and ANTH 240 or consent of instructor.

ANTH 542 Development Anthropology 3 hrs.

An examination of the role of social science when applied to the solution of specific development problems, particularly in the Non-Western World. Explores a wide range of applied or adaptive research techniques designed to insure that directed social change actually benefits those for whom it is intended. Also surveys numerous research strategies, methods, and constraints involved in conducting research for national or international development agencies. Prerequisites: Junior standing, 12 hours of anthropology, and ANTH 240 or consent of instructor.

ANTH 543 Art and Culture 3 hrs.

Various theories about creativity and about interrelationships among art, artists, and culture will be explored in cross-cultural perspective with examples drawn mostly from so-called "primitive art". Discussions will cover the biology and evolution of art; cross-cultural aesthetics; sociocultural contexts such as issues of gender, power, patron-client relations; material culture; semiotics; ritual and healing; and acculturation processes in arts and crafts. Prerequisites: Junior standing, 12 hours of anthropology, and ANTH 240 or consent of instructor.

ANTH 545 Topics in Sociocultural Anthropology 3 hrs.

An intensive study of the cultures of an area of the world or selected problems. Topics will be announced each semester. (May be repeated for credit.) Prerequisites: Junior standing, 12 hours of anthropology, and ANTH 240 or consent of instructor.

ANTH 550 Human Evolution 3 hrs.

This course is designed to provide students with an intensive examination of the human fossil record from the initial divergence of the hominid lineage to the origin of modern Homo sapiens. Emphasized in this course will be paleontological theory, issues relating to species definition and recognition, functional anatomical complexes, adaptive processes, and human morphological variation. Prerequisite: ANTH 250, junior standing and 12 hours anthropology.

ANTH 552 Forensic Anthropology 3 hrs.

The study of biological anthropology as it applies to the legal system. Primary emphasis will be on skeletal and dental identification, facial reconstruction, and analysis of time since death. Courtroom procedures and responsibilities of the expert witness in the legal system will be covered. Course meets the baccalaureate-level writing requirement. Prerequisites: Junior standing, 12 hours of anthropology, and ANTH 250 or consent of instructor.

ANTH 555 Topics in Biological Anthropology 3 hrs.

A consideration of the biological relationships of specific population groups or general problems in human biology (e.g. human genetics, human growth and constitution, palaeopathology, dental anthropology). Topic will be announced each semester. May be repeated for credit. Prerequisites: Junior standing, 12 hours of anthropology, and ANTH 250 or consent of instructor.
ASIAN AND MIDDLE EASTERN LANGUAGES

Dr. Hidoko Abe, Chair
Dr. Timothy Light
Dr. Xiaojun Wang

The department offers undergraduate instruction in the principal non-European languages: Arabic, Chinese, and Japanese. It collaborates with other University units requiring non-European language instruction for students in their programs and connects students with opportunities for advanced study through study-abroad programs or through intensive summer programs. The department also conducts research into language pedagogy, language acquisition, and applied linguistics with the aim of improving techniques of instruction in non-European languages.

The department was established to meet three pressing needs:
1. The needs of students who are asking for languages that have not been offered in traditional language programs
2. The needs of WMU units whose commitments to international studies have led them to require students to learn such languages
3. The needs of those teaching non-European languages for improved pedagogical methods and tools

Only courses in which a grade of "C" or better is obtained can be counted toward a major or minor.

MINOR

JAPANESE MINOR
Twenty-three hours including 100-level (basic) courses or equivalent.

Arabic (ARAB)

(not offered 1997–98)

ARAB 100 Basic Arabic I
4 hrs.
Fundamentals of modern Arabic with emphasis on listening and speaking skills.

ARAB 101 Basic Arabic II
4 hrs.
Continuation of ARAB 100. Prerequisite: ARAB 100 or equivalent.

ARAB 200 Intermediate Arabic I
4 hrs.
The development of written and spoken expression in modern Arabic with an emphasis on grammar review. Prerequisite: ARAB 101 or equivalent.

ARAB 201 Intermediate Arabic II
4 hrs.
Continuation of ARAB 200. Prerequisite: ARAB 200 or equivalent.

Chinese (CHIN)

CHIN 100 Basic Chinese I
4 hrs.
Fundamentals of Chinese. Background and practice in listening comprehension, speaking, reading and writing.

CHIN 101 Basic Chinese II
4 hrs.
Continuation of CHIN 100. Prerequisite: CHIN 100 or equivalent.

CHIN 200 Intermediate Chinese I
4 hrs.
The development of spoken and written expression in Chinese. Review of fundamental grammar and skills. Prerequisite: CHIN 101 or equivalent.

CHIN 201 Intermediate Chinese II
4 hrs.
The continued development of spoken and written expression in Chinese. Readings and discussions of civilization and culture materials. Prerequisite: CHIN 200 or equivalent.

Japanese (JPNS)

JPNS 100 Basic Japanese I
4 hrs.
Acquisition of beginning level communicative competence of the Japanese language in all four skills—speaking (able to handle some survival situations); listening (able to understand simple everyday conversation with repetition); writing (able to write short memos, simple letters and journals); and reading (able to read all hiragana and katakana).

JPNS 101 Basic Japanese II
4 hrs.
Continuation of JPNS 100. Acquisition of another 75 kanji. Prerequisite: JPNS 100 or equivalent.

JPNS 200 Intermediate Japanese I
4 hrs.
Continuation of JPNS 101. Achievement of intermediate level communicative competence of the Japanese language in four skills.

JPNS 201 Intermediate Japanese II
4 hrs.
Continuation of JPNS 200. Learning of another 75 kanji. Completion of basic Japanese grammar and structures. Prerequisite: JPNS 200 or equivalent.

JPNS 316 Japanese Composition
3 hrs.
Fundamental skills of Japanese writing both in hand-writing and on the computer. Study of more complex Japanese grammar and structures. Acquisition of another 100 kanji. Prerequisite: JPNS 201 or equivalent.

JPNS 317 Japanese Conversation
4 hrs.
Intensive study of speaking skills. Emphasis is upon increasing the student's command of conversational Japanese. The course includes role play, film viewing with discussion, making speeches, debates, and other communicative activities. Prerequisite: JPNS 201 or equivalent.

JPNS 451 Advanced Japanese Language
3 hrs.
Advanced study of conversation, composition, or reading in Japanese. Topic may vary from semester to semester. May be repeated for credit with change of topic. Prerequisites: JPNS 316 and 317 or equivalent.

JPNS 477 Foreign Study
1-16 hrs. Fall/Winter
1-8 hrs. Spring/Summer
Student participation in departmentally approved program of study abroad. Repeatable for credit up to 32 credit hours. Prerequisite: Prior permission of departmental advisor and chairperson.

500-level courses may be taken only by advanced undergraduate students. Advanced undergraduate students are defined as those who have satisfactorily completed a minimum of four courses, or equivalent, applicable towards a minor in any one language. Each course, however, may have more specific and/or additional prerequisites.

JPNS 550 Independent Study in Japanese
1–3 hrs.
Directed individual study of a specific topic in Japanese language, literature, or culture. May be repeated for credit. Prerequisite: Completion of four courses in Japanese or equivalent; minimum grade point average of 3.0 in Japanese; departmental approval required.
BIOLOGICAL SCIENCES

Leonard J. Beving, Chair
Bruce Bejcek
Christine Byrd
David P. Cowan
Ewoud B. Ehri
Robert C. Eisenberg
Alexander J. Enyedi
Karm Essani
Gyula Ficior
Leonard C. Ginsberg
Edgar Inselberg
William F. Jackson
John A. Jellies
David Karowe
Stephen B. Malcolm
Jay C. Means
Richard W. Pippen
David Reinhold
Silvia Rossbach
John Spitsbergen
Susan Stapleton

An understanding of the biological sciences is essential, if we are to solve the pressing social, environmental, and economic problems of our times. The Department of Biological Sciences offers major and minor programs designed to provide today's student with effective training and knowledge in various areas of the life sciences and medicine. The Biology Major explores the broad spectrum of the life sciences with opportunities to study botany, zoology, ecology, or physiology. Students completing this major should be prepared for one or more of the following goals: (1) graduate study toward an advanced degree in the Biological Sciences, i.e. M.S., or Ph.D.; (2) employment in state or federal government service, industry, laboratory or technical work; (3) advanced study at the professional level. The Biomedical Sciences Major is designed to explore the human, molecular, and cellular aspects of the life sciences with the opportunity to study cell biology, genetics, microbiology, molecular biology, neurobiology, and physiology.

The specific objectives of the Biomedical Sciences Minor include: (1) providing basic training for employment in clinics and basic research laboratories, industrial laboratories and state and federal agencies, (2) producing highly qualified students for advanced training at the graduate-professional levels, i.e. M.S., Ph.D., M.D., D.D.S., D.O.M., D.P.M., or D.V.M.; and (3) professional training for such clinical areas as physician assistant, pharmacy, and physical therapy. For additional career options see the Undergraduate Advisor.

Students interested in pursuing a teaching career in the biological sciences should follow the special guidelines for the Biology Major-Secondary Education Curriculum section below.

A Minor in Biological Sciences is also available.

Students are invited to contact the department offices (Biology, Room 426 Hoekje Hall, 616-387-5600; or Biomedical Sciences, Room 5332 McCracken Hall, 616-387-5625) for information concerning the Biology and Biomedical Sciences majors and minors.

All major and minor programs are to be pursued under the direction of and with the approval of the Undergraduate Advisor. Students interested in a major or minor should contact the Undergraduate Advisor in Room 326 Hoekje Hall (616-387-5617) during freshman or transfer orientation and regularly thereafter. Courses taken without the approval of the Undergraduate Advisor may not be acceptable for major or minor credit.

In addition to planning your program with the Undergraduate Advisor, we also urge you to consult with the Preprofessional Advisor (in the College of Arts and Sciences) at an early stage, to determine any special requirements or variations from the above that may pertain to particular medical or dental schools to which you are planning to apply for admission. Only departmental courses in which a grade of "C" or better is obtained may be counted towards a major or minor in Biological Sciences.

BACCAULAUREATE WRITING REQUIREMENT

Students who have chosen the Biology major, Biomedical Sciences major and Biology major in Secondary Education can satisfy the Baccalaureate Writing Requirement by successfully completing BIOS 319 or 350 or one of the capstone courses BIOS 497, BIOS 499, or BIOS 404 (Secondary Education only).

Biology Major

REQUIREMENTS

A Major in Biology consists of a minimum of 32 credits of Biological Sciences courses, as well as cognates in chemistry, physics and mathematics. This course work includes two introductory courses, four intermediate level courses, two advanced interest courses, and a capstone experience. Only three credit hours may be BIOS 498 and/or 499.

INTRODUCTORY COURSE REQUIREMENTS

Bios 150 and 151

INTERMEDIATE LEVEL COURSES

Bios 250, 301, 319 or 350, 202 or 312

TWO ADVANCED INTEREST COURSES

FROM THE FOLLOWING:

BIOS 312, 415, 425, 427, 439, 441, 455, 456, 498, 499, 516, 524, 528, 529, 530, 534, 536, 537, 542, 547, 549, 553, 557, 574, 597 (minimum 6 hrs.).

CAPSTONE EXPERIENCE

Bios 497 or 499

COGNATES

CHEM 101 or 102, 120, 375 with 376, 377 with 378, 355, 356, 8 hours starting at MATH 118 or above, MATH 122, 211, 240, 232 and one advanced level course, such as BIOM 531 or BIOS 507.

Biology Major—Secondary Education Curriculum

REQUIREMENTS

A major in secondary education (SED) consists of a minimum of 36 hours of BIOS courses. The major includes two introductory courses, six intermediate level courses, two advanced interest courses, one advanced interest course and a capstone course of BIOS 404. Only three credit hours may be BIOS 498 and/or 499.

INTRODUCTORY COURSES

Bios 150 and 151

INTERMEDIATE LEVEL COURSES

Bios 202, 211, 250, a Microbiology course (240, 319 or 350), and BIOS 301.

ONE ADVANCED INTEREST COURSE FROM THE FOLLOWING:

Bios 312, 425, 427, 439, 441, 455, 456, 498, 499, 516, 524, 528, 529, 530, 534, 536, 537, 542, 547, 549, 553, 557, 574, 597 (minimum 3 hrs.).

CAPSTONE EXPERIENCE

Bios 404

COGNATES

CHEM 101 or 102, 120, 375 with 371 or 375 with 378, 355, 356, MATH, a calculus course (122 or 200), a statistics course (MATH 366 or 260), PHYSICS, 2 semesters with labs.

Biomedical Sciences Major

REQUIREMENTS

A major in Biomedical Sciences (BMS) consists of a minimum of 34 credits of course work relevant to the major. This course work includes two introductory courses, four intermediate level courses, two advanced interest courses, and a capstone experience. Only three credit hours may be BIOS 498 and/or 499.

INTRODUCTORY COURSES

Bios 150 and 151

INTERMEDIATE LEVEL COURSES

Bios 211, 250, 312 and 350.

TWO ADVANCED INTEREST COURSES

FROM THE FOLLOWING:

BIOS 425, 498, 499, 507, 512, 518, 520, 524, 531, 534, 536, 537, 569, 560, 561, 570, 574, 597 (minimum 6 hrs.).

CAPSTONE EXPERIENCE

BIOS 497 or 499

COGNATE REQUIREMENTS

CHEM 101 or 102, 120, 375 with 376, 377 with 378, 355, 356, MATH, a calculus course (122 or 200), a statistics course (MATH 366 or 260), PHYSICS, 2 semesters with labs.

Biological Sciences Minor

The Biological Sciences Minor consists of a minimum of 20 credits of biological science courses. Twelve of these credits must be from 200 or higher level courses. Cognate requirements are CHEM 101 or equivalent. Minors in health related fields can take the following courses to fulfill a minor: BIO 112, 105, 211, 240, 232 and one advanced level course, such as BIOM 531 or BIOS 507. Minors interested in other areas of biology are advised to take BIOS 150 and 151, in order to have a greater selection of courses.

Biology Minor—Secondary Education Curriculum

The Biology Minor-SED curriculum consists of a minimum of 24 hours of course work in Biological Sciences including BIOS 150, 151, 202, 250, 301, a Physiology course (240, 319 or 350) and 404. Cognate requirements include: CHEM 101 or 102 and 120, MATH 118 or 122 and 200.

Science and Mathematics Teaching Minor

The Department of Biological Sciences participates in the science and mathematics teaching minor for students in the elementary education curriculum (EED). For a full description of the program, consult its listing under the "Interdisciplinary Programs" section in the College of Arts and Sciences.

Transfer Students

A minimum of 15 hours of course work in the Biology Major, the Secondary Education
Biological Sciences Courses (BIOS)

A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

BIOS 105 Environmental Biology
3 hrs. Fall, Winter
An ecology course will examine the relationships among living organisms, including man, and their environment. Emphasis will be placed on basic ecological principles. Credit does not apply toward a Biology or Biomedical Sciences major. Credit applies for Biological Sciences minors and Liberal Education Area 5. Credit applies for General Education Area VI if taken with BIOS 110.

BIOS 110 Biology Laboratory
1 hr. Fall, Winter
Designed as a companion to BIOS 105 or BIOS 112 to fulfill Natural Sciences Area VI requirement. Biology Laboratory provides hands-on experiences in environmental and human biology. Experiments will involve the use of scientific methodology and instrumentation to collect, analyze, interpret data, and draw conclusions about life processes, basic biological principles, as well as the interaction of people and their environment. Corequisite or prerequisite: BIOS 105 or BIOS 112. Credit not acceptable for Biological Sciences majors but applies toward a minor in biology.

BIOS 112 Principles of Biology
3 hrs. Fall, Winter
A course designed to provide a natural science foundation for BIOS minors, allied health majors, and to fulfill liberal/general education requirements. Foundation concepts in cell biology, human anatomy and physiology, botany, human genetics, microbiology, and ecology are presented for students who do not have strong biology and chemistry backgrounds. Credit does not apply for Biological Sciences majors but applies toward a minor in biology.

BIOS 150 Molecular and Cellular Biology
4 hrs. Fall, Winter
This is the first in a two-semester introductory biology sequence for majors and minors in the Biological Sciences Department. The course covers basic concepts of molecular and cellular biology and physiology.

BIOS 151 Organismal Biology
4 hrs. Fall, Winter
This is the second course in a two-semester introductory biology sequence for majors and minors in the Biological Sciences Department. The course covers basic concepts of evolution, ecology, and animal behavior. Corequisite: BIOS 150.

BIOS 191 Introduction to Human Anatomy and Biology
4 hrs. Winter
This is a lecture and laboratory course providing an overview of human anatomy and some basic scientific principles including a brief introduction to cell biology and genetics. Credit does not apply to Biological Sciences Majors. Credit cannot be counted for both BIOS 191 and BIOS 211.

BIOS 202 Botany
4 hrs. Fall
An introduction to the structure, function, diversity of plants and plant-like organisms in relation to local and global environments. Students will learn to recognize plants of economic importance and gain experience in propagating and growing them. Prerequisites: BIOS 150, BIOS 151.

BIOS 211 Human Anatomy
4 hrs. Fall, Winter
A lecture and laboratory course in which all major structures of the human body are studied. Prerequisites: BIOS 151 or BIOS 112 or equivalent.

BIOS 220 Applied Botany
4 hrs.
Lectures, discussions, field trips and greenhouse experience are used to develop understanding of the practical applications of botany. Principles and practices in indoor and outdoor gardening, landscaping, plant propagation, care and identification of cultivated plants are emphasized.

BIOS 230 Microbiology and Man
3 hrs. Fall, Winter
A course describing the nature of microorganisms, their harmful and beneficial effects on human and their role in nature. Not for credit towards a Biomedical Sciences major but does apply toward a minor.

BIOS 232 Microbiology and Infectious Diseases
4 hrs. Fall, Winter
An introductory microbiology course emphasizing characteristics and modes of transmission of the microorganisms that cause human disease. Credit does apply toward a minor in Biomedical Sciences and a major in secondary education.

BIOS 234 Outdoor Science
4 hrs.
This course increases a student's awareness and appreciation of organisms in nature. Lectures introduce the classification, evolution, and ecology as well as the natural history of selected plants and animals. The laboratory includes the identification of common organisms living in our area, hypothesis testing, data analysis, and report writing.

BIOS 240 Human Physiology
4 hrs. Fall, Winter
This course is designed to provide non-majors with an understanding of the basic functioning of the organ systems of the human body and their regulation and control. The molecular and cellular mechanisms involved are emphasized. Applications to exercise physiology are made. Clinical applications are introduced where they provide additional insight into basic function and regulatory mechanisms. Prerequisites: BIOS 112 or BIOS 150.

BIOS 250 Genetics
3 hrs. Fall, Winter
A study of the mechanisms of heredity at the level of cells, individuals, families and populations. Prerequisite: BIOS 151.

BIOS 301 Ecology
4 hrs. Fall, Winter
An introduction to the relationships of organisms to their environment and to one another in terms of their interactions with other organisms in the physical environment, dynamics of populations, and structure and function in the community and ecosystem are considered. Prerequisites: BIOS 202 or BIOS 250.

BIOS 312 Microbiology
5 hrs. Fall, Winter
An introduction to the fundamental relationships among microbes with an emphasis on unifying principles. Laboratory work deals with techniques basic to bacteriology. Prerequisites: BIOS 250 and a course in organic chemistry, or consent of instructor.

BIOS 319 Plant Physiology
4 hrs. Winter
A lecture and laboratory course that deals with basic principles and concepts involved in understanding the physiology of plants, including photosynthesis, nutrient uptake, growth and development, water relations, environmental stress and genetics, and plant engineering. The laboratory will emphasize techniques such as the isolation and electrophoresis of plant proteins, determination of enzymatic activity and bioassay using plant hormones. Prerequisites: BIOS 202 and a course in organic chemistry.

BIOS 321 Clinical Physiology
5 hrs. Fall
A study of the functioning and regulation of the organ systems and the application of the knowledge to an understanding of their malfunctions. The molecular and cellular mechanisms involved are emphasized. Students must be in the Physician Assistant curriculum.

BIOS 350 Human Physiology for Majors
5 hrs. Fall, Winter
An introduction to the functions and interrelationships of the human body organ systems with a description of various physiological malfunctions. The laboratory provides experience with some types of clinical measurements such as laboratory instrumentation, data organization and scientific writing. Prerequisites: BIOS 250 and organic chemistry; anatomy is recommended.

BIOS 401 Pathogenic Microbiology for Physicians Assistants
2 hrs. Fall
This course describes the common diseases and their treatment with emphasis on the significance of laboratory findings in their diagnosis. Students must be in the Physician Assistant curriculum, or permission of instructor.

BIOS 404 Teaching of Secondary Science
3 hrs.
This course addresses the topics of teaching and learning of science at the secondary level. It is designed for those in secondary education who intend to be certified to teach the earth, life, or physical sciences (physicists, chemists, and biology) and focuses on the issue of how students learn science concepts and problem-solving skills in meaningful ways. The course develops models of effective instructional strategies designed to promote student learning and understanding of science concepts and processes. Practical methods for demonstrating and using models, planning laboratory experiences, managing science equipment, and safety concerns are developed and discussed. Students also work in discipline-specific groups to address issues unique to that area of science and the science classroom. Prerequisites: 15 hours of science in a certifiable science discipline and ED 302, which may be taken concurrently with this course. Cross-listed with SCI 404.

BIOS 415 Plants for Food and Industry
3 hrs. Winter (alternate years)
Representative cereal, fiber and industrial plants of primary economic importance will be examined, such as wheat, rice, wood and its uses, soybeans and grapes. Following a discussion of plant composition and some of the important processes involved in plant growth, we will look into the genetic characteristics of each plant, the areas where they are grown, the special aspects of their composition and growth habits that account...
for their economic prominence, their value in human nutrition, and some of their special problems. The course is enriched with several demonstrations and lab experiences that include diverse practical applications. Prerequisite: BIOS 202 and a course in organic chemistry.

BIOS 420 Human Genetics
3 hrs. Winter (alternate years)
The principles of human heredity with particular emphasis on the clinical significance of biomechanical and chromosomal variation. Abnormalities of development and methods of risk analysis in genetic counseling are discussed. Prerequisite: BIOS 250.

BIOS 425 Genetics Laboratory
3 hrs. Winter (alternate years)
Students will acquire techniques currently used in the field of genetics. Prerequisite: BIOS 250 or equivalent.

BIOS 427 Systematic Botany
4 hrs. Fall
Principles and techniques of plant classification, nomenclature, and biosystematics are presented in lectures in the field and laboratory experiences, using vascular plants as examples. Evolutionary trends, taxonomic characteristics, and experimental systematics of vascular plants are emphasized. Students will be expected to learn to recognize 100–150 plant species by common and scientific name. Prerequisite: BIOS 202.

BIOS 437 Histology
3 hrs. Fall
A study of the function and microscopic anatomy of mammalian tissues. Prerequisite: BIOS 211.

BIOS 439 Animal Behavior
3 hrs. Fall (alternate years)
Animal behavior is studied with regard to our understanding of the cause of behaviors, and the possible reasons for their existence. Particular emphasis is placed on how natural selection has affected individual and social behavior.

BIOS 441 Invertebrate Zoology
3 hrs. Winter (alternate years)
A study of the major phyla, physiology, embryology, and life history of representatives of the major groups of invertebrate animals. Prerequisite: BIOS 151.

BIOS 455 Marine Biology
3 hrs. Winter
A survey of marine biology topics, including: the physical marine environment and general principles of marine ecology; marine plants and animals, with emphasis on their special roles and adaptations; major marine communities, and marine biotic resource conservation and utilization. Selected topics of current research are included.

BIOS 461 Tropical Biology
4 hrs. Fall
A travel study course providing an introduction to both terrestrial and marine ecosystems in the tropics. The course, consisting of lectures, field explorations, and individual projects, examines the major life zones and biogeography of the region visited, from an ecological perspective. Tropical Rain, Montane, and Dry Forests and the biology of a coral reef will be studied. Human ecology, agriculture (tropical fruits and vegetables, sugar cane and coffee) and environmental issues will also be included. The course will be presented on one of the islands of the Caribbean and/or in Central America.

BIOS 497 Senior Seminar: Topic to be specified
3 hrs. Fall, Winter
This writing-intensive capstone course integrates a variety of biological concepts and defines the role of a biology professional. The student's record will indicate the nature of the seminar in which he/she has participated. This course will meet the capstone-level writing requirement. Not repeatable for credit. Prerequisite: Senior standing and an approved major slip.

BIOS 498 Readings in Biological Sciences
1–3 hrs. Fall, Winter
Students may contact a faculty member to conduct research under the guidance of that faculty member. Before the initiation of the research, a literature search and a written experimental plan must be prepared. At the conclusion of the research project, a written report will be submitted to the guiding faculty member. At least three credits of this course can fulfill the departmental capstone course requirement. This course meets the baccalaureate writing requirement. Not repeatable for credit. Prerequisite: Senior standing and an approved major slip.

BIOS 499 Independent Research in Biological Sciences
1–4 hrs. Fall, Winter
Students may contact a faculty member to conduct research under the guidance of that faculty member. Before the initiation of the research, a literature search and a written experimental plan must be prepared. At the conclusion of the research project, a written report will be submitted to the guiding faculty member. At least three credits of this course can fulfill the departmental capstone course requirement. This course meets the baccalaureate writing requirement. Not repeatable for credit. Prerequisite: Senior standing and an approved major slip.

BIOS 507 Biology of Addictive Drugs
3 hrs. Winter
The study of modes of action and effects of psychoactive drugs, such as alcohol, marijuana, cocaine, amphetamines, heroin, methadone, LSD, PCP, and nicotine. Prerequisites: Approved application (if used as a capstone course), junior standing and a declared major in the Biological Sciences Department. All 500-level courses.

BIOS 508 Endocrinology
3 hrs. Winter
A study of the hormonal integration of organ-system function including the chemical nature of these secretions, the cellular and biochemical mechanisms of hormone actions and the endocrine feedback control mechanisms. The regulatory nature of hormones in developmental processes, in adaptation and in disease processes will be stressed. Prerequisite: BIOS 352; biochemistry is recommended.

BIOS 524 Microbial Genetics
3 hrs. Fall (alternate years)
A molecular approach to microbial genetics, dealing primarily with bacterial and viral systems. Emphasis is placed on current literature and on the application of concepts to biomedical research. Prerequisites: BIOS 250 and 312 or consent of instructor; biochemistry is recommended.

BIOS 528 Biology of Non-Vascular Plants
4 hrs. Fall (alternate years)
A detailed comparative study of the morphology, life cycles, and ecology of the algae, fungi, lichens. Laboratory study will be complemented by field investigations. An independent project may be required. Prerequisite: BIOS 202.

BIOS 529 Biology of Vascular Plants
4 hrs. Winter (alternate years)
A detailed comparative study of the morphology, life cycles, and phytogeography of the vascular plants. Laboratory study will be complemented by field trips. An independent project may be required. Prerequisite: BIOS 202.

BIOS 530 Bryology
3 hrs. Winter (alternate years)
Mosses and liverworts will be studied in lecture, lab, field trips, and the herbarium. Aspects of bryophyte ecology, systematics, and biogeography will be considered. Microscope and keying techniques will be developed. Each student will produce personal collections and keys. Prerequisites: BIOS 202.

BIOS 531 Biology of Aging
3 hrs. Fall
This course is designed to provide students with an understanding of the aging process. The lectures will emphasize the anatomical, physiological and molecular changes which occur in cells and organs with aging. Clinical applications are introduced where they provide additional insight into the aging process. Prerequisites: An introductory physiology course.

BIOS 534 Virology
3 hrs. Winter
A study of the classification, structure and chemistry of viruses. Emphasis will be placed on the cell-virus interaction leading to the disease process or cellular alterations in mammalian systems. Prerequisite: BIOS 312; biochemistry is recommended.

BIOS 536 Immunology
4 hrs. Fall
A study of the biological and biochemical mechanisms of the immune response and the chemical nature of antibodies, antigens and their interaction. Emphasis will be placed on in vitro and in vivo humoral and hypersensitivity reactions. Prerequisite: BIOS 312; biochemistry is recommended.

BIOS 542 Entomology
4 hrs. Fall (alternate years)
This course is a general study of insects, their structure, classification, physiology, life histories, ecological relationships, and economic importance. Students will learn to identify common families of insects and make individual collections. Prerequisite: BIOS 151, BIOS 250, and BIOS 301 or consent of instructor.

BIOS 547 Ornithology
3 hrs.
An introductory course that explores both scientific and popular aspects of bird study. Life history, behavior, ecology, and identification are emphasized.

BIOS 549 Field Ecology
3 hrs.
Field studies of forest, native grassland, wetlands, and other local ecosystems. Plant and animal composition, geological history, human impacts, succession, and other aspects of the structure and working of ecosystems are integrated. Field ecological methods are emphasized. Prerequisite: BIOS 301 or equivalent.

BIOS 553 Limnology
3 hrs.
Biological, chemical, and physical aspects of lakes, ponds, and streams. Ecological relationships of invertebrate animals and lower plants are emphasized. Prerequisites: BIOS 151.

BIOS 557 Water Pollution Biology
3 hrs.
A comparison of organisms that live in clean waters, as contrasted with those in polluted waters, will be studied. Water conditions will be analyzed, and the use of biological indicators will be studied. The course will include field trips, laboratory work, and lecture presentations. Prerequisites: BIOS 202.

BIOS 559 Neurobiology
4 hrs. Fall
The substrate of behavior will be examined in this interdisciplinary survey of neural structure and function across molecular, cellular, and systems levels. There will be a strong emphasis on underlying mechanisms in different animal models. Lecture and discussion will be integrated and supplemented by demonstrations. Topics covered will include membrane biophysics, synaptic physiology, transduction and signaling in the visual, auditory, chemical and somatosensory systems, reflexes, simple behavior, and plasticity. Prerequisites: BIOS 350 and college-level courses in Physics and Biochemistry, or consent of instructor.

BIOS 560 Toxicology
3 hrs. Fall
Through a lecture/discussion format, the means by which toxicants exert their effects on mammalian systems will be explored. Topics will include disposition of chemicals in the body, the role of metabolism in enhancing or reducing toxicity, mechanisms of toxicity and the effects of toxicants on the major organ systems. Risk assessment and the problems inherent to this process will also be discussed. Prerequisites: BIOS 350, and chemistry through biochemistry or permission of instructor.

BIOS 561 Pharmacology
3 hrs. Winter (alternate years)
The study of how drugs work in the body. Topics may include, but are not limited to pharmacokinetics, pharmacodynamics, autonomic pharmacology, cardiovascular pharmacology, and renal pharmacology. The course will consist of approximately 50 percent lecture and 50 percent student presentations on selected topics. Prerequisites: BIOS 350 and a strong chemistry background.

BIOS 570 General Pathology
4 hrs. Winter (alternate years)
An introduction to pathology which describes the structural and biochemical changes occurring in cells and tissues following injury or disease. Prerequisites: BIOS core curriculum and organic chemistry.

BIOS 574 Embryology
4 hrs. Winter
Embryology is the study of the development of an organism from a single fertilized cell to a complex multicellular fetus. The course will present this material from both a classical descriptive and an experimental cellular point of view. In addition to the lecture, laboratory exercises will provide experience in the recognition of the various stages of development and in the culturing and manipulations of embryos in vitro and in vivo. Prerequisite: BIOS 250.

BIOS 597 Topics in Biological Sciences
3-4 hrs. Fall, Winter
Lectures or seminars in various areas of Biological Sciences will be offered. The student's record will indicate the topic he/she has taken. May be repeated for credit.

BLACK AMERICANA STUDIES

See “Interdisciplinary Programs” in the College of Arts and Sciences.

CHEMISTRY

Jay C. Means, Chair
Steven B. Bertman
Susan E. Burns
John E. Chateauenuel
Michael R. Czubakoski
James A. Howell
Joseph M. Kanamueller
Yi-Ping Liu
Michael E. McCarville
John B. Miller
Marc W. Perkovic
David S. Reinholt
Donald R. Sastre
Susan R. Stapleton
Ralph K. Steinhaus

Students majoring in chemistry may prepare for a career in industrial laboratory work, high school teaching, or graduate work in departments of chemistry, biochemistry or medical, or dental colleges. The course offerings for the undergraduate are structured to give a broad but thorough grounding in the elements of chemistry. The chemistry curriculum should be fortified by a minor in physics, mathematics, or biological sciences.

The Chemistry Department is accredited by the American Chemical Society. Students who follow the American Chemical Society certification course sequence below are considered professional chemists by the American Chemical Society. These students are eligible for direct membership senior grade in the Society immediately upon graduation.

Students who plan to work for the larger chemical companies or to attend graduate school should follow this degree program.

In order to complete an American Chemical Society Certified major, the following would be the expected minimum schedule of chemistry and prerequisite courses:

Freshman Year:
CHEM 101 or 102, General Chemistry I
CHEM 121, General Chemistry II
MATH 122, Calculus I
MATH 123, Calculus II

Sophomore Year:
CHEM 375, Organic Chemistry I
CHEM 376, Organic Chemistry Lab I
CHEM 377, Organic Chemistry II
CHEM 378, Organic Chemistry Lab II
MATH 272, Vector and Multivariate Calculus
PHYS 205 and 206, Mechanics and Heat
PHYS 207 and 208, Electricity and Light

Junior Year:
CHEM 222, Quantitative Analysis
CHEM 340, Physical Chemistry I
CHEM 343, Physical Chemistry II
CHEM 436 Physical Chemistry Laboratory I

Senior Year:
CHEM 437, Physical Chemistry Laboratory II
CHEM 520, Instrumental Methods
CHEM 510, Inorganic Chemistry

In addition two 3- or 4-hour advanced electives from 500-level chemistry or mathematics or physics as approved by the Chemistry advisor.

Majors and Minors

To qualify as a major or minor in chemistry from Western Michigan University, the student, including the transfer student, must complete a minimum of 14 credit hours or 7 credit hours, respectively, in the Chemistry Department following the filing of a major or minor slip with the departmental advisor. The courses taken for credit must include at least one which contains a laboratory experience. Students who plan to attend graduate school should take a minimum of courses under the credit-no credit option.

Before enrolling in a course, a student must earn a grade of “C” or better in prerequisite courses.

The Liberal Education Curriculum (LEC) Chemistry Major requires 34 hours in chemistry including the basic sequence through Physical Chemistry as in the A.C.S. certified program and two 3- or 4-hour courses at the 500-level, chosen from at least two areas of chemistry.

Secondary Education Chemistry Majors
require 30 hours of chemistry courses as in the Arts and Sciences major described above including a minimum of 4 hours of Physical Chemistry.

The Biochemistry Major is designed to meet the requirements for a chemistry background for the preprofessional degree leading to health science areas such as medicine, dentistry, veterinary medicine, nutrition, clinical chemistry, toxicology, pharmacology, molecular biology, etc. A minimum of 34 chemistry credit hours must be selected according to the following:

Freshman Year:
CHEM 101 or 102, General Chemistry I
CHEM 121, General Chemistry II
MATH 122, Calculus I
MATH 123, Calculus II
BIOS 150, Molecular and Cellular Biology
BIOS 151, Organismal Biology

Sophomore Year:
CHEM 375, Organic Chemistry I
CHEM 376, Organic Chemistry Lab I
CHEM 377, Organic Chemistry II
CHEM 378, Organic Chemistry Lab II
MATH 272, Vector and Multivariate Calculus
PHYS 205 and 206, Mechanics and Heat
PHYS 207 and 208, Electricity and Light

Junior Year:
CHEM 222, Quantitative Analysis
CHEM 340, Physical Chemistry I
CHEM 343, Physical Chemistry II
CHEM 436 Physical Chemistry Laboratory I

Senior Year:
CHEM 437, Physical Chemistry Laboratory II
CHEM 520, Instrumental Methods
CHEM 510, Inorganic Chemistry

In addition two 3- or 4-hour advanced electives from 500-level chemistry or mathematics or physics as approved by the Chemistry advisor.

The Business-Oriented Chemistry Major is available to provide chemical understanding to the level needed by students who intend to prepare for careers in non-laboratory functions of chemical industry and distribution of its products and technology. Such careers are principally found in management and sales areas, as well as some aspects of government service.

Those who elect this major are required to complete a minor in either General Business—option I (21 hrs.), Management (21 hrs.), or Marketing—option II (21 hrs.) in the
A minimum chemistry minor will contain at least 18 hours. Chemistry minors in secondary education are required to take 20 hours of chemistry and to complete one year of physics before student teaching.

Other specialized chemistry programs can be developed through the undergraduate chemistry advisor.

Science and Mathematics Teaching Minor

The Department of Chemistry participates in the science and mathematics teaching minor for students in the elementary curriculum. For a full description of the program, consult its listing under the "Interdisciplinary Programs" section in the College of Arts and Sciences.

Baccalaureate Writing Requirement

Students who have chosen the Chemistry major will satisfy the Baccalaureate Writing Requirement by successfully completing CHEM 436 Physical Chemistry Laboratory.

Chemistry Placement Examination

The chemistry placement examination is required to ensure that students are properly placed in beginning chemistry courses based upon the skills they possess in chemistry. It assumes that the student has had one year of high school chemistry and high school algebra.

Passing the chemistry placement examination meets the chemistry prerequisite for CHEM 101 and 103. A high level passing score allows the student to enroll in CHEM 102. Students who do not pass the chemistry placement examination must enroll in CHEM 100 to build up their background in chemistry in addition, each beginning chemistry course has a mathematics prerequisite.

Chemistry Courses (CHEM)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

CHEM 100 Introduction to General Chemistry

4 hrs. Fall, Winter
A course for students with insufficient background for college chemistry which develops skills essential to a working understanding of the science of chemistry. Instruction and practice in the fundamental tools for solving chemical problems: chemical formulas, chemical equations, stoichiometry, measurement units, conversions. An introduction to the nature of matter is developed. Enrollment is restricted to students without high school chemistry or to those who demonstrate inadequate retention of their chemistry background. This course credit will not apply to curricular requirements of chemical science at this university and should be followed by CHEM 101 or CHEM 103. Prerequisite: MATH 110 or equivalent performance on the Math Placement Examination.

CHEM 101 General Chemistry I

4 hrs. Fall, Winter
The theory and fundamental principles of chemistry are emphasized in this foundation course which serves primarily those who intend to enroll for two or more additional courses in chemistry. Credit for 101 is equivalent to the level of completion of CHEM 102. This course includes lecture and laboratory. Students can receive credit for only one of CHEM 101, 102, 103. Prerequisite: CHEM 100 with a grade of "C" or better or both of the following—(a) one year of high school chemistry and (b) a passing grade on the chemistry placement examination; (2) MATH 111 or the equivalent performance on the math placement examination.

CHEM 102 General Chemistry II

4 hrs. Fall
The theory and fundamental principles of chemistry are emphasized in this foundation course which serves primarily those who intend to enroll for more than two semesters of chemistry. Students well prepared may earn credit by taking examination. This course includes lecture and laboratory. Students can receive credit for only one of CHEM 101, 102, 103. Prerequisite: One year of high school chemistry; passing the chemistry placement examination at a high level, and either MATH 111 or equivalent performance on the math placement examination.

CHEM 103 General Chemistry I

4 hrs. Fall, Winter
A course primarily for students in Engineering and Applied Sciences curricula and others planning only a one or two semester terminal review of chemistry. This course surveys principles of chemistry with emphasis on calculations, descriptive and applied chemistry. May be used as a prerequisite for CHEM 120 if passed with a grade of "C" or better. This course includes lectures and laboratory. Students can receive credit for only one of CHEM 101, 102, 103. Prerequisite: CHEM 100 with a grade of "C" or better or both of the following—(a) one year of high school chemistry and (b) a passing grade on the chemistry placement examination; (2) MATH 111 or the equivalent performance on the math placement examination.

CHEM 107 Chemistry of Textiles and Design Media

4 hrs. Fall, Winter
A course in which the concepts needed to understand the chemical properties of textile and design media are developed in a non-mathematical manner. Textile fibers, textile finishes, dyes, plastics, rubber, paint, paper, leather, metals, cleaning agents, ceramics, glass, cosmetics, and wood are considered. This course is designed to meet the needs of students of home economics who plan a career in merchandising, or other students of art and applied science who handle the materials being considered. Not applicable for major or minor in chemistry nor as a prerequisite to other chemistry classes; this course includes lecture and laboratory.

CHEM 119 General Chemistry Laboratory

1 hr.
A laboratory course designed to complement the lecture topics covered in General Chemistry. This course is intended for those students who have had a general chemistry course at another school which did not have a laboratory as part of the course. Prerequisite: a minimum of 3 hours of non-laboratory General Chemistry and permission of the chemistry advisor.

CHEM 120 General Chemistry II

4 hrs. Fall, Winter
The properties of a number of the more representative elements and the compounds which they form are studied. The descriptive chemistry of some common cations and anions is studied using the hydrogen sulfide scheme of analysis in the laboratory. The chemical relationships of the periodic table, electrochemistry, and the equilibrium principle are also treated. Prerequisite: CHEM 101, 102 or 103.

CHEM 140 Introductory Environmental Chemistry

4 hrs. Winter
Purpose of course is to develop an appreciation of the chemical aspects of environmental problems and an acquaintance with the basic principles involved. This limited treatment considers elementary concepts of the nature of matter with application of tools of chemists important in exploration of environmental problems. Laboratory may entail field trips as well as experiments which relate to environmental problems. Credit does not apply for graduation if CHEM 101, 102 or 103 are used, or for major or minor in chemistry.

CHEM 150 Chemistry in Society

4 hrs.
This course provides an overview of fundamental chemical principles so that the importance of chemistry on the interaction of society may be discussed. These topics may include such areas as chemistry of the environment (air and water), radioactivity, energy sources, pharmaceuticals, household products, plastics, and food chemistry. Credit does not apply for a major or minor in chemistry. Prerequisite: MATH 110.

CHEM 155 Chemistry for Health Professionals I

4 hrs.
First semester of a two course sequence for College of Health and Human Services students whose curricula require an introduction to biochemistry. The first semester emphasizes general and organic chemistry. This course does not satisfy curricular requirements for chemistry outside of the College of Health and Human Services.

CHEM 156 Chemistry for Health Professionals II

4 hrs.
The continuation of CHEM 155, emphasizing biochemistry. This course does not satisfy curricular requirements for chemistry outside of the College of Health and Human Services or the chemistry requirements for the Physician Assistant Program. Prerequisite: CHEM 155.
crystallization, extraction, electrophoresis and a variety of chromatographic techniques are presented. Laboratory exercises illustrate typical applications of the methods.
Prerequisite: CHEM 377.

CHEM 550 Biochemistry I
3 hrs. Fall
The chemistry, properties, and molecular mechanisms of proteins and nucleic acids. Includes discussions of amino acids, enzymes and biochemical energetics. Prerequisites: CHEM 377, CHEM 378, and CHEM 430.

CHEM 552 Biochemistry I with Laboratory
4 hrs. Fall
This course consists of CHEM 550 plus laboratory. Experiments involve more advanced techniques and instrumentation than in CHEM 356. Emphasis will be on purification and properties of proteins and nucleic acids. Prerequisites: CHEM 377, CHEM 378, and CHEM 430.

CHEM 554 Biochemistry II
3 hrs. Winter
Continuation of CHEM 550. Chemistry and metabolism of carbohydrates and lipids. Metabolism of amino acids and photosynthesis. Prerequisite: CHEM 550 or 552.

CHEM 560 Qualitative and Spectroscopic Analysis of Organic Compounds
4 hrs. Fall
A course in spectroscopic and chemical methods of identification of organic compounds in the pure state and in mixtures, which has as a secondary goal the development of deductive reasoning in the field of organic chemistry. This course includes lecture and laboratory. Prerequisites: CHEM 377, CHEM 378 and 24 hours of chemistry.

CHEM 580 History of Chemistry
3 hrs. Winter
This course traces the roots of chemistry from ancient technology through alchemy and medicine to the chemical revolution of Lavoisier and Dalton. In more detail it examines the nineteenth century basis of modern chemistry and the twentieth century clarification of the structural atom.
Prerequisite: 16 hours of chemistry, including CHEM 360 or 365.

CHEM 590 Special Problems in Chemistry
2 hrs. Fall, Winter
Research work on a problem in chemistry in association with a faculty member. This research work is to be summarized in a written report. May be repeated once for credit. Prerequisites: CHEM 436, 24 hours of chemistry, with approval of the department chairperson and a faculty director.

CHINESE

See "Asian and Middle Eastern Languages" in the College of Arts and Sciences.

COMMUNICATION

James Gilchrist, Chair
Lynnwood Bartley
Srdada Borden
Nancy Connell
Loren Crane
Richard Dieker
Wendy Ford
Susan Fox
Richard A. Gershon
Melissa Hancock
Keith Heard
Richard Joyce
Joseph Kavany
Steven Lipkin
Peter G. Northouse
Mark Orbe
Thomas F. Pagel
Steven C. Rhodes
George Robeck
Thomas Silf
Shirley A. Van Hoeven
Paul Yeltsma

Communication is the principal mode for establishing and maintaining human relationships. It consists of those processes by which society is made possible, by which people develop and exchange ideas, solve problems, and work cooperatively in attaining common objectives. Effective communication is an educational imperative for all human beings.

The Department of Communication is dedicated to meeting the personal and professional communication objectives of our students. Seven areas of concentration within the major are available: Broadcast and Cable Production (BCP); Communication Studies (COS); Intercultural Communication (IPC); Media Studies (MDS); Organizational Communication (OCM); Public Relations (PR); and Telecommunication Management (TCM). These major areas of concentration reflect the primary divisions in the discipline, with required courses to insure adequate preparation in specific fields. The concentration areas and accompanying upper-level requirements provide appropriate guidance to assure that programs of study are academically sound.

Two minors, Minor in Communication and Minor in Secondary Education Communication, are also offered.

The study of communication is important to virtually every profession that involves working with people, making an excellent major, minor or cognate for communication-related jobs in education, business, government agencies, health care professions, social services, industry, and other public and private organizations. Communication is a central position in public relations, corporate communication, public information management, employee communication, training and development, and radio, television, and film.

Excellent production training facilities and professional curricular programs in television are available. A film provides both the background knowledge and training for positions in the field of mass media production, performance and management. The department also encourages a close relationship between academic classes and extracurricular and co-curricular experiences. Students may become involved in a variety of activities, including community service projects, WIDR-FM radio station, video-taping of special events, film-making, and internships in a variety of organizations. Academic credit may be earned for significant participation in many of these communication activities.

Students planning to major or minor in any of the communication areas should discuss their program needs and interests with a departmental advisor at the earliest possible date. Call the departmental office at 387-2974 for advising hours. A Handbook for Majors and Minors in Communication, which describes career opportunities and suggested programs of study in communication, is available free of charge from the department office.

Pre-Communication Major

Students planning to major in any area of communication will be admitted as a pre-communication student, PCM, and will work with a communication advisor in the development of a planned program. This status, however, does not guarantee admission to a communication major, since more students apply for admission than can be accepted. A student's application for admission as a major will be considered when:
1. The student has completed 30 hours of college work, at least 15 hours of which are at Western Michigan University.
2. The student has completed the pre-communication course requirements with a grade of C or better in such courses. These requirements include COM 170 and COM 200, plus one additional course. Pre-communication course requirements are listed with each of the majors.
3. The student has a minimum overall grade point average of at least 2.0.

Admission will be based on space available, overall grade point average, grades in pre-communication courses, and an essay which is part of the application. The deadlines for submitting the application are September 15, January 15, and May 15. Applications and additional information may be obtained from the department office, 301 Sprau Tower.

Students not meeting the admission requirements will be informed of steps they can take to earn admission. Admission of students on a probationary basis to the communication major will be considered on an individual basis.

General Program Requirements

1. All major/minor programs must be approved by a departmental advisor. Admission to a major in communication will be considered by a departmental advisor following completion of the PCM requirements. Declaration of a minor in communication must be made with a departmental advisor before the completion of nine semester hours of communication credit.
2. Students must earn a grade of "C" or better in all course work applied toward a major/minor program.
3. Prerequisites listed for all communication courses must be met. Students who have not completed the prerequisites with a grade of "C" or better will be dropped from the class. All 500-level courses require junior or senior standing, in addition to any specific prerequisites listed.
4. Petition for exceptions to any departmental policies should be directed to the department chair.

Baccalaureate Writing Requirement

Students who have chosen to major in any of the communication areas must satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

COM 332 Group Problem Solving
COM 358 TV and Film Scripting
COM 359 Broadcast Journalism
COM 370 Interpersonal Communication
COM 372 Introduction to General Semantics
COM 441 Documentary in Film and Television
COM 482 Communication Processes in the Organization
COM 541 Telecommunications Law and Policy

**Majors**

**Broadcast and Cable Production (BCP) Major**

36 hours

1. Pre-Mass Communication Requirements .................................. 9 hrs.
   COM 170 Interpersonal Communication I .......................... 3
   COM 200 Introduction to Telecommunication Theory ............. 3

2. Broadcast and Cable Production Core Requirements ................. 12 hrs.
   A. All of these courses are required. One must be taken prior to admission to the major: (9 hrs.)
   COM 240 Introduction to Telecommunication .................... 3
   COM 241 Film Communication ..................................... 3
   COM 256 Broadcast Operations ................................... 3

3. Upper-level Broadcast and Cable Production Requirements. One course from each of the following groups is required, selected in consultation with an advisor 18 hrs.
   A. Select one of the following courses (3 hrs.):
      COM 104 Public Speaking ........................................ 3
      COM 106 Voice and Diction ....................................... 3
      COM 210 Performance of Literature .......................... 3

   B. Select two of the following courses (6 hrs.):
      COM 356 Film Production ......................................... 3
      COM 357 TV Studio Production .................................. 3
      COM 458 TV Performance ........................................ 3

   C. Select one of the following courses (3 hrs.):
      COM 447 Organizational TV Production ......................... 3
      COM 457 Advanced TV Production ................................ 3

   D. Select one of the following courses (3 hrs.):
      *COM 358 TV/Film Scripting .................................. 3
      *COM 359 Broadcast Journalism ................................ 3

   E. Select two of the following courses (6 hrs.):
      COM 342 The Film Industry (Prereq. 241) ....................... 3
      *COM 441 Documentary in Film/TV .................................. 3
      COM 443 Mass Communication/Social Change ..................... 3

   F. Select one of the following courses (3 hrs.):
      COM 335 Leadership .................................................. 3
      COM 430 Studies in Attitude Change .......................... 3
      COM 447 Organizational TV Production .......................... 3

4. Communication Studies Electives. Six hours of electives in communication, selected from any courses offered by the department 6 hrs.

5. Upper-level Communication Studies Electives. Two courses from each of the following groups are required: (9 hrs.)
   A. Select two of the following courses (6 hrs.):
      COM 305 Special Topics in Communication ...................... 3
      *COM 332 Group Problem Solving .................................... 3
      *COM 370 Interpersonal Communication Theory .................. 3
      *COM 372 Introduction to General Semantics ................... 3
      COM 432 Group Communication Theory .......................... 3
      COM 472 Nonverbal Communication ................................ 3
      COM 475 Family Communication .................................. 3
      COM 477 Communication Ethics ................................ 3
      COM 494 Health Communication .................................. 3

   B. Select two of the following courses (6 hrs.):
      COM 306 Special Topics in Communication ...................... 3
      *COM 335 Leadership .................................................. 3
      COM 430 Studies in Attitude Change .......................... 3
      COM 447 Organizational TV Production .......................... 3
      COM 449 Public Relations in Organizations ..................... 3
      COM 474 Intercultural Communication .......................... 3
      COM 477 Communication Ethics ................................ 3
      COM 482 Communication Processes in Organizations ............ 3
      COM 483 Student Internship ....................................... 3

   C. Select two of the following courses (6 hrs.):
      COM 305 Special Topics in Communication ...................... 3
      COM 342 The Film Industry .......................... 3
      COM 442 Mass Media and the Child .......................... 3
      COM 443 Mass Communication/Social Change ..................... 3
      COM 444 Mass Media/News/Public Affairs ....................... 3
      COM 446 Mass Entertainment ..................................... 3
      COM 551 Methods of Media Analysis .......................... 3
      COM 554 Communication Technology .......................... 3

6. Communication Studies Electives. Six hours of electives in communication, selected from any courses offered by the department 6 hrs.

   All course prerequisites must be met to enroll in upper-level courses. Grade requirement: A minimum grade of "C" is required in all courses to be applied toward the major.

*Writing Intensive Course Requirement. These courses satisfy the upper-level writing requirement.

**Communication Studies (COS) Major**

36 hours

1. Pre-Communication Requirements .................................. 9 hrs.
   COM 170 Interpersonal Communication I .......................... 3
   COM 200 Introduction to Telecommunication Theory ............. 3
   COM 201 Communication Inquiry .................................. 3
   COM 104 Public Speaking ........................................... 3

2. Communication Core Requirements .................................. 3 hrs.
   A. Both of these courses are required (6 hrs.)
      *COM 332 Group Problem Solving .................................... 3
      *COM 370 Interpersonal Communication Theory .................. 3

Three courses from the following group are required.

B. Select three of the following courses (9 hrs.)
   COM 305 Special Topics in Communication ...................... 3
   *COM 372 Introduction to General Semantics ...................... 3
   COM 430 Studies in Attitude Change .......................... 3
   COM 432 Group Communication Theory .......................... 3
   COM 472 Nonverbal Communication ................................ 3
   COM 474 Intercultural Communication .......................... 3
   COM 475 Family Communication .................................. 3
   COM 477 Communication Ethics ................................ 3
   COM 479 Female/Male Interaction .................................. 3
   COM 484 Health Communication .................................. 3

4. Interpersonal Electives ............................................. 9 hrs.
   Nine hours of electives in communication, six of which may be selected from any courses offered by the department and three hours selected from upper-division (300 or higher) courses in the department.

   All course prerequisites must be met to enroll in upper-level courses. Grade requirement: A minimum grade of "C" is required in all courses to be applied toward the major.

*Writing Intensive Course Requirement. These courses satisfy the upper-level writing requirement.

**Media Studies (MDS) Major**

36 hours

1. Pre-Communication Requirements .................................. 9 hrs.
   COM 170 Interpersonal Communication I .......................... 3
   COM 200 Introduction to Telecommunication Theory ............. 3

   One of the following is required before declaring major:
   COM 241 Film Communication ...................................... 3
   COM 256 Broadcast Operations ................................... 3

2. Media Studies Emphasis Core Requirements ............................ 9 hrs.
   A. This course is required:
      COM 240 Introduction to Communication ....................... 3

   B. Select one of the following courses (3 hrs.):
      COM 104 Public Speaking ........................................... 3
      COM 106 Voice and Diction ....................................... 3
      COM 210 Performance of Literature .......................... 3
C. Select one of the following courses (3 hrs.):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 257</td>
<td>Radio Production</td>
<td>3</td>
</tr>
<tr>
<td>COM 355</td>
<td>Small Format Video</td>
<td>3</td>
</tr>
<tr>
<td>COM 356</td>
<td>Film Production</td>
<td>3</td>
</tr>
<tr>
<td>COM 357</td>
<td>TV Studio Production</td>
<td>3</td>
</tr>
<tr>
<td>*COM 358</td>
<td>TV/TVI Scribing</td>
<td>3</td>
</tr>
</tbody>
</table>


Two courses from each of the following groups required:

A. Select two of the following courses (6 hrs.):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 342</td>
<td>The Film Industry</td>
<td>3</td>
</tr>
<tr>
<td>*COM 441</td>
<td>Documentary in Film/TV</td>
<td>3</td>
</tr>
<tr>
<td>COM 445</td>
<td>Television Criticism</td>
<td>3</td>
</tr>
<tr>
<td>COM 551</td>
<td>Methods of Media Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

B. Select two of the following courses (6 hrs.):

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 305</td>
<td>Special Topics in Communication</td>
<td>3</td>
</tr>
<tr>
<td>COM 442</td>
<td>Mass Media and the Child</td>
<td>3</td>
</tr>
<tr>
<td>COM 443</td>
<td>Mass Communication/Social Change</td>
<td>3</td>
</tr>
<tr>
<td>COM 444</td>
<td>Mass Communication/News/Public Affairs</td>
<td>3</td>
</tr>
<tr>
<td>COM 446</td>
<td>Mass Entertainment</td>
<td>3</td>
</tr>
</tbody>
</table>

C. Select two of the following courses (6 hrs.):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 455</td>
<td>International Telecommunication Policy</td>
<td>3</td>
</tr>
<tr>
<td>COM 456</td>
<td>Broadcast/Cable Programming</td>
<td>3</td>
</tr>
<tr>
<td>*COM 541</td>
<td>Telecommunications Law and Policy</td>
<td>3</td>
</tr>
<tr>
<td>COM 548</td>
<td>Telecommunication Management</td>
<td>3</td>
</tr>
<tr>
<td>COM 554</td>
<td>Communication Technology</td>
<td>3</td>
</tr>
</tbody>
</table>

All course prerequisites must be met to enroll in upper-level courses. Grade requirement: A minimum grade of "C" is required in all courses to be applied toward the major.

Recommended minors include: Journalism, General Business, Marketing, Management, and Public Administration. Recommended majors include: Public Administration, Advertising, Environmental Studies, and Travel and Tourism.

Public Relations (PUR) Major

48-50 hours

1. Pre-Communication Requirements: 9 hrs.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 170</td>
<td>Interpersonal Communication I</td>
<td>3</td>
</tr>
<tr>
<td>COM 200</td>
<td>Introduction to Communication Theory</td>
<td>3</td>
</tr>
<tr>
<td>COM 201</td>
<td>Communication Inquiry</td>
<td>3</td>
</tr>
</tbody>
</table>

2. Public Relations Core requirements: 30 hrs.

A. Required courses (9 hrs.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 449</td>
<td>Public Relations and Organizations Development</td>
<td>3</td>
</tr>
<tr>
<td>COM 450</td>
<td>Public Relations Program</td>
<td>3</td>
</tr>
<tr>
<td>*COM 482</td>
<td>Telecommunication Processes in the Organization</td>
<td>3</td>
</tr>
</tbody>
</table>

B. Select one of the following (3 hrs.):

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 358</td>
<td>Television and Film Scripting</td>
<td>3</td>
</tr>
<tr>
<td>COM 359</td>
<td>Broadcast Journalism</td>
<td>3</td>
</tr>
<tr>
<td>COM 104</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>COM 204</td>
<td>Advanced Public Speaking</td>
<td>3</td>
</tr>
</tbody>
</table>

D. Select one of the following (3 hrs.):

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>*COM 332</td>
<td>Group Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>*COM 335</td>
<td>Leadership</td>
<td>3</td>
</tr>
<tr>
<td>COM 483</td>
<td>Interviewing</td>
<td>3</td>
</tr>
</tbody>
</table>

E. Select two of the following (6 hrs.):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 256</td>
<td>Broadcast Operations</td>
<td>3</td>
</tr>
<tr>
<td>COM 257</td>
<td>Radio Programming and Production</td>
<td>3</td>
</tr>
<tr>
<td>COM 355</td>
<td>Small Format Video Production</td>
<td>3</td>
</tr>
<tr>
<td>COM 356</td>
<td>Film Production</td>
<td>3</td>
</tr>
<tr>
<td>COM 357</td>
<td>Television Studio Production</td>
<td>3</td>
</tr>
<tr>
<td>COM 447</td>
<td>Organizational TV Production</td>
<td>3</td>
</tr>
<tr>
<td>COM 458</td>
<td>Television Performance</td>
<td>3</td>
</tr>
</tbody>
</table>

F. Select two of the following (6 hrs.):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 240</td>
<td>Production to Telecommunication</td>
<td>3</td>
</tr>
<tr>
<td>COM 443</td>
<td>Mass Communication and Social Change</td>
<td>3</td>
</tr>
<tr>
<td>COM 444</td>
<td>Mass Communication, News and Public Affairs</td>
<td>3</td>
</tr>
</tbody>
</table>

3. Cognate Course Requirements: 12-14 hrs.

A. This course is required:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAPR 150</td>
<td>Graphic Arts</td>
<td>3</td>
</tr>
</tbody>
</table>

B. Select one of the following (3 hrs.):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 548</td>
<td>Audio Visual Media I</td>
<td>3</td>
</tr>
<tr>
<td>ED 549</td>
<td>Audio Visual Media II</td>
<td>3</td>
</tr>
</tbody>
</table>

C. Select two of the following (required courses in English can be used toward a journalism minor) (8 hrs.):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 264</td>
<td>News Writing</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 265</td>
<td>News Editing</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 363</td>
<td>Reporting</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 364</td>
<td>Feature/Article Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

Recommended minors include: Journalism, General Business, Marketing, Management, and Public Administration. Recommended majors include: Public Administration, Advertising, Environmental Studies, and Travel and Tourism.

Telecommunication Management (TCM) Major

36 hours

1. Pre-Communication Requirements: 9 hrs.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 170</td>
<td>Interpersonal Communication I</td>
<td>3</td>
</tr>
<tr>
<td>COM 200</td>
<td>Introduction to Communication Theory</td>
<td>3</td>
</tr>
<tr>
<td>COM 240</td>
<td>Introduction to Telecommunication</td>
<td>3</td>
</tr>
</tbody>
</table>

2. Telecommunication Management Core Requirements: 3 hrs.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 452</td>
<td>Broadcast Sales</td>
<td>3</td>
</tr>
<tr>
<td>COM 456</td>
<td>Broadcast/Cable Programming</td>
<td>3</td>
</tr>
<tr>
<td>*COM 541</td>
<td>Telecommunications Law and Policy</td>
<td>3</td>
</tr>
<tr>
<td>COM 548</td>
<td>Telecommunication Management</td>
<td>3</td>
</tr>
<tr>
<td>COM 554</td>
<td>Communication Technology</td>
<td>3</td>
</tr>
</tbody>
</table>

Select three of the following courses (9 hrs.):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 358</td>
<td>Television and Film Scripting</td>
<td>3</td>
</tr>
<tr>
<td>COM 359</td>
<td>Broadcast Journalism</td>
<td>3</td>
</tr>
<tr>
<td>COM 104</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>COM 204</td>
<td>Advanced Public Speaking</td>
<td>3</td>
</tr>
</tbody>
</table>

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<th>Course Title</th>
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<td>3</td>
</tr>
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<td>Advanced Public Speaking</td>
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</tr>
</tbody>
</table>

F. Select two of the following (6 hrs.):

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<thead>
<tr>
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<th>Hours</th>
</tr>
</thead>
<tbody>
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<td>3</td>
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<tr>
<td>COM 443</td>
<td>Mass Communication and Social Change</td>
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</tr>
<tr>
<td>COM 204</td>
<td>Advanced Public Speaking</td>
<td>3</td>
</tr>
</tbody>
</table>

All course prerequisites must be met to enroll in upper-level courses. Grade requirement: A minimum grade of "C" is required in all courses to be applied toward the major. "Writing Intensive Course Requirement. These courses satisfy the upper-level writing requirement."
Minors
Communication Minor
21 hours
A communication minor requires 21 semester hours of COM, including COM 170, COM 200 and 15 additional elective hours to be chosen in consultation with the appropriate advisors of the department. Nine of these hours must be taken at the 300-500 level.

Secondary Education Minor in Communication
21 hours

Requirements

COM 104 Public Speaking \( 3 \) hrs.
COM 170 Interpersonal Communication I \( 3 \) hrs.
COM 200 Introduction to Communication Theory \( 3 \) hrs.
COM 204 Advanced Public Speaking \( 3 \) hrs.
COM 332 Group Problem Solving \( 3 \) hrs.
COM 334 Argumentation and Debate \( 3 \) hrs.
Elective \( 300-400 \) level \( 3 \) hrs.

Other courses may be required, based on an analysis of student's proficiencies, with a total of at least 21 hours in COM, nine of which must be at the 300-400 levels.

Transfer Students
Transfer students are permitted to transfer as many as 12 semester credit hours for a major and 9 hours for a minor in communication.

Communication Courses (COM)

A list of approved General Education courses can be found in "Academic General Education and Procedures" earlier in this catalog.

COM 104 Public Speaking
3 hrs.
Study of the application of principles of communication underlying effective oral presentations, with attention given to speaking in business, professional and public settings. Includes practice in preparing, presenting and evaluating speeches and other forms of oral presentations. This course may be offered in an accelerated format.

COM 106 Voice and Diction
3 hrs.
Individual improvement program emphasizing voice production and diction.

COM 170 Interpersonal Communication
3 hrs.
An introductory course in communication theory and practice in which students utilize their powers of speech to increase their effectiveness in interpersonal relations through understanding of self and others. This course may be offered in an accelerated format.

COM 200 Introduction to Communication Theory
3 hrs.
A study of communication models and theories which are common to the fields of interpersonal, group, organizational, public and mass communication.

COM 201 Communication Inquiry
3 hrs.
This course introduces students to the humanistic and social science traditions of inquiry into human communication. Prerequisites: COM 200 and must have fulfilled General Education math proficiency requirement.

COM 204 Advanced Public Speaking
3 hrs.
Advanced study and presentation of informative, argumentative, persuasive and special occasion speeches. Prerequisite: COM 104 or consent of department.

COM 207 Intrapersonal Communication
3 hrs.
The examination of intrapersonal communication models showing how imagery and symbolic processes organize patterns of thinking that permit self-direction and regulation.

COM 210 Performance of Literature I
3 hrs.
Emphasis is placed on developing the student's appreciation of literature and his/her skill in analysis and performance of prose, poetry, and drama, including an introduction to group performance of literature.

COM 240 Introduction to Telecommunication
3 hrs.
This course surveys the history and development of broadcasting, cable, and telephone communications. Also considered are current relationships, including management, operations and programming, as well as basic telecommunication regulation.

COM 241 Film Communication
3 hrs.
An introduction to the unique language and elements of the film medium through the study of outstanding examples of historical and contemporary experimental, documentary and feature films. $12 lab fee.

COM 256 Broadcast Operations
3 hrs.
Introduction to the electronic theory, equipment, operating procedures and personnel involved in radio, television production, storage and distribution.

COM 257 Radio Programming and Production
3 hrs.
Analysis of sound as a creative element in radio broadcasting and production. Studio experience in writing and producing radio formats, commercials, drama, documentary and other types of aural messages. $12 lab fee. Prerequisite: COM 200, COM 256.

COM 305 Special Topics in Communication
1-4 hrs.
Group study of special topics in communication education, interpersonal and organizational communication, mass communication, oral interpretation, and film. Many of these special courses are organized in response to special needs or interests of students on campus, in the community and in the region. Some topics are announced in the Schedule of Classes; some are added during the semester. Further information and a full listing of topics may be obtained from the Departmental office, 301 Sprau Tower. Specific topic must be approved by an advisor. Six hours of COM 305 and COM 505 may be accumulated as credit toward a major or minor in communication.

COM 332 Group Problem Solving
3 hrs.
This course examines principles and procedures of effective group communication with an emphasis on practical application of problem solving, decision making, and critical thinking skills. Individuals will work together in a variety of group situations learning to communicate effectively, plan agendas, make decisions, write and present group reports, and analyze group communication behaviors. This course meets the University upper-level writing-intensive requirement. Prerequisites: COM 170, COM 200 and ENGL 105 or the equivalent.

COM 334 Argumentation and Debate
3 hrs.
The study of rhetoric and principles of debate. Includes the analysis of propositions and the use of logic and evidence. Students will study, present, and defend cases. Debate is taught as a process. Prerequisites: COM 170, COM 200, and ENGL 105 or the equivalent.

COM 342 The Film Industry
3 hrs.
The history and development of the American film medium from an economic, social, and cultural perspective. Emphasis will be on methods of production, distribution, exhibition, and legal issues. Prerequisite: COM 241.

COM 355 Small Format Video Production
3 hrs.
Practical experience in the design, production, implementation and evaluation of small-format television programs. Applications of portable video technology to the broadcast industry and community cable television systems will be stressed. $25 lab fee. Prerequisite: COM 200, COM 256.

COM 356 Film Production
3 hrs.
Production of short experimental films; scripting, planning, editing, directing and photography. Work in this course will be done within the limitations of 8 mm format. In addition to text materials, students must provide supplies averaging about $30.00 per student. $25 lab fee. Prerequisite: COM 200, COM 241.

COM 357 TV Studio Production
3 hrs.
Explores the elements of television studio production and directing. Studio experience in equipment operation, crew roles, and producing and directing various types of television studio formats. In addition to the texts, students must provide supplies averaging about $10. $20 lab fee. Prerequisite: COM 200, COM 256.

COM 358 TV and Film Scripting
3 hrs.
The styles and techniques of film and television scripting for broadcast formats, station continuity, commercials, dramatic scripts, small format video, and documentary. This course meets the University upper-level writing-intensive requirement.

COM 359 Broadcast Journalism
3 hrs.
Radio and TV as news and information media. Studies and applies principles of news gathering and reporting, commentary, on-the-spot news coverage, features, and structure of the newscast. This course meets the University upper-level writing-intensive requirement.

COM 370 Interpersonal Communication II
3 hrs.
An analysis of relational communication with particular emphasis on the nature of the interactional relationships. This course meets the University upper-level writing intensive requirement. Prerequisites: COM 170, COM 200 or consent of instructor and ENGL 105 or the equivalent.
COM 372 Introduction to General Semantics 3 hrs.
A study of the function of language. The course deals with the nature and meaning of symbols and differences between the communication systems of the human animal and other species. Examines the assumptions held by Western man about the structure/function of his universe as reflected in language; the problem of "reality" as distinct from "meaning." The purpose of the course is to increase the student's awareness of his/her effectiveness as a thinker or symbolizer. This course meets the University upper-level writing-intensive requirement. Prerequisite: ENGL 105 or the equivalent.

COM 398 Independent Study Communication 1–6 hrs.
Designed to allow outstanding students to work independently under staff supervision. Includes extensive study, research or special creative projects in any of the several areas of communication. One to six hours credit may be accumulated. Prerequisite: Consent, Chair of Department.

COM 430 Studies in Attitude Change: Variable Topics 3 hrs.
Selected areas of detailed study within the total range of rhetoric. Each of the courses listed below carries separate credit, and a student may take any or all of the offerings listed under COM 430. In addition to the topics listed, additional topics are offered from time to time and will be listed in the Schedule of Classes.

1. Freedom of Speech
2. Political Communication

COM 432 Group Communication Theory 3 hrs.
A study of small group communication from theoretical perspectives. The emphasis will be on analyzing small group communication based on an understanding of group communication theories, concepts, and research methods. Prerequisite: COM 332

COM 441 Documentary in Film and Television 3 hrs.
A study of documentary philosophies, strategies, and accomplishments through an examination of important documentary movements, and films. $12 fee. This course meets the University upper-level writing-intensive requirement. Prerequisite: COM 241.

COM 442 Mass Media and the Child 3 hrs.
Assesses the impact that mass media, including radio, television, films, comics, and other media, may be having on the minds and behaviors of children.

COM 443 Mass Communication and Social Change 3 hrs.
The course examines the role of the mass media in effecting change through communication and the effects of these messages on individuals, groups and institutions. The fields of politics, advertising, and public relations are studied from the communication/change viewpoint of the practitioner and the consumer.

The course examines the role of the media in covering public affairs news and disseminating it to the public. Questions related to media access, fairness, media regulation and mass production are discussed in light of current events.

COM 445 Television Criticism 3 hrs.
Examines the various functions and writings of contemporary television critics, and establishes criteria for evaluating television programs and program criticism. Students will view and analyze various television program types, including documentary, drama, visual essay and other entertaining and educational programs.

COM 446 Mass Entertainment 3 hrs.
This course examines the role and function of mass entertainment in modern society. Major topics include: mass entertainment as part of leisure; the social and psychological functions of mass entertainment; measuring mass taste; and in-depth study of popular mass media formats such as soap operas, detective, western, popular music, etc.

COM 447 Organizational TV Production 3 hrs.
Applications of radio and TV technology for the business professional; educator, media specialist, and the clinician. Utilization of electronic media for training, research observation and instruction. In addition to required texts, students must provide supplies averaging about $10 per student. $20 lab fee. Prerequisite: COM 200, COM 256.

COM 449 Public Relations and Organizations 3 hrs.
The course will examine the role of public relations and public information in a variety of organizations with a communication theory perspective. The course is designed to prepare individuals for positions in public relations and public information, or for other positions in organizations concerned with the flow of information across organization boundaries. Prerequisite: COM 200 or consent of instructor.

COM 450 Public Relations Program Development 3 hrs.
This is an advanced course in public relations emphasizing research methodology, planning, evaluation for corporate, governmental, educational, and social service organizations. Prerequisite: COM 200, COM 449.

COM 452 Broadcast Sales 3 hrs.
This course covers the activity and process of buying and selling broadcast and cable time on the local and network levels. Prerequisite: COM 245.

COM 455 International Telecommunications 3 hrs.
This course is designed to provide the student with an overview of the essential regulatory and policy issues governing the field of international telecommunications. Special attention is given to the major regulatory agencies and economic players responsible for the formation of telecommunications policy at the international level.

COM 456 Broadcast/Cable Programming 3 hrs.
This course examines the strategies of selecting, purchasing, and scheduling broadcast and cable programming on the local and network levels. $10 lab fee. Prerequisite: COM 240.

COM 457 Advanced TV Studio Production 3 hrs.
Individual and group projects in the development and production of television programs stressing experimental techniques. $20 lab fee. Prerequisite: COM 200, COM 357.

COM 459 Television Performance 3 hrs.
Exercises in television performance, stressing the special problems of the video performer. $15 lab fee. Prerequisite: Consent of instructor.

COM 470 Communication, Social Issues and Change 3 hrs.
A study and practical application of communication and rhetorical methodology in contemporary social problems.

COM 472 Nonverbal Communication 3 hrs.
The course examines theory and research in the nature and function of nonverbal message systems. Topics include: the role of nonverbal communication in the developmental stages of humans; individual differences in ability to interpret messages; the relationship of nonverbal communication to the concept of culture; extension of a person such as space, clothing, possessions; and specific messages related to the face and body.

COM 474 Intercultural Communication 3 hrs.
An examination of the factors contributing to effective communication in an intercultural context. The course focuses on such topics as ethnocentrism, cultural perceptions, values and beliefs, language and meaning, and nonverbal factors. Communication systems of selected cultures are described and analyzed.

COM 475 Family Communication 3 hrs.
Examines the current literature pertaining to family systems, power influences, and satisfactory patterns of family communications. Students analyze family interactions and identify satisfactory patterns of marital family communication.

COM 477 Communication Ethics: Honesty and Deception 3 hrs.
Principles and perspective of ethical speech communication are studied and applied to a variety of private and public communication situations. The impact of honest versus deceptive communication on the individual and society is evaluated.

COM 479 Female/Male Interaction 3 hrs.
Examines the variable of gender as it influences communication between women and men. Topics include female-male stereotypes, interpersonal attraction, differences in female-male verbal and nonverbal codes, relational dialogues and patterns, and female-male interaction on the job.

COM 482 Communication Processes in the Organization 3 hrs.
This course is a systematic study of the communication processes in organizations at the individual, group, and organization-wide levels. Students will learn strategic communication planning, including methods of organizing and evaluating information, identifying and solving communication problems and applying organizational communication skills in decision-making. This course meets the University upper-level writing-intensive requirement. This course may be offered in an accelerated format. Prerequisites: COM 170, COM 200, and ENGL 105 or the equivalent.

COM 483 Interviewing 3 hrs.
Theories and principles of planning conducting, and evaluating interviews are studied and applied to specific interview types, including selection, performance appraisal, survey, and journalistic interviews.
Emphasis is placed on the perspective of the interviewer rather than interviewee.

COM 484 Health Communication
3 hrs.
Studies concepts and theories relevant to the maintenance and enhancement of effective communication in health care settings. Emphasis is given to the study and application of communication theories, to the transactions which occur among health professionals, and between professionals and clients/patients. This course may be offered in an accelerated format.

COM 499 Internship
1–3 hrs.
This internship for academic credit is available only to those students who meet departmental requirements of prerequisite courses and grade point average. Specific requirements for various types of internships are described in the departmental undergraduate handbook, available in 300 Sprau Tower or from an undergraduate advisor.

Prerequisites applicable to all 500-level courses in Communication include junior or senior status, or consent of advisor and/or instructor.

COM 505 Special Topics in Communication
1–3 hrs.
Advanced group study of special topics in communication education, interpersonal and organizational communication, mass communication, oral interpretation, and film. Many of these special courses are organized in response to special needs or interests of students on campus, in the community and in the region. Some topics are announced in the Schedule of Classes; some are added during the semester. Further information and a full listing of topics may be obtained from the Department office, 301 Sprau Tower. Six hours of COM 505 and COM 555 approved by an advisor may be accumulated as credit toward a major or minor in communication.

COM 541 Telecommunications Law and Policy
3 hrs.
Provides an overview of the essential regulatory and policy issues governing the field of telecommunications. Special attention is given to such topics as libel, privacy, access and right to reply, and copyright. A case study approach is used for the purpose of understanding legal precedent. Prerequisite: Junior or senior standing and COM 200, or graduate standing.

COM 548 Telecommunication Management
3 hrs.
The course examines broadcasting, telephone, cable, and other new communication technologies, with a primary emphasis on principles of telecommunication management, economics, and policy. The course is supplemented with a series of case studies and discussions pertaining to select management issues. Prerequisite: Junior or senior standing, COM 200 and COM 240; or graduate standing.

COM 551 Methods of Media Analysis
3 hrs.
An investigation of the approaches to media analysis (auteurist, intentionalist, sociological, structural, historical, ideological, psychological) by intensive “reading” and shot sequence professional examination and evaluation of widely divergent works. Prerequisite: Junior or senior standing and COM 241 or COM 356; or graduate standing.

COM 554 Communication Technology
3 hrs.
This course provides an overview of telecommunications technology and services. The course is intended for the manager who requires a “practical” understanding of the design and performance characteristics of such telecommunication technology as satellite, optical fiber, PBX, and cellular telephone communications. In addition, this course will include an appropriate measure of economic, regulatory, and policy issues as they pertain to the development of new and enhanced telecommunication services. Prerequisite: Junior or senior standing and COM 240; or graduate standing.

COM 560 Studies in Communication Education: Variable Topics
3 hrs.
Selected studies in background, method, materials, and procedures in any one of the several speech areas. Possible topics include directing speech activities, communication behaviors of change agents, as well as others. Topics will vary from semester to semester and students may take one or all topics for credit.

COM 570 Studies in Communication: Variable Topics
3 hrs.
Selected areas of study within the total range of communication. Each topic carries separate credit, and a student may take any or all of the different offerings under COM 570. Selected topics each semester will be listed in the Schedule of Classes.

COM 591 Introduction to Communication Research
3 hrs.
In this introductory course, students will acquire skills and knowledge of basic research design, data collection, data analysis, computer usage, and report writing needed for the completion of a research project.

COMPARATIVE RELIGION
E. Thomas Lawson, Chair
H. Byron Earhart
David Ede
Nancy Falk
Francis Gross, Jr.
Timothy Light
Rudolf Siebert
Jonathan Silk
Brian C. Wilson

Religion courses are designed to give students (1) an understanding of the nature and role of religion in human societies, both past and present, both non-Western and Western, (2) a grasp of the various methods used by scholars to describe and explain religion, to assess achievements of these methods, and to develop new methods for increasing their knowledge of religious thought and practice, and (3) an opportunity for raising questions about the present and future significance of religious thought and practice. Many courses in the department are approved for General Education, and students can extend their general education to include knowledge of religious thought and practice and to relate their knowledge of religion to their knowledge derived from other disciplines in the University. The departmental major and minor are a good preparation for graduate study in religion and for a vocation associated with religion.

Recognizing the growing demand for graduates with cross-cultural experiences and second language abilities, the Department of Comparative Religion strongly encourages students majoring and minoring in Comparative Religion to participate in Western’s semester or year long study abroad program. Interested students should contact the chairperson of Comparative Religion and the Office of International Affairs as early as possible upon their arrival at Western Michigan University.

Baccalaureate Writing Requirement
Students who have chosen the Religion major will satisfy the Baccalaureate Writing Requirement by successfully completing REL 300 Writing About Religion.

Requirements for Majors and Minors
A major in religion consists of a minimum of 28 hours and includes REL 100 (Religions of the World) and REL 200 (Introduction to Religion), one course in the field of Historical Studies, and two courses from the remaining three fields (Constructive Studies, Methodological Studies, Comparative Studies). Two of these courses may be at the 400/500 level.

A minor in religion consists of a minimum of 10 hours and includes REL 100 (Religions of the World) and REL 200 (Introduction to Religion). One course is recommended in the field of Historical Studies; the remaining course should be taken in any of the remaining fields.

Courses By Topic
INTRODUCTORY STUDIES

100 Religions of the World
200 Introduction to Religion
HISTORICAL STUDIES
301 Buddhist Traditions
302 Religion in the Indian Tradition
303 Chinese Religion
304 African Religions
305 The Christian Tradition
306 The Jewish Tradition
307 The Islamic Tradition
308 Japanese Religion
500 Historical Studies in Religion

COMPARATIVE STUDIES IN RELIGION
311 Myth and Ritual
313 Religion in America
510 Morphology and Phenomenological Studies in Religion
511 Women in Religion

METHODOLOGICAL STUDIES IN RELIGION
320 The Philosophy of Religion
323 Religion and Revolution
324 Psychological Elements in Religion
520 Methodological Studies in Religion
521 The Teaching of Religion in the Public School

CONSTRUCTIVE STUDIES IN RELIGION
332 Religion and Social Ethics
334 Religion in Modern Society
496 Independent Study
530 Constructive Studies in Religion
598 Readings in Religion

SPECIAL REQUIREMENT
300 Writing About Religion

Religion Courses (REL)
A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

REL 100 Religions of the World 4 hrs.
An introduction to the religions of the world, which surveys themes in various religious traditions (such as Judaism, Christianity, Islam, Hinduism, Buddhism and primitive religions). The course studies how these religious traditions conceive of gods and world order, founders and saviors, religious experience and practice, and religious communities. The course will pay attention to the contemporary status and significance of these themes.

REL 200 Introduction to Religion 4 hrs.
An introduction to the study of religion intended to be universal in scope, theoretical and scientific in intent, and humanistic in orientation, of the nature and history of religion wherever it may be found, whatever its context, no matter what its forms, and attempting to raise whatever questions are necessary to illuminate its character. This will involve attention to more than one religious tradition, a discussion of the problems of definition, theory and method, an acknowledgment of the interdisciplinary aspects of much of the inquiry, and an examination of the consequences of this inquiry for problems of self-understanding in the context of western culture in general, and American society in particular.

REL 300 Writing About Religion 3 hrs.
This course enhances writing skills in the context of reading and discussing selected materials on religion. Emphasis is upon the process of writing, with writing assignments in class and outside class. Reading selections focus upon issues of contemporary interest. Required of all religion majors.

REL 301 Buddhist Traditions 4 hrs.
This course is an introduction to the panorama of Buddhist traditions in South, Central and East Asia. We will study the history of Buddhism, its characteristic doctrines and teachings, and try to assess the impact it has had on Asian societies. Special attention will be devoted to the problem of the religious ideals and how that is to be pursued. We will read scholarly studies on the traditions as well as original Buddhist texts in translations.

REL 302 Religion in the Indian Tradition 4 hrs.
This course draws its materials primarily from the great religious traditions native to India — i.e. Brahmanism, Buddhism, Janism, Sikhism, and Hinduism. It is concerned primarily with definitions of the human in these traditions: the problems that are perceived to be central to human life and the resources assumed to be available for such problems’ solution. To clarify problems, it examines social and political contexts in which various traditions have arisen. To exemplify solutions, it offers samples from religious literature, art, architecture, music, ritual, and spiritual discipline.

REL 303 Chinese Religion 4 hrs.
Religious life in China is characterized by an impressive variety of religions combined with a striking commonality of outlook. The centrality of religion and thought to all of Chinese life means that even contemporary China can be well understood only with reference to the persistent themes and practices of the past. The course will consider religious and philosophical Confucianism and Taoism, Buddhism, and how these different strands are woven into traditional and popular religion in China and even amalgamated into Chinese communism. The overall aim of the course is to examine how Chinese culture means to an individual growing up Chinese so that students taking the course may develop a grasp of the expectations of life, society, government, and behavior that are handed down from generation to generation in China.

REL 304 African Religions 4 hrs.
This course is designed to introduce the student to the complexity and varieties of the religions of Africa. This is done by focusing on the myriad religious ideas (of the gods, of ancestors, of persons, of origins, of death, of authority and status), practices (initiation, divination, sorcery), institutions which have emerged in the long history of Africa. The course pays particular attention to the results of colonialism on indigenous religions as well as to the emergence of new religious movements.

REL 305 The Christian Tradition 4 hrs.
This course draws its materials primarily from the great religious traditions within Christianity — Catholicism, Protestantism, and the Orthodox tradition. It offers a careful look at the early Christian myths which give rise to these traditions. It is concerned primarily with definitions of the human in these traditions: the problems that are perceived to be central to human life and the resources assumed to be available for such problems’ solution. To clarify problems, it examines social and political contexts in which various traditions have arisen. To exemplify solutions, it offers samples from religious literature, art, architecture, music, ritual and spiritual discipline.

REL 306 The Jewish Tradition 4 hrs.
This course traces the history and development of Judaism from its roots in the Ancient Near East to the present, and its role in the shaping of Western consciousness. Particular attention is given to the periods of radical social, political and cultural change in Jewish history and hence to the critical problem of Jewish identity. An analysis of Jewish writings, customs, and institutions taken from different periods of Jewish history reveals that Jewish people have discovered and expressed their identity within a religious framework that includes myths and rituals, festivals, and holy days, celebration of the past and anticipation of the future, as well as social movements and political revolutions.

REL 307 The Islamic Tradition 4 hrs.
A study of the most important factors involved in the development of both the Islamic religious tradition and Islamic civilization. The Pre-Islamic background, the life of Mohammed, the Qur’an, geographical expansion of the Muslim Community, Islamic law, mysticism, politics, philosophy, science and contemporary Islamic movements are the major topics for examination.

REL 308 Japanese Religion 4 hrs.
A study of the historical continuity and overall unity in the Japanese religious tradition. The major organized religions of Shinto and Japanese Buddhism, and also the influence of Taoism, Confucianism, and Christianity are discussed. Also taken up are the informal religious movements of "ancestor worship," family religion, and state religion. An attempt is made to assess the meaning of religion in Japanese culture.

REL 311 Myth and Ritual 4 hrs.
Eric Dardel, an anthropologist, has written: "Myth says with utmost seriousness something that is of essential importance." In this course an attempt will be made to discover just what this important something is and how it is actualized in certain rituals. Myths and rituals will be taken from a variety of historical traditions in order to reflect the cultural milieu of the communities whose lives are governed by them. Special problems to be considered will be the relationship between myth and cult, the problem of time and myth, the logic of mythic forms, etc.

REL 313 Religion in America 4 hrs.
This course is designed to introduce students to the full range of religious expression in the United States from the colonial period to the present. As such, it will focus not only on the history of specific groups, institutions, and denominations (e.g. Congregationalism, the Catholic Church, Reform Judaism, the nation of Islam, etc.), but also on those non-traditional and frequently non-institutional forms of religion which have had an impact on the development of American culture and society (e.g. utopian communalism, occult and metaphysical movements, the "New Age," etc.). In addition, this course will also address such religious themes as individualism, millenarian dominance, and civil religion while once prominent features of American culture at large, are now being brought into question as the United States enters a period of unprecedented cultural diversity and cultural change.

REL 320 The Philosophy of Religion 4 hrs.
An examination of the place of religion in human experience with special attention to the nature of religious language, the role and structure of religious concepts, the relation between religion and theology, and the logic of religious symbols.
REL 323 Religion and Revolution
4 hrs.
This course will explore, investigate and compare different religions in different cultures as driving forces of social and cultural change. The course will examine the conservative and progressive roles the religions of the world play in familial, social, economic, and political stability and change. Different approaches to analyzing these forces and roles will be examined, but particular emphasis will be placed upon the contribution of critical theory and its dialectical method of thinking. The course will stress communicative ethics and discourse theory of rights and of the democratic constitutional state.

REL 324 Psychological Elements in Religion
4 hrs.
This course is concerned with the correlation between religion and the human subject—the religious or a religious individual. The central interest of the course is with religious propensities, feelings, impulses, passions, attitudes, motivations, values, ideas, prejudices. Critical questions such as the following will be asked: What is the function of religious faith for the nervous stability; mental health and wholeness of the subject? Does religion reinforce or hinder the maturation process of the individual? Is the need for religion just a derivation from the child's feeling of helplessness and of the longing it evokes for a sublime father figure?

REL 332 Religion and Social Ethics
4 hrs.
This course will compare different forms of religious and secular ethics from ancient moral codes to contemporary ethical systems. It will deal with the creative ideas, problems and attitudes toward the social world intrinsic to these different ethical norms. While the course will emphasize the variety of ethical responses to social problems provided by the religions of the world as well as to secular approaches it will pay particular attention to problems raised and solutions proposed by critical theorists about issues such as abortion, euthanasia, artificial insemination, race, gender, class, war and peace, poverty and ecological catastrophes. The course will stress communicative ethics, the discourse theory of rights, and of the democratic constitutional state.

REL 334 Religion in Modern Society
4 hrs.
Whereas a major focus of the systematic study of religion is upon religious traditions, or aspects of them, it is important that attention be paid to the questions raised by the various contexts in which religion occurs as well as to the questions raised by the methods developed in studying religion in such contexts. The specific context of religion to be studied in this course is that of industrial society. For religion to be understood in more than historical terms it is important that attention be paid to this kind of context. As a consequence of such a focus questions also are raised about the methods developed to specify and delineate such contexts and the role that religion plays in them. This provides an occasion for raising questions about the assumptions underlying such methods and about their relationship to the systematic study of religion.

REL 400 Topics in Religion
4 hrs.
The topic to be announced in the Schedule of Classes. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: Religious Images of Man; Christian Humanism; the Structure of Religion, the Future of Religion; Religion, Language and Structuralism.

REL 498 Independent Study
1–6 hrs.
Research on some selected problem under supervision of a member of the Religion faculty. Approval of the instructor involved and Chairperson of the Department must be secured in advance of registration.

Undergraduates with junior status and two previous courses in Religion may enroll in 500-level courses.

REL 500 Historical Studies in Religion
2–4 hrs.
The topic to be announced in the Schedule of Classes. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: Zen Buddhism; Buddhism; Taoism; Shinto; New Religions of Japan; Religion in Japanese Literature; Islam in the Modern World; Christian Theology to 1500; Renaissance and Reformation Theology; Mystical Dimensions of Islam.

REL 510 Morphological and Phenomenological Studies in Religion
2–4 hrs.
The topic to be announced in the Schedule of Classes. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: Millenium, Utopia, and Revolution; Femininity as a Religious Form; Great Islamic Thinkers; the Hindu Yogas; the Occult Tradition.

REL 511 Women in Religion
3 hrs.
Drawing together materials from many religious traditions, this course explores religion's effect on women and women's effect on religion. It attends especially to women's roles in traditions studied—both roles allotted to women and roles women shape for themselves. It also traces repeating patterns in women's religious experience and evaluates common explanations for such patterns.

Prerequisites: Junior or senior level and two courses (6 hours) in either Religion or Women's Studies.

REL 520 Methodological Studies in Religion
2–4 hrs.
The topic to be announced in the Schedule of Classes. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: Scientific Issues in the Study of Religion; the Critical Theory; Myth and Symbol in Religion and Literature.

REL 521 The Teaching of Religion in the Public School
2 hrs.
This course focuses on methods and issues involved in the teaching of religion in the public school. Particular attention is given to the problems of its constitutionality, the distinction between the academic study of religion and religious instruction, and the question of meaning. Various approaches to the teaching of religion are critically evaluated. Teaching methods appropriate to the level of instruction, availability, organization, selection and use of materials are discussed.

Required of all students following a Secondary Education Curriculum which includes the Academic Study of Religions as a minor. (This course is not applicable to the regular religion major/minor program.)

REL 530 Constructive Studies in Religion
2–4 hrs.
The topic to be announced in the Schedule of Classes. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: Religious Images of Man; Christian Humanism; the Structure of Religion, the Future of Religion; Religion, Language and Structuralism.
THEORY AND ANALYSIS OPTION
The Theory and Analysis option includes additional emphasis in physics, science, and engineering, as well as the minor in mathematics. Students planning computer science as a profession or contemplating graduate study in computer science are urged to enroll in this major.

COMPUTER SCIENCE COURSES (42 hrs.)
CS 111 Computer Science I ............ 4
CS 112 Computer Science II .......... 4
CS 223 Computer Organization and 3
Assembly Language
CS 224 Systems Programming Concepts 3
CS 331 Data and File Structures 3
CS 460 Software Systems Development 3
CS 485 Programming Languages 3
CS 554 Operating Systems 3
Two approved non-language electives (see advisor) 9

REQUIRED MATHEMATICS COURSES (19 hrs.)
MATH 122 Calculus I .................. 4
MATH 123 Calculus II ................ 4
MATH 145 Discrete Mathematical Structures 3
MATH 230 Elementary Linear Algebra 4
MATH 364 Statistical Methods .......... 4

REQUIRED PHYSICS COURSES (10 hrs.)
PHYS 205 Mechanics and Heat 4
PHYS 206 Mechanics and Heat Laboratory 1
PHYS 207 Electricity and Light 4
PHYS 208 Electricity and Light Laboratory 1

REQUIRED ELECTRICAL ENGINEERING COURSES (6 hrs.)
EE 250 Digital Logic I ................ 3
EE 357 Computer Architecture .......... 3

REQUIRED SCIENCE COURSES Two approved laboratory science courses 6
suitable for majors in their respective disciplines. See advisor.

REQUIRED COMMUNICATIONS AND ETHICS COURSES (7 hrs.)
COM 104 Public Speaking .............. 3
PHIL 410 Professional Ethics .......... 4

APPROVED ELECTIVES Approved electives for the Computer Science—Theory and Analysis major can be:
CS 518, CS 520, CS 525, CS 526, CS 527, CS 530, CS 534, CS 555, CS 581, CS 582, CS 595. Electives must be approved in advance by the student’s advisor.

GENERAL EDUCATION
In addition to meeting general education requirements of the University and the College of Arts and Sciences, students must exhibit a minimum of 23 hours of course work in the social sciences and humanities (excluding COM 104 and PHIL 410). See advisor.

Computer Science—General Option
This major option is designed to provide the student with the fundamental concepts of computer science and a broader selection of electives in liberal arts and other fields. The major requires a minor in mathematics.

Students selecting this option are encouraged to consider completion of a second minor or perhaps a second major in some other field of interest.

COMPUTER SCIENCE COURSES (36 hrs.)
CS 111 Computer Science I ............. 4
CS 112 Computer Science II .......... 4
CS 201 Programming in FORTRAN ...... 2
CS 202 Programming in COBOL ...... 2
CS 223 Computer Organization and Assembly Language 3
CS 224 Systems Programming Concepts 3
CS 331 Data and File Structures 3
CS 460 Software Systems Development 3
CS 485 Programming Languages 3
CS 554 Operating Systems 3
Two approved non-language electives (see advisor) 6

REQUIRED MATHEMATICS COURSES (19 hrs.)
MATH 122 Calculus I .................. 4
MATH 123 Calculus II ................ 4
MATH 145 Discrete Mathematical Structures 3
MATH 230 Elementary Linear Algebra 4
MATH 364 Statistical Methods .......... 4

REQUIRED ELECTRICAL ENGINEERING COURSE (3 hrs.)
EE 250 Digital Logic I ................ 3
Approved electives can be CS 495, 518, 520, 525, 526, 527, 530, 531, 543, 555, 580, 581, 582, 595, MATH 440, 506, 507, 574, PHIL 520. Electives must be approved in advance by the student’s advisor.

MINORS

General Option

COMPUTER SCIENCE COURSES
CS 111 Computer Science I ............. 4
CS 112 Computer Science II .......... 4
CS 201 Programming in FORTRAN ...... 2
CS 202 Programming in COBOL ...... 2
CS 223 Computer Organization and Assembly Language 3
CS 331 Data and File Structures 3
Two approved electives (may be a 6
language course) (see advisor) ....... 5–6

REQUIRED MATHEMATICS COURSES
MATH 122 Calculus I .................. 4
MATH 200 Application and Analysis .... 4

SCIENCES OPTION

COMPUTER SCIENCE COURSES
CS 111 Computer Science I ............. 4
CS 112 Computer Science II .......... 4
CS 201 Programming in FORTRAN ...... 2
CS 223 Computer Organization and Assembly Language 3
CS 331 Data and File Structures 3
Two approved electives (see advisor), only one of which may be a 6
language course ....... 5–6

REQUIRED MATHEMATICS COURSES
MATH 122 Calculus I .................. 4
MATH 123 Calculus II ................ 4
MATH 230 Elementary Linear Algebra or
MATH 374 Introduction to Linear Algebra and Differential Equations .... 4
Computer Science Courses (CS)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

CS 104 Introductory C/C++ 2 hrs.
This course provides an introduction to programming using a subset of the C++ language. Topics covered will include: programming practices and structures, C++ syntax, variables, declaration types, arrays, assignment statements, loops, functions, scope of variables, pointers and basic input/output. Although classes are introduced, concepts of object-oriented programming will not be covered. Prerequisite: One and one-half year of high school algebra or MATH 111.

CS 105 Introduction to Computers 3 hrs.
This course, which consists of one hour of lecture and two hours of laboratory/recitation each week, provides an introduction to computers and their applications. Topics include computer terminology and social and ethical issues of computing. Students will be introduced to a variety of computer applications which may include spreadsheets, databases, word processing or an introduction to the BASIC programming language. Recitation and laboratory sections may vary according to the applications covered. Students will also be introduced to the campus network and system utilities available there. A student may not receive credit for both BIS 102 and CS 105. This course may not be used in computer science major or minor programs.

CS 106 Introductory Visual BASIC 1 hr.
This course provides an introduction to programming in the BASIC language using Visual BASIC. It is designed primarily to give students enough background so they can use BASIC in further course work. Prerequisite: 11/2 years of high school algebra or MATH 111. This course does not fulfill the computer literacy requirement.

CS 110 Introduction to Computer Programming Using BASIC 3 hrs.
This course is designed for those with little previous programming experience beyond computer literacy. The emphasis is on non-numeric problem solving. Students learn about system commands necessary to create and execute computer programs written in a high-level programming language and are introduced to problem solving, program design, coding, and debugging using the BASIC programming language. Programming assignments are given to build technical skill. These general language concepts will be discussed: program syntax, declaration and assignment, conditional statements (if-then-else), loops (for and while), arrays, executable instructions, subroutines, recursive functions and subroutines, and error handling. This course cannot be used for a major or minor in computer science major or minor programs.

CS 111 Computer Science I 4 hrs.
A first course in the science of programming digital computers. Analysis of problems and development of efficient solution procedures for their solution will be emphasized along with the expression of algorithmic solutions to problems in a structured high-level computer language. Applications will solve both numerical and non-numerical problems for the computer. Co-require: MATH 118.

CS 112 Computer Science II 4 hrs.
This course is a continuation of Computer Science I with more emphasis on top-down, modular, structured design and techniques involved in the production of large computer programs. Advanced language features such as recursion, sets, pointers, records/structures will be discussed. Data structures and their various implementations are introduced. Design and analysis of various searching and sorting techniques will be presented. Elementary file processing using sequential and random access input and output will be demonstrated. A team project will be assigned. Prerequisite: CS 111; co-require: MATH 122 or MATH 200.

CS 200 Programming Language Experience 2 hrs.
Details of a specific computer programming language are presented. The name of the specific language discussed will appear in the student's transcript. Students obtain practice by writing programs in the language. This course assumes knowledge of the use of the computer system and editor and basic programming concepts. It is suitable for anyone wishing to learn the specific language being taught. Course can be repeated for credit in a different language. Prerequisite: CS 110 or CS 111 and 1 1/2 years of high school algebra or MATH 111.

CS 201 Programming in FORTRAN 2 hrs.
Details of the FORTRAN computer programming language are presented. Students obtain practice by writing programs in the language. This course assumes knowledge of the use of the computer system and editor and basic programming concepts. Credit will not be given for both CS 201 and CS 306. Prerequisite: CS 110 or CS 111 and one and one-half years of high school algebra or MATH 111.

CS 203 Programming in C 2 hr.
Details of the C computer programming language are presented. Students obtain practice by writing programs in C. The course assumes knowledge of a computer system, editors, and basic programming concepts. Substantial programming in a structured high-level language. Prerequisite: CS 110 or equivalent.

CS 202 Programming in COBOL 2 hrs.
Details of the COBOL computer programming language are presented. Students obtain practice by writing programs in the language. This course assumes knowledge of the use of the computer system and editor and basic programming concepts. Prerequisite: CS 110 or CS 111 and one and one-half years of high school algebra or MATH 111.

CS 204 Programming in C++ 2 hrs.
Details of the C++ computer programming language are presented. Students obtain practice by writing programs in C++. The course assumes knowledge of a computer system, editors, and programming concepts. Prerequisite: Substantial programming in a structured high-level language.

CS 223 Computer Organization and Assembly Language 3 hrs.
This course introduces concepts of computer architecture and assembly language. CISC and RISC instruction sets, along with associated hardware issues (e.g., data representation and instruction formats, instruction pipelining, register windows, context switching, and memory management) will be discussed. The student will program in both assembly language and the C programming language as well as interfacing the two languages. Prerequisite: CS 111.

CS 224 System Programming Concepts 3 hrs.
Topics include: program development tools, basic testing, timing, profiling and benchmarking, characteristics of physical devices, memory management, device drivers, pseudo-devices, file I/O (both buffered and unbuffered), processes, shells, inter-process communications, signals, exceptions, pipes, sockets, shared memory and file and record locking. All topics are viewed from a UNIX system programming perspective. Prerequisite: CS 112 and CS 223.

CS 299 Professional Concerns for Computer Scientists I 2 hr.
This writing-intensive course explores the different things computer scientists do and how it affects the world around them. It teaches about the use of research tools such as library and electronic tools. Emphasis is placed on oral and written communication skills. Professionalism and professional societies are discussed. Students are required to become involved with the profession outside of class.

CS 302 Teaching of Computer Science 3 hrs.
This course deals with the problems and current trends of teaching high school computer science. The main emphasis is on effective methods of instruction. Practical methods of selection, organization, and maintenance of hardware and software are also considered. Topics such as computer literacy, the computer as a problem-solving tool, issues in computing, and related computer applications will be considered and discussed. This course does not carry credit towards a Computer Science Major or Minor; however, it is required course for those in Secondary Education. Prerequisites: CS 105, CS 112, and junior status.

CS 306 Introductory Programming: FORTRAN 2 hrs.
An introduction to computer programming using the FORTRAN language (FORmula TRANslation). Prerequisite: One and one-half years of high school algebra or MATH 111. Credit will not be given for both CS 201 and CS 306. This course will not be used towards a major or minor in Computer Science.

CS 331 Data and File Structures 3 hrs.
This course focuses on the study of internal and external data structures and algorithms with an ongoing emphasis on the application of software engineering principles. Trees, graphs and the basic algorithms for creating, manipulating and using them will be studied. Various types of hash and indexed random access file structures will be discussed and implemented. B-trees and external file sorting will be introduced. Internal and external data and file organizations and algorithms will be compared and analyzed. Students will carry out a number of programming projects which will include the various interface (person-to-person, module-to-module, person-to-module-to-person) aspects of the software development process. Prerequisite: CS 112 or equivalent.

CS 402 Introductory Microcomputer Concepts for Teachers 3 hrs.
This course is designed to provide teachers with a minimum foundation in computer concepts and programming. Emphasis is on the use of the BASIC language to perform a variety of educational applications on
microcomputers. Computer terminology and capabilities are explored as well as the significance of computers in contemporary society. Students will write a number of programs and will receive an introduction to the use of standard system software. Flowcharting is introduced. Examples of Computer Assisted Instruction will be given. Not for Computer Science majors and minors (except teaching). Prerequisite: MATH 150 or equivalent.

CS 412 Professional Field Experience 1–3 hrs.
This course allows students to receive academic credit for professional work experience in the computing field. The work activities must require significant computer science knowledge and education. This course may not be taken for work already completed and may not be used for computer science major or minor elective. If it is a credit/no credit course and may be taken for a maximum of three credit hours. Prerequisite: CS 331, or equivalent, and approval in advance by the Department.

CS 443 Data Base Management Systems (DBMS) 3 hrs.
This course presents the fundamental concepts and practices of data base management systems. The data base environment and administration are defined along with the roles of the data base administrator and the data dictionary. Conceptual and logical models are discussed. The three approaches—relational, hierarchical and network—are briefly described. Data access techniques such as sequential and multi-level sequential indexes, linked lists, inverted files and hashing are briefly reviewed. A few commercial systems will be surveyed. Security, reliability and integrity will be studied. Students will acquire experience with the various topics by applying them to an actual data base system. Students will also write applications which use the data base system. Not for Computer Science Majors (except Teaching major). Prerequisite: CS 202 or BIS 362. A student may not receive credit for both CS 443 and CS 543.

CS 460 Software Systems Development 3 hrs.
This is a project course in software engineering that leads teams of students through a software development cycle. The project includes analysis and specification, design, implementation, and testing of software systems. Life cycle models, planning, software quality assurance and maintenance are also discussed. Each student team works on a real project throughout the course. Teams produce a variety of documents and participate in formal product demonstrations open to clients and the public at the end of the course. This course meets the University baccalaureate-level writing requirement. Prerequisite: CS 331.

CS 485 Programming Languages 3 hrs.
Properties of various programming languages including scope of declarations, storage allocation, control structures and formal parameters are studied, as well as run time representation of programs and data structures. A study of compilers and interpreters will be made. This will include loading, execution, storage allocation, symbol tables, lexical scan, parsing and object code generation. The relation of automata to formal languages and grammars will be discussed. Prerequisites: CS 331.

CS 495 Topics in Computer and Information Science 3 hrs.
The content of this course varies. It is intended to introduce the student to significant topics which are not normally offered as separate courses. This course may be taken more than once with the approval of the student's advisor. Prerequisite: Approval of Department.

CS 496 The Computer Science Profession 1 hr.
This course examines the role of the computer scientist in society. Topics covered are designed to promote awareness of professional, ethical, and societal issues in the field of computer science. Prerequisite: Senior status.

CS 499 Professional Concerns for Computer Scientists II 2 hr.
This course discusses the role of the computer scientist in society. It prepares students for their next step in their career as a computer scientist. The second major theme of the course promotes awareness of professional issues such as legal and written communication will be stressed. Students are required to become involved with the profession outside of class. Prerequisite: Senior status.

500-Level Computer Science courses are open to juniors and seniors who have met the specific course prerequisites or have the permission of the instructor.

CS 503 Programming the Microcomputer for Teachers 3 hrs.
A course in programming at an intermediate level for teachers. An introduction to file handling and graphics on small computers will be provided. Flowcharting, top-down design and the development of algorithms are stressed. Some programming projects in each teacher's area of interest will be assigned. Not for Computer Science majors or minors (except teaching). Prerequisite: CS 402 or equivalent experience.

CS 518 Introduction to Computer Modeling and Simulation 3 hrs.
This course provides an overview of both model development and simulation. A methodology is introduced which is generally applicable to simulation projects. The relationships between real systems, models, and simulation are presented, and the concept of experimental frames is discussed. General purpose simulation languages (e.g., Simscript, GPSS, CSMP, Simula) and the formalisms they support are presented. An introduction to random variables and elementary frequency distributions is provided. Simulation as a tool for exploring ill-defined systems will be discussed. Several small programs and a simulation project will be assigned to each student. Prerequisite: CS 331 and a course in probability or statistics.

CS 520 Algorithms for VLSI Design 3 hrs.
Students will be expected to learn the basics of VLSI technology. The course will include a project involving the design of VLSI systems. Different phases of the physical design, algorithms for logic partitioning, placement, global routing, channel generation and local routing will be covered. Additional topics may include algorithms for circuit compaction, circuit extraction and rule checking. Prerequisites: EE 250 and CS 331.

CS 525 Computer Architecture 3 hrs.
General topics in computer architecture, memory systems design and evaluation, pipeline design techniques, RISC architectures, vector computers, VLSI systems architecture. Prerequisite: EE 250, CS 223 or EE 251, and CS 331.

CS 526 Parallel Computations I 3 hrs.
Parallel Computations I will cover architecture, synchronization and communication aspects of parallel and distributed systems. This course will focus on the design and analysis of algorithms which have a prototype treatment on current machines. These algorithms may include parallel sorting, combinatorial search, graph search and traversal, applications in graphics, 2-d finite differences, 2-d finite element techniques, matrix algorithms and the Fast Fourier Transform. Prerequisite: CS 331.

A first course in the design of interactive computer graphics systems. Currently available hardware and software systems are described. Emphasis is on theoretical considerations in the design of interactive computer graphics systems. Prerequisites: MATH 230 and CS 331.

CS 530 Artificial Neural Systems 3 hrs.
An introduction to neural net concepts, algorithms, and applications. A history of neural nets will be presented along with some discussion of models of biological neural systems. The salient features of neural nets (architecture, activation functions, weighting scheme) will be characterized. Standard algorithms will be presented including Hopfield nets, linear associative mode bidirectional associative memories, and adaptive resonance models. The student will use neural net software to experiment with standard models to develop an application for a project. Prerequisite: CS 331. An introductory statistics course is recommended.

CS 531 Design and Analysis of Algorithms 3 hrs.
A continuation of the study of data structures and algorithms. It provides a theoretical foundation in designing algorithms. The focus is on the advanced analysis of algorithms and on how the selections of algorithms affects the performance of algorithms. Algorithmic paradigms such as divide and conquer, greedy method, dynamic programming, backtracking and branch and bound are covered. B-trees and 2-3 search trees and a variety of graph structures are discussed along with their applications to algorithm implementation. Algorithms will be analyzed for their complexity.

NP-completeness will be introduced. Prerequisites: MATH 145 and CS 331 or equivalent.

CS 543 Principles of Database Management Systems 3 hrs.
The fundamental concepts of database design and efficient usage are presented. Topics include an overview of databases, the three data models—relational, hierarchical, and network; conceptual, logical, and physical database design and evaluation. The design theory of relational data and software systems is emphasized. Query languages, query optimization, security, integrity, and concurrency control are covered. A student may not receive credit for both CS 443 and CS 543. Prerequisite: CS 331.
CS 544 Software Systems Development
3 hrs.
Advanced computer programming techniques used in the specification, design and implementation of large software systems. Testing and maintenance of software systems. Modular programming, top-down structured design, composite design, HIPPO, project management. Emphasis is placed on the solution of large software system problems, using a team approach. Prerequisite: CS 331.

CS 554 Operating Systems
3 hrs.
The internal and external views of computer operating systems are presented. A historical survey of the development and growth of operating systems is given. Fundamentals of systems and system design are stressed. Basic concepts and terminology are emphasized. Processes, communications and synchronizations, deadlocks, scheduling, shared resources, resource allocation, and deallocation, memory management, files management, and protection are discussed. Applications to real systems are investigated to motivate the ideas presented. Students build or run simulations and modify the internals of a working operating system. Prerequisites: CS 224 and CS 331.

CS 555 Computer Networks and Distributed Systems
3 hrs.
The design and evaluation of computer networks using current hardware and software are explained. Various types of computer buses, local area networks, and long haul networks are defined. Case studies of popular networks are presented. Layered network models are studied. There is lab work with local area and long haul networks. Prerequisite: CS 224 and CS 331.

CS 580 Theory of Computation
3 hrs.
Provides an introduction to the theory of computation in the framework of programming languages. Basic definitions and concepts dealing with algorithms, sets, relations, functions, induction operations on functions and cardinality are covered. Primitive and partial recursive functions are defined and their properties treated with application to coding techniques. The Chomsky hierarchy of languages, including recursive and recursively enumerable sets and their acceptors, is introduced. Students are assigned theoretical as well as implementation oriented problems. Prerequisites: CS 331 and MATH 145.

CS 581 Compiler Design and Implementation
3 hrs.
Students are introduced to major aspects of compiler design. These include lexical analysis, parsing, and translation. Each student will implement a small compiler using modern compiler writing tools. Prerequisite: CS 485 or CS 580.

CS 582 Artificial Intelligence
3 hrs.
This course provides an overview of artificial intelligence including basic A.I. techniques and concepts, e.g., production systems, heuristic searching techniques, knowledge representation, predicate calculus, and pattern recognition. It introduces A.I. application areas such as game playing, expert systems, vision, natural language processing, and learning. Prerequisite: CS 331.

CS 595 Advanced Topics in Computer and Information Science
1–3 hrs.
The content of this course varies. It is intended to introduce the student to advanced topics which are normally offered as separate courses. The course may be taken more than once with approval of the student's advisor. Prerequisite: Approval of Department.

CS 599 Independent Study in Computer Science
1–3 hrs.
Advanced students with good scholastic records may elect to pursue independently the study of some topic of special interest. Topics are chosen and arrangements are made to suit the needs of each particular student. Prerequisite: Written approval of instructor.

CRIMINAL JUSTICE PROGRAM
See Sociology Department in the College of Arts and Sciences

ECONOMICS
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Economists study fundamental problems arising from scarcity such as how to manage resources efficiently, how to organize individual and social efforts to improve standards of living, and how to avoid excessive unemployment and inflation. They also apply rational decision-making procedures to complex questions. Economists analyze policies in such specific areas as international trade, money and credit, government finance, industrial organization, labor and other resources, and economic development.

You may select economics as a field of study in order to obtain professional training for business, law, journalism, public administration, foreign service, teaching, and social work; to prepare for graduate work in economics; and/or to gain an understanding of the economy as an essential part of the modern world. Several courses are designed to contribute to General Education by providing basic understanding of the U.S. economy, as well as other economies throughout the world.

A career as a professional economist typically requires graduate study and a master's or doctoral degree in economics. Economics is a prestigious major or minor that is appreciated by prospective employers who recognize it as a demanding curriculum. A minor in economics consists of a minimum of 15 hours in the department. A major in economics consists of a minimum of 30 hours of credit in the department. The following are required courses for majors: Principles of Microeconomics (201), Principles of Macroeconomics (202), Introductory Economic Statistics (402), Intermediate Microeconomics (403), Intermediate Macroeconomics (406), and Econometrics (409). Majors should choose the remainder of their economics courses in consultation with the undergraduate advisor. A major in economics is also required to take Calculus I (MATH 122) as a cognate course. Those who intend to do graduate work in economics are advised to take additional mathematics courses, such as MATH 123, 272, and 374.

The undergraduate advisor of the department will assist students in selecting courses suited to their needs in fulfilling the minor and major requirements.

The honors program of the Department of Economics is designed for the student who possesses special talents and abilities and who is particularly interested in exploiting them to the fullest extent. Students wishing to
This course cannot be used to satisfy major or minor requirements in Economics.

3 hrs. Fall, Winter

Issues can be found in "Academic Policies and Procedures" earlier in this catalog.

ECON 598 Readings in Economics
ECON 591, 592 Guest Economist Seminar

SPECIAL STUDIES

588 Economic Development

LABOR AND RESOURCE ECONOMICS

309 Women and the Economy
310 Labor Economics
318 The Economics of Medical Care
319 Environmental Economics
515 Economics of Human Resources

MONEY, CREDIT AND FINANCE

320 Money and Banking
324 Public Finance
507 Monetary Theory and Policy
525 State and Local Government Finance

INDUSTRIAL ORGANIZATION AND PUBLIC CONTROL

304 The Organization of Industries
345 Business, Government and Society

INTERNATIONAL ECONOMICS

380 International Economics
385 Central and East European and Central Asian Economies
387 Studies in Asian Economies
388 African Economies
389 Latin American Economies
484 Comparative Economic Systems
588 Economic Development

SPECIAL STUDIES

591, 592 Guest Economist Seminar
598 Readings in Economics

Economics Courses (ECON)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

ECON 108 Contemporary International Economic Issues
3 hrs. Fall, Winter

A nontechnical economic approach to understanding important contemporary international issues and problems. This course focuses on topics such as international trade, finance, populations, migration, agriculture, the environment, and developing and transitional economies. This course cannot be used to satisfy major or minor program requirements in Economics.

ECON 109 History of Modern Economic Society
3 hrs. Fall

A survey of the evolution of modern economic society from premarket conditions to the present day. Topics include premarket economies, emergence of the market system, the industrial revolution, the Great Depression, the evolution of mixed capitalism, and the modern economic system. This course cannot be used to satisfy major or minor program requirements in Economics.

ECON 201 Principles of Microeconomics
3 hrs. Fall, Winter, Spring, Summer

An introduction to microeconomics, the study of the price system and resource allocation, problems of monopoly, and the role of government in regulating and supplementing the price system.

ECON 202 Principles of Macroeconomics
3 hrs. Fall, Winter, Spring, Summer

This course examines the various ways in which the organization of industries affects pricing and other business behavior and more generally, competition and resource allocation. The topics covered will include the theory of competitive markets, the theory of monopoly and the theories of oligopoly. The course will address the economic implications of various horizontal and vertical agreements among firms in industries. Prerequisite: ECON 201.

ECON 309 Women and the Economy
3 hrs. Fall or Winter

This course studies the role of women in the economy, both in the labor force and the household, and women’s economic status. Topics covered include gender discrimination, the feminization of poverty, and the effects of public policies on the economic status of women. Prerequisites: ECON 107 or 201 and 202.

ECON 310 Labor Economics
3 hrs. Fall, Winter, Spring or Summer

An analysis of the nature and underlying causes of the problems facing the worker in modern economic society. Includes an examination of unions, collective bargaining, labor legislation, unemployment, and economic insecurity. Prerequisites: ECON 201 and 202.

ECON 318 The Economics of Medical Care
3 hrs. Fall or Winter

This course is designed to familiarize the student with the basic economic problems that exist in the field of medical care. It introduces to the student some basic economic tools which are useful in analyzing these problems. The demand for medical care, the supply of health services, the role of health insurance, and pricing and output decisions are analyzed. Various policy questions are also raised, and the pros and cons of alternative policies are presented. Finally, the role of planning in the reorganization and delivery of medical care services is discussed. Prerequisites: ECON 201 and 202, or permission of instructor.

ECON 319 Environmental Economics
3 hrs. Fall, Winter, Spring and/or Summer

The study of economic aspects of environmental problems. Benefit-cost analysis is introduced and applied to problems in the management of air, water and other natural resources. Environmental problems of selected industries—including transportation and electric power—are analyzed. Prerequisite: ECON 201.

ECON 320 Money and Banking
3 hrs. Fall, Winter, Spring and/or Summer

An analysis of the role of money and its impact on the economy on inflation, unemployment, interest rates, income, and foreign exchange. The operations and relationships of commercial banks and the Federal Reserve are examined. Prerequisites: ECON 201 and ECON 202.

ECON 324 Public Finance
3 hrs. Fall, Winter, Spring or Summer

Practices, effects, and policy issues in federal government budgeting, spending, taxation, borrowing and debt, with particular attention to individual and corporate income taxation. Prerequisites: ECON 201 and 202.

ECON 345 Business, Government, and Society
3 hrs. Fall, Winter, Spring or Summer

This course examines the interrelationships among business, government and society. The course attempts to provide insights into how, when and why government policy towards business firms can either benefit or harm society. Topics covered include antitrust policies, economic regulation and social regulation. Prerequisite: ECON 201.

ECON 380 International Economics
3 hrs. Fall, Winter, Spring and/or Summer

A study of the fundamentals of international trade and related problems, with special reference to the implications of the international economic policies of the United States both for the economy and for the firm. Prerequisites: ECON 201 and ECON 202.

ECON 385 Central and East European and Central Asian Economies
3 hrs. Fall or Winter

This course examines the interaction between economic and cultural changes emerging during periods of transition in Central and East European and Central Asian economies. Prerequisite: A college-level economics course.

ECON 387 Studies in Asian Economies
3 hrs. Fall or Winter

This course examines the interaction between economic and cultural changes emerging during periods of transition in Central and East European and Central Asian economies. Prerequisite: A college-level economics course.

ECON 388 African Economies
3 hrs. Fall or Winter

This course provides students with an understanding of the crucial role of culture and tradition in shaping the economic evolution of African nations. It is intended for undergraduate majors and minors in African Studies, Black Americana Studies, Economics, Environmental Studies, international business, and other undergraduate students interested in comparative economic and cross-cultural issues focused on Africa. Prerequisite: A college-level economics course.

ECON 389 Latin American Economies
3 hrs. Fall or Winter

An examination of the economic problems and challenges of the Latin American region.
and certain advanced courses that may be appropriate to the interests and background of the student. Many of these English courses may be used to satisfy General Education requirements.

English advisors will help any student select courses in writing, English language, or literature which will be useful in General Education or as background for a career. Advisors' offices are on the sixth floor of Sprau Tower (phone 387-2575).

Majors and Minors

1. The requirements for the English majors (listed below) allow students some choices in their courses of study. As soon as students decide to major in English they should confer with one of the English advisors, who can help plan the major. All major programs must be approved by an English advisor. Minor slips are required for all minors. Students minoring in English should see the advisor as soon as possible after they begin work on the minor.

2. A minimum of 20 hours is required for a major in English. 20 hours are required for a minor, and 21 hours for students in the Elementary Education curriculum. Students are urged, however, to take as many additional hours as they can. In particular, students planning to teach or attend graduate school should consider taking additional work in preparation for these programs.

3. Only courses in which a grade of "C" or better is earned may be applied to an English major or minor.

4. Foreign Language Requirement: Eight semesters hours of a foreign language, or two years of foreign language in high school provided final semester grade is "B" or better, or an appropriate score on a placement exam. The department recommends as much additional work in the language as students can manage.

5. Special Note to Transfer Students. All transfer students majoring or minoring in English should consult with one of the English department's undergraduate advisors (387-2575) about transferring credit in English courses from other colleges. An English major or minor should see the advisor as soon as possible after they begin work on the major. ED 302, ENGL 307, 308, or 309 may be used to satisfy the requirement of one course from those listed under 2.A. and 2.B.

6. Foreign Language Requirement

5. Professional Component (4 hrs.)

ENGL 479 Writing in the Secondary School

3. Recommendation

English Majors in the Secondary Education Curriculum should choose ENGL 112 Literary Classics or ENGL 312 Western World Literature as General Education courses, satisfying AREA II: Humanities. Those who do not take a world literature course for General Education credit, must take one course in world literature within the English major. They may meet this requirement by electing ENGL 583 to satisfy requirement II or by electing ENGL 312 or ENGL 583 as one of the electives satisfying requirement III.

4. Elective Courses

At least two additional English Department courses at the 200, 300, 400, or 500 levels to complete the major, unless an elective course has already been taken under #2 above. The following courses cannot be used for this purpose: ENGL 100, 105, 107, 111, 112, 207, 208, 307, 308, or 311.

5. Professional Component (4 hrs.)

ENGL 480, Teaching of Literature in the Secondary Schools, is required for certification but does not count toward the required minimum of 34 credit hours to complete the major. It is recommended that one of these courses emphasize development of writing skills. The following courses cannot be used for this purpose: ENGL 100, 105, 107, 111, 112, 307, 308, or 311.

6. Foreign Language Requirement

Minimum of two semesters of a modern or classical foreign language at the college level, or two years of such study at the high school level. One year at the high school level coupled with the second semester of the same language at the college level is also satisfactory.

Secondary Education Curriculum

34 hours plus 4-hour Professional Component

1. Required Entry-Level Course (4 hrs.)

ENGL 110 Literary Interpretation

2. Required Courses (27-28 hrs.)

A. Three of the following four:

ENGL 320 American Literature I 3
ENGL 321 American Literature II 3
ENGL 330 British Literature I 3
ENGL 331 British Literature II 3

B. One of the following three:

ENGL 371 Structures of Modern English 4
ENGL 372 Development of Modern English 4
ENGL 472 American Dialects 4

C. Two courses at the 400 level, including at least one of the following four:

Students who use ENGL 452 to satisfy the requirement 3.C. may not use that course to satisfy requirement 3.B. 4.B. may not use that course to satisfy this requirement.

ENGL 451 Practical Literary Criticism 4
ENGL 440 Studies in Verse 4
ENGL 442 Studies in Drama 4
ENGL 444 Studies in the Novel 4

D. At least two of the following courses:

2 of these courses must be at the 200, 300, 400, or 500 levels.

ENGL 452 Shakespeare Seminar 4
ENGL 522 Studies in American Literature 3
ENGL 530 Medieval Literature 3
ENGL 531 Renaissance Literature 3
ENGL 534 Restoration and 18th Century Literature 3
ENGL 536 Romantic Literature 3
ENGL 537 Modern Literature 3
ENGL 555 Studies in Major Writers 3

4. Elective Courses

At least one additional English Department course at the 200, 300, 400, or 500 levels to complete the major, unless an elective course has already been taken under #2 above. The following courses cannot be used for this purpose: ENGL 100, 105, 107, 111, 112, 307, 308, or 311.

5. Professional Component (4 hrs.)

ENGL 480, Teaching of Literature in the Secondary Schools, is required for certification but does not count toward the required minimum of 34 credit hours to complete the major. It is recommended that one of these courses emphasize development of writing skills. The following courses cannot be used for this purpose: ENGL 100, 105, 107, 111, 112, 207, 208, 307, 308, or 311.

6. Foreign Language Requirement

Minimum of two semesters of a modern or classical foreign language at the college level, or two years of such study at the high school level. One year at the high school level coupled with the second semester of the same language at the college level is also satisfactory.

Baccalaureate Writing Requirement

Students who have chosen an English major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

ENGL 302 Literary Journalism
ENGL 415 Practical Literary Criticism
ENGL 440 Studies in Verse
ENGL 442 Studies in Drama
ENGL 444 Studies in the Novel
ENGL 452 Shakespeare Seminar

Students who have chosen a Journalism major will satisfy the Baccalaureate Writing Requirement by successfully completing JRN 420 Obligations of Contemporary American Journalism.
Creative Writing Emphasis

34 hours
1. Required Entry-level Course (4 hrs.)
ENGL 110 Literary Interpretation ... 4
2. A. Required Writing Courses (14 hrs.)
ENGL 266 Writing Fiction and Poetry ... 4
ENGL 566 Creative Writing Workshop ... 4
B. Plus six (6) hours of credit from the following courses. Any of these courses may be repeated one time for credit.
ENGL 366 Advanced Fiction Writing ... 3
ENGL 367 Advanced Poetry Writing ... 3
ENGL 368 Playwriting ... 3
3. Literature and English Language Courses (13-14 hrs.)
A. Two of the following courses:
ENGL 320 American Literature I ... 3
ENGL 321 American Literature II ... 3
ENGL 330 British Literature I ... 3
ENGL 331 British Literature II ... 3
B. One of the following courses:
ENGL 440 Studies in Verse ... 4
ENGL 442 Studies in Drama ... 4
ENGL 444 Studies in the Novel ... 4
C. One additional English Department literature or English language course at the college level, or 200, 300, 400, or 500 levels.
4. Electives
At least one additional English Department course at the 200, 300, 400, or 500 levels to complete the major. The following courses cannot be used for this purpose: ENGL 100, 105, 107, 111, 112, 307, 308, 311, or 480.
5. Foreign Language Requirement
Minimum of two semesters of a modern or classical foreign language at the college level, or two years of such study at the high school level. One year at the high school level coupled with the second semester of the same language at the college level is also satisfactory.

Journalism Major

37 hours
1. Required Entry-level Courses (7 hrs.)
ENGL 110 Literary Interpretation ... 4
COM 240 Introduction to Communication Theory ... 3
2. Required Journalism Core Courses (16 hrs.)
JRN 102 Introduction to Newswriting ... 4
JRN 200 Journalism Research ... 4
JRN 300 Newswriting and Reporting ... 4
JRN 301 Copy and Content Editing ... 4
3. Advanced Journalism (4 hrs.)
JRN 400 Reporting Public Affairs ... 4
4. Electives (6-8 hrs.)
JRN 401 Electronic Editing ... 3
ENGL 362 Literary Journalism ... 3
ENGL 364 Feature and Article Writing ... 3
ENGL 365 Reviewing for the Press ... 3
ENGL 462 Advanced Writing ... 4
ENGL 464 Professional Writing ... 4
COM 240 Introduction to Telecommunication ... 3
COM 359 Broadcast Journalism ... 3
COM 441 Documentary in Film and Television ... 3
COM 444 Advanced Communication News and Public Affairs ... 3
COM 477 Communication Ethics: Honesty and Deception ... 3
5. Required Entry-Level Course (4 hrs.)
ENGL 110 Literary Interpretation ... 4
6. Required Courses (18 hrs.)
ENGL 355 International Telecommunications ... 3
COM 541 Telecommunications Law and Policy ... 3
5. Capstone Experience (3 hrs.)
JRN 420 Obligations of Contemporary American Journalism ... 3
6. Internship (1 hr.)
JRN 495 Internship/Fieldwork ... 1
Minimum of 65 credit hours in College of Arts and Sciences courses not including courses in journalism or mass communication. These 65 credits must include at least one course in American Literature (ENGL 222, ENGL 320, or ENGL 321), at least one in history, and at least one in political science.

Practical Writing Emphasis

34 hours
1. Required Entry-Level Course (4 hrs.)
ENGL 110 Literary Interpretation ... 4
2. Required Courses (18 hrs.)
ENGL 305 Practical Writing OR JRN 102 Introduction to Newswriting ... 4
ENGL 362 Literary Journalism ... 3
ENGL 364 Feature and Article Writing ... 3
ENGL 462 Advanced Writing ... 4
ENGL 464 Professional Writing ... 4
3. Language and Literature Courses (10-12 hrs.)
A. Two courses chosen from among the following:
ENGL 320 American Literature I ... 3
ENGL 321 American Literature II ... 3
ENGL 330 British Literature I ... 3
ENGL 331 British Literature II ... 3
ENGL 371 Structures of Modern English ... 4
ENGL 372 Development of Modern English ... 4
ENGL 472 American Dialects ... 4
B. One course chosen from the following:
ENGL 415 Practical Literary Theory ... 4
ENGL 440 Studies in Verse ... 4
ENGL 442 Studies in Drama ... 4
ENGL 444 Studies in the Novel ... 4
ENGL 452 Shakespeare Seminar ... 4
4. Electives
At least one additional English Department course at the 200, 300, 400, or 500 level to complete the major. The following courses cannot be used for this purpose: ENGL 100, 105, 107, 111, 112, 307, 308, 311, or 480.
5. Foreign Language Requirement
Minimum of two semesters of a modern or classical foreign language at the college level, or two years of such study at the high school level. One year at the high school level coupled with the second semester of the same language at the college level is also satisfactory.

Minors

Arts and Sciences Curriculum

20 hours
1. Required Entry-level Course (4 hrs.)
ENGL 110 Literary Interpretation ... 4
2. Literature Courses (9 hrs.)
Three courses chosen from among the following:
ENGL 320 American Literature I ... 3
ENGL 321 American Literature II ... 3
ENGL 330 British Literature I ... 3
ENGL 331 British Literature II ... 3
ENGL 371 Structures of Modern English ... 4
ENGL 372 Development of Modern English ... 4
ENGL 472 American Dialects ... 4
3. Electives
At least two additional English Department courses, one of which must be at the 300 or 400 level. The following courses cannot be used for this purpose: ENGL 100, 105, 107, 111, 112, 307, 308, 311, or 480.

Secondary Education Curriculum

20 hours
1. Required Entry-Level Course (4 hrs.)
ENGL 110 Literary Interpretation ... 4
2. Required Advanced Courses (13-15 hrs.)
A. One of the following British Literature courses:
ENGL 252 Shakespeare ... 4
ENGL 330 British Literature I ... 3
ENGL 331 British Literature II ... 3
B. At least one of the American Literature survey courses, ENGL 320/321, which attend to the diversity of American culture.
AND A second course which attends to cultural diversity or has a multi-cultural focus, selected from the following courses:
ENGL 223 Black American Literature ... 4
ENGL 313 Asian Literature ... 3

Middle School/Junior High School Curriculum

34 hours
1. Required Entry-Level Course (4 hrs.)
ENGL 110 Literary Interpretation ... 4
2. Other Required Courses (20-24 hrs.)
ENGL 282 Children's Literature OR ENGL 583 Multi-Cultural Literature for Adolescents ... 3-4
AND ENGL 373 Reading as a Psycholinguistic Process ... 4
Additional Required Course
ENGL 359 Writing in the Elementary School OR ENGL 479 Writing in the Secondary School
One of the following courses:
ENGL 472 American Dialects ... 4
ENGL 484 Multi-Cultural American Literature for Children ... 3
ENGL 574 Grammar for Teachers ... 4
ENGL 582 Studies in Children's Literature ... 3
Two additional literature courses, at least one of which must be at the 300-level or above.

MINORS

A. English Language and Literature
B. American Literature
C. British Literature
D. World Literature

ENGLISH 113
ENGL 314 African Literature ............ 3
ENGL 320 American Literature I (If not taken to fulfill B above.) ............ 3
ENGL 321 American Literature II (If not taken to fulfill B above.) .......... 3
ENGL 472 American Dialects .......... 4
ENGL 539 Post-Colonial Literature ... 3*
ENGL 583 Multi-Cultural Adolescents Literature .... 3*

(Only those students who have second semester junior status and have completed courses, eight hours of which must be at the 300-400 level, may enroll in 500-level courses.)

C. Required course:
ENGL 479 Writing in the Secondary School ............ 4

3. Electives

- At least one additional English Department course.
- The following courses cannot be used for this purpose: ENGL 100, 105, 107, 111, 307, 308, or 311.

Recommended choices include
ENGL 315 The English Bible as Literature ............ 3
ENGL 415 Practical Literary Criticism ............ 4
ENGL 440 Studies in Verse ............ 4
ENGL 444 Studies in the Novel ............ 4
ENGL 452 Shakespeare Seminar ............ 4
ENGL 480 Teaching of Literature in the Secondary Schools ............ 4
ENGL 574 Grammar for Teachers ............ 4

- A writing course such as ENGL 305 Practical Writing ............ 4
- An additional literature course, especially those listed under 2A and 2B above.

Elementary Education Curriculum

21 hours

1. Required Entry-Level Courses (8 hrs.)
   ENGL 110 Literary Interpretation ............ 4
   ENGL 282 Children's Literature ............ 4

2. Required Literature Course (3–4 hrs.)
   One of the following courses:
   ENGL 223 Black American Literature ............ 4
   ENGL 252 Shakespeare ............ 4
   ENGL 312 Western World Literature ............ 3
   ENGL 313 Asian Literature ............ 3
   ENGL 314 African Literature ............ 3
   ENGL 315 The English Bible as Literature ............ 3
   ENGL 320 American Literature I ............ 3
   ENGL 321 American Literature II ............ 3
   ENGL 330 British Literature I ............ 3
   ENGL 331 British Literature II ............ 3
   ENGL 484 Multi-Cultural American Literature for Children (unless taken under #2 above) ............ 3
   ENGL 574 Grammar for Teachers ............ 4*
   ENGL 582 Studies in Children's Literature ............ 3*
   ENGL 583 Multi-Cultural Literature for Adolescents ............ 3*
   COM 442 Media and the Child ............ 3
   THEA 564 Creative Drama for Children ............ 4

NOTES: (1) A course with multi-cultural focus must be chosen, unless a course with such focus (ENGL 223, 313, 314, 320, 321, and 484) has been taken to satisfy requirement #2. (2) The following courses cannot be used as electives: ENGL 100, 105, 107, 111, 112, 307, 308, 311, 375, 376, 479, and 480.

ENGLISH Courses (ENGL)

A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

ENGL 100 Basic Writing Skills
4 hrs. (Credit/No Credit)

A writing course designed to help students develop basic writing skills. Emphasis is on English usage, sentence structure, and paragraph development. Does not count toward English major or minor. Credit for this course will not apply to the number of credits needed for graduation.

ENGL 105 Thought and Writing
4 hrs.

A writing course in which the students will write closely with the instructor to develop their sense of language as a means of shaping and ordering their experience and ideas, and to develop imagination, thought, organization, and clarity in their written work. Does not count as a credit towards English major or minor. Fulfills the University Intellectual Skills college level writing requirement.

ENGL 107 Good Books
4 hrs.

An exploration of good literature, selected from all times and countries experienced in a variety of ways—as fantasy and adventure, as imaginative response to fundamental human experience such as death or evil, as social criticism and analysis, as revelation of character and psychology, as experience of unfamiliar customs and cultures.

A course for the general student rather than the student who plans to specialize in the study of literature. Credit towards English major or minor by permission of the department only.

ENGL 110 Literary Interpretation
4 hrs.

An introduction to the study of literature, aimed at developing abilities to read literature and write about it with skill, sensitivity, and care. Students will read poetry, drama, and prose fiction, and through the writing of several papers will be introduced to terms and methods of formal study of literature. Course must be taken under #2. (4) English courses. Prerequisite: at least a "B" in ENGL 105 or the equivalent.

ENGL 111 Myth and Folk Literature
4 hrs.

Exploration of myth and folk literature through poetry, fiction, film and other materials. A required course for the general student rather than the student who plans to specialize in the study of literature. Credit towards English major or minor by permission of the department only.

Practical Writing Minor

20 hours

1. Required Entry-Level Course (4 hrs.)
   ENGL 110 Literary Interpretation ............ 4

2. Required Courses (14 hrs.)
   ENGL 305 Practical Writing ............ 4
   ENGL 362 Literary Journalism ............ 3
   ENGL 364 Feature and Article Writing ............ 3
   ENGL 462 Advanced Writing ............ 4

3. Literature Courses (3 hrs.)
   One course chosen from among the following:
   ENGL 312 World Literature ............ 3
   ENGL 313 Asian Literature ............ 3
   ENGL 314 African Literature ............ 3
   ENGL 315 The English Bible as Literature ............ 3
   ENGL 320 American Literature I ............ 3
   ENGL 321 American Literature II ............ 3
   ENGL 330 British Literature I ............ 3
   ENGL 331 British Literature II ............ 3
   ENGL 462 Advanced Writing ............ 4
   ENGL 464 Multi-Cultural American Literature ............ 3
   ENGL 582 Studies in Children's Literature ............ 3
   COM 442 Media and the Child ............ 3
   THEA 564 Creative Drama for Children ............ 4

English Minor with Writing Emphasis

20 hours

1. Required Entry-Level Courses (8 hrs.)
   ENGL 110 Literary Interpretation ............ 4
   ENGL 266 Writing Fiction and Poetry ............ 4

2. Literature Course (3 hrs.)
   One course chosen from among the following:
   ENGL 320 American Literature I ............ 3
   ENGL 321 American Literature II ............ 3
   ENGL 330 British Literature I ............ 3
   ENGL 331 British Literature II ............ 3

3. Advanced Writing Courses (6–8 hrs.)
   Two of the following courses:
   ENGL 305 Practical Writing ............ 4
   ENGL 364 Feature and Article Writing ............ 3
   ENGL 366 Advanced Fiction Writing ............ 3
   ENGL 367 Advanced Poetry Writing ............ 3
   ENGL 368 Playwriting ............ 3
   ENGL 462 Advanced Writing ............ 4
   ENGL 366, 367, and 368 may be repeated one time for credit.

4. Electives
   At least one additional English Department course. The following courses cannot be used for this purpose: ENGL 100, 105, 107, 111, 112, 307, 308, 311, or 480.

Journalism Minor

20 hours

1. Required Entry-Level Courses (7 hrs.)
   JRN 300 Newswriting and Reporting ............ 4
   JRN 301 Newswriting and Reporting ............ 4

2. Required Journalism Core Courses (12 hrs.)
   JRN 102 Introduction to Newswriting ............ 4
   JRN 200 Journalism Research ............ 4
   JRN 300 Newswriting and Reporting ............ 4

3. Journalism Law and Ethics (4 hrs.)
   JRN 420 Obligations of Contemporary American Journalism ............ 4
ENGL 112 Literary Classics 4 hrs.
Readings in selected literary masterpieces from Homer to the present. The works studied are chosen to introduce students to the rich and diverse literary traditions which represent an invaluable aspect of their heritage. Recommended for the general student as well as for potential English majors or minors; does not, however, count for English major or minor credit.

ENGL 150 Literature and Other Arts 4 hrs.
Study of literature through its relationship to other arts. The course approaches literature by relating novels, stories, poems, or plays to their representations in other media and art forms, particularly film (including TV), music and song, dramatic representation, and painting.

ENGL 205 Intermediate Writing 4 hrs.
A practical course for freshmen or sophomores or international students transferring to Western, who wish to develop their skills in writing. Emphasis is on understanding the conventions and forms appropriate for personal writing, persuasion, and research papers and reports. May count as elective credit in English. May not count toward an English major or minor. This course will not fulfill the baccalaureate writing requirement. Prerequisite: Satisfactory completion of ENGL 105.

ENGL 210 Film Interpretation 4 hrs.
Studies in the motion picture as art form.

ENGL 222 Literatures and Cultures of the United States 4 hrs.
Through study of literary works (and, when possible, other artistic achievements or cultural artifacts) by members of the varied cultures which comprise the United States of America, this course considers the perspectives and sustaining values of these cultural groups and considers the challenges, problems, and opportunities of a pluralistic American society.

ENGL 223 Black American Literature 4 hrs.
A survey of important black American writers and the historical development of the black image and experience in American literature and culture.

ENGL 252 Shakespeare 4 hrs.
A survey of Shakespeare's art through study of selected tragedies, histories, and comedies.

ENGL 264 News Writing 4 hrs.
Introduction to journalistic principles with an emphasis on writing news stories and learning news style. Students should be able to type. Prerequisite: Minimum of "B" in ENGL 105 or equivalent.

ENGL 265 News Editing 4 hrs.
Instruction and extensive practical experience in copy editing, copy writing, handling wire copy and photographs, and layout. Prerequisite: ENGL 264 News Writing.

ENGL 266 Writing Fiction and Poetry 4 hrs.
Study and practice in writing of fiction and poetry, intended to develop the student's understanding of formal techniques and skill in the use of these techniques.

ENGL 282 Children's Literature 4 hrs.
An exploration of the human and literary values in the best of children's books. Emphasis is on critical sensitivity and techniques necessary for interpreting and evaluating works representative of the major forms of children's literature—fable, fantasy, fiction, and non-fiction, myth and poetry.

ENGL 305 Practical Writing 4 hrs.
A practical course for juniors and seniors who wish to develop their skills in writing. Emphasis is on understanding the writing forms of non-fictional prose such as research papers and reports, personal writing, and pre-professional writing (for students planning careers in business, social service, industry, law, the arts, or other professions). Topics vary and will be announced each year. May be repeated for credit, but may be counted only once toward fulfillment of General Education requirements, and counted only once for major/minor credit, except for the practical writing minor.

ENGL 307 Literature in Our Lives 3 hrs.
This course examines the ways that literary works represent and reflect upon human experience and the human condition. It emphasizes the response of the individual reader to both the intellectual content and the aesthetic properties of texts and seeks to develop critical standards as a basis for a life-long engagement with literature; does not count as credit toward English major or minor.

ENGL 308 Quest for Self 3 hrs.
Exploration of the perennial quest for the self through the special perspective provided by literature. The literary perspectives may be supplemented by materials from other arts or disciplines. A non-technical course for the general student rather than the student specializing in the study of literature; does not count as credit toward an English major or minor.

ENGL 311 Our Place In Nature 3 hrs.
Exploration of the human's place in nature through the special perspective provided by literature. The literary perspectives may be supplemented by materials from other arts or disciplines. A non-technical course for the general student rather than the student specializing in the study of literature; does not count as credit toward an English major or minor.

ENGL 312 Western World Literature 3 hrs.
Study of works selected from the Western literary tradition, excluding those from Great Britain and the U.S.A. Selections may range from biblical literature and great works of Greece and Rome through classics of the Middle Ages and Renaissance to major works of the present. Works will be studied in English.

ENGL 313 Asian Literature 3 hrs.
Study of works selected from the great literature of Asia, especially the Chinese, Japanese, and Indian traditions. Works will be studied in English.

ENGL 314 African Literature 3 hrs.
Study of works selected from the great literature of Africa, including both traditional and contemporary material. Works will be studied in English.

ENGL 315 The English Bible as Literature 3 hrs.
Study of selections from the Old and New Testaments and the Apocrypha. Some attention will be given to the influence of the English Bible on a few representative writers, musicians, and artists, but emphasis will be on the poetic, philosophical, and narrative elements of the Bible itself.

ENGL 320 American Literature I 3 hrs.
A survey of American literature from its beginnings to 1880, with attention to the diversity of American cultures. Prerequisites: ENGL 105 (or equivalent); ENGL 110.

ENGL 321 American Literature II 3 hrs.
A survey of American literature since 1880, with attention to the diversity of American cultures. Prerequisites: ENGL 105 (or equivalent); ENGL 110.

ENGL 330 British Literature I 3 hrs.
A survey of British literature from its beginnings through Boswell. Prerequisites: ENGL 105 (or equivalent); ENGL 110.

ENGL 331 British Literature II 3 hrs.
A survey of British literature from the Romantics to the present. Prerequisites: ENGL 105 (or equivalent); ENGL 110.

ENGL 362 Literary Journalism 3 hrs.
A course in literary analysis of the form and development of the non-fiction prose of literary journalism. Prerequisites: ENGL 105; ENGL 110.

ENGL 363 Reporting 3 hrs.
Instruction and practice in covering news beats, writing complex news stories, and developing good interviewing skills. Prerequisite: ENGL 254.

ENGL 364 Feature and Article Writing 3 hrs.
Study and practice in writing feature and magazine articles; attention to contemporary techniques and styles in documentary and personal reporting. Prerequisite: A previous college-level writing course.

ENGL 365 Reviewing For the Press 3 hrs.
Theory and practice in writing reviews of books, drama, films, television, concerts, and exhibitions for various kinds of mass-audience publications. Prerequisite: Previous course work in journalism, creative writing, literature, or media.

ENGL 366 Advanced Fiction Writing 3 hrs.
An advanced course in the writing of fiction, with emphasis on class discussion and criticism of each student's writing. May be repeated one time for credit. Prerequisite: ENGL 266 or permission of the department.

ENGL 367 Advanced Poetry Writing 3 hrs.
An advanced course in the writing of poetry, with emphasis on class discussion and criticism of each student's writing. May be repeated one time for credit. Prerequisite: ENGL 266 or permission of the department.

ENGL 368 Playwriting 3 hrs.
An introductory course in the writing of drama, with class discussion and criticism of each student's writing, and including study of selected examples of drama in print and in production. May be repeated one time for credit. Prerequisite: ENGL 266 or permission of the department.

ENGL 369 Writing in the Elementary School 4 hrs.
Focuses on writing development of pre-school through middle school children, and on ways
one can encourage and respond to student writing, assess writing growth, and use writing as a means of learning. Fosters a theoretical understanding of the writing process in part by writing in varied genres and forms. Emphasizes writing as an integral component of the entire curriculum.

ENGL 371 Structures of Modern English 4 hrs.
Examines the structures of the English language and surveys major grammatical theories. Emphasizes syntactic analysis of oral and written English to develop an understanding of the diversity of forms, meanings, and stylistic choices available in the language.

ENGL 372 Development of Modern English 4 hrs.
Traces the development of modern English from its beginnings to the present, examining historic and linguistic influences on change in both spoken and written English. Explores theories of language development, with emphasis on their practical implications.

ENGL 373 Reading As A Psycholinguistic Process 4 hrs.
Focuses on the nature of the reading process and the development of reading ability in children. Particular attention is given to how the natural acquisition of literacy parallels the acquisition of oral language, and to the close relationship between the development of reading and writing ability. Emphasizes the application of current research in the elementary classroom.

ENGL 375 Acquisition of Literacy and the Early Elementary Child 4 hrs.
This course focuses on the psycholinguistic nature of the reading and writing process, emphasizing how literacy builds upon oracy. Particular attention is paid to literature for the young child and to how children's literature can further the acquisition of literacy. Deals with the child from birth through seven years.

ENGL 376 Acquisition of Literacy and the Later Elementary Child 4 hrs.
This course focuses on the psycholinguistic nature of the reading and writing processes, emphasizing how children can be helped to develop their reading and writing abilities. Particular attention is paid to literature for children and how that literature can further not only their reading and writing but also their development of artistic and human values. Deals with the child from seven through twelve years.

ENGL 410 Special Topics in Literature 4 hrs.
A study in historical perspective of selected literary works of the English speaking world or international literature in translation. May be repeated for credit as long as the topics are different. Prerequisite: ENGL 110.

ENGL 415 Practical Literary Criticism 4 hrs.
Practical applications of critical theory, with some attention to the history of this genre of literary writing from Plato to post-structuralism. In addition to New Criticism, special attention will be paid to more recent developments such as reader-response criticism, feminist criticism, and other contemporary critical modes. Strongly recommended for all students planning to take the graduate study. Prerequisites: At least two courses at the 300-level that count toward the English major.

ENGL 416 Women in Literature 4 hrs.
A study of literature of different periods and cultures to identify the images of women and to interpret the search for self as experienced by women protagonists and women writers. Prerequisite: ENGL 110.

ENGL 440 Studies in Verse 4 hrs.
A historical and formal study of poetry, emphasizing the development of poetic techniques, major verse forms and styles, and their relation to theories of poetry. Attention shall be paid to the critical and theoretical bases of interpretation. Prerequisites: Two courses at the 300-level that count toward the English major.

ENGL 442 Studies in Drama 4 hrs.
Studies in the major styles and forms of drama. Attention shall be paid to the critical and theoretical bases of interpretation. Prerequisites: Two courses that count toward the English major at the 300-level.

ENGL 444 Studies in the Novel 4 hrs.
The study of the development and diversity of the novel as a literary form. Emphasis will be on the novel from the eighteenth- to the early twentieth-century. Attention shall be paid to the critical and theoretical bases of interpretation. Prerequisites: Two courses that count toward the English major at the 300-level.

ENGL 452 Shakespeare Seminar* 4 hrs.
Intensive study of selected aspects of Shakespeare's poetic and dramatic art. Prerequisite: ENGL 110 or 252.

ENGL 462 Advanced Writing 4 hrs.
Practice in writing articles, essays, biographical and critical prose, with emphasis on development of the student's individual style and elimination of obstacles to clear and vital expression.

ENGL 463 Reporting Community Affairs 4 hrs.
Practice in the covering and reporting of the police, the courts, and other governmental units. Some stress on investigative and in-depth reporting. Prerequisites: ENGL 264 and 365.

ENGL 464 Professional Writing 4 hrs.
Practice in developing the forms and techniques of writing, editing, and researching required in industry or the government. Students should take this course as their capstone experience in practical writing. Prerequisite: Two writing courses.

ENGL 472 American Dialects 4 hrs.
A study of regional and social varieties of American English from sociolinguistic perspectives, focusing on oral and written language variation, examining issues of linguistic bias, and offers a multi-cultural perspective on the role of language in daily life.

ENGL 479 Writing in the Secondary School 4 hrs.
Focusses on the continued development of student writers in grades 7-12, and on ways one can encourage and respond to student writing, assess writing growth, and use writing as a means of learning. Fosters a theoretical understanding of the writing process, in part by writing in varied genres and forms. Emphasizes writing as an integral component of the entire curriculum. Prerequisite: Two 300-level English courses that count toward the major.

ENGL 480 Teaching Literature in the Secondary Schools 4 hrs.
A study of techniques and theories of teaching literature to young adults. Does not count as credit toward the major. Prerequisites: ED 302: Teaching and Learning—Secondary and two 300-level English courses that count toward the major.

ENGL 484 Multi-Cultural American Literature for Children 3 hrs.
A course designed to develop an understanding of the cultural diversity of the American experience through multi-cultural oral and written literature for young people. Attention will be paid to developing criteria for selecting and evaluating literature which reflects diversity within American heritage. Prerequisite: 16 hours must include ENGL 282.

ENGL 495 Internship/Field Work 1-4 hrs.
Open to juniors and seniors with a 3.0 GPA, this course enables advanced students to gain practical writing experience in the working world while earning academic credit. Specific arrangements are made in consultation with the Director of Undergraduate Studies. May be repeated; no more than four hours total credits. Prerequisite: Writing majors or minors

ENGL 496 English Honors Seminar 4 hrs.
Special studies in selected topics. Open only to majors working for honors in English, or by permission of the instructor.

ENGL 497 Studies in English: Variable Topics 1-3 hrs.
Group study of special topics in literature, film, English language, and writing. Many of these special courses are organized around special events or speakers on campus or in the community, or in response to special needs or interests of students. Some topics are announced in the schedule of classes; some are added during the semester. Further information and full listing of topics may be obtained from the English Department, sixth floor Sprau Tower.

The prerequisites to 500 level courses are: 18 hours of English courses including eight or more hours at the 300-400 level and second semester junior status; exemption only by permission of Director of Undergraduate Studies.

ENGL 522 Studies in American Literature 3 hrs.
Study of a movement or a recurrent theme in American literature, such as romanticism, realism, naturalism, humor, racial issues.

ENGL 530 Medieval Literature 3 hrs.
Readings in the medieval literary tradition. Some Middle English works will be studied in the original; works in Old English and continental literature will be mainly in translation.

ENGL 532 English Renaissance Literature 3 hrs.
Readings in representative writers of the period 1500-1660.

ENGL 534 Restoration and 18th Century Literature 3 hrs.
(British Literature 1660-1800) Readings in representative writers of the period, focusing on the diversity of literary forms in the period.

ENGL 536 Romantic Literature 3 hrs.
Readings in poetry and criticism, with emphasis on such writers as Blake, Burns, Dorothy Wordsworth, William Wordsworth, Coleridge, Scott, Byron, Mary Shelley, P.B. Shelley, and Keats.
ENGL 537 Victorian Literature 3 hrs.
Readings emphasizing such writers as Carlyle, Mill, Dickens, Thackeray, George Eliot, Tennyson, Robert Browning, Elizabeth Barrett Browning, and Arnold.

ENGL 538 Modern Literature 3 hrs.
Readings in representative writers in the period 1890–1945, not exclusively in British and American literature.

ENGL 539 Post-colonial Literature 3 hrs.
Readings in representative writers from colonial and post-colonial cultures.

ENGL 540 Contemporary Literature 3 hrs.
Readings in representative writers who have come to prominence chiefly since 1945.

ENGL 555 Studies in Major Writers 3 hrs.
Study of the works of classical, European, British or American writers. Limited to one or two authors.

ENGL 556 Creative Writing Workshop 4 hrs.
A workshop and conference course in the writing of poetry, fiction, or drama, with emphasis on refinement of the individual student's style and skills. May be repeated for credit. Prerequisites: Six hours of creative writing, graduate standing, or permission of the department.

ENGL 574 Grammar for Teachers 4 hrs.
Focuses on that aspect of linguistics known as "grammar": the grammar that we know intuitively, the descriptive grammars devised by scientists, and the "traditional" grammar which prescribes the rules of usage and mechanics. Emphasizes practical applications of these varied concepts in secondary and elementary English classrooms.

ENGL 582 Studies in Children's Literature 3 hrs.
A study in depth of significant themes, movements, types in children's literature. Prerequisites: ENGL 282 or permission of the department.

ENGL 583 Multi-Cultural Literature for Adolescents 3 hrs.
Critical analyses of literature read by young adults, with special attention paid to American and world literatures that reflect the diversity of the increasingly global community.

ENGL 597 Studies in English: Variable Topics 1–3 hrs.
Group study of special topics in literature, film, English language, and writing. Many of these special courses are organized around special events or speakers on campus or in the community, or in response to special needs or interests of students. Some topics are announced in the schedule of classes; some are added during the semester. Further information and full listing of topics may be obtained from the English Department, sixth floor Sprau Tower.

ENGL 598 Readings in English 1–4 hrs.
Individual reading project available to advanced students by special permission from the appropriate departmental advisor (undergraduate or graduate) and the staff member who will supervise the study. Normally, permission is granted only to students who have well thought-out projects dealing with authors or materials not being covered currently in the schedule. Permission is usually not granted to students who want to use the course simply to get one or two hours credit to complete an English major or minor.

**English Courses for International Students (ENGL)**

ENGL 160 Developing Fluency and Clarity in English: Emphasis on Reading and Writing 5 hrs.
This course is for undergraduates and graduates who are non-native speakers of English and who have sufficient language proficiency to be admitted to the University but who need to improve their reading and writing skills in order to perform successfully in their academic work. The course will help international students develop fluency and clarity in their writing by responding to varied kinds of prose. Students will learn to write in various academic genres. Particular attention will be paid to understanding and using key organizational patterns of these genres and to textbooks, with an emphasis on information gathering, planning, writing, and revising for clarity. Graduating group interaction skills.
Prerequisite: Minimum of 500 on TOEFL.

ENGL 161 Acquiring Fluency and Accuracy in English: Emphasis on Speaking and Listening 5 hrs.
This course will help international students develop fluency in speaking and effectiveness in listening to English by completing a series of tasks designed to develop their grammatical, sociolinguistic, and discourse competence in oral language. Attention will be paid to developing interpersonal interaction skills, both social and classroom, and basic lecture-listening skills. Graded on credit/no credit basis. Prerequisite: Minimum of 500 on TOEFL.

ENGL 360 Achieving in Academic English: Emphasis on Reading 5 hrs.
This course is for undergraduates and graduates who are non-native speakers of English and who have sufficient language proficiency to be admitted to the University, but who need to improve their reading and writing skills in order to perform successfully in their academic work. The course promotes further development in the ability to read academically and to write in the genres needed for academic success, including group interaction skills.
Prerequisite: Minimum of 500 on TOEFL.

ENGL 361 Developing Proficiency in English: Emphasis on Speaking and Listening 5 hrs.
For international students whose interpersonal speaking and listening skills are satisfactory, this course promotes further development of oral language abilities needed for academic success, including group interaction skills. Attention will be paid to developing critical listening and oral presentation skills.
Prerequisite: Minimum of 500 on TOEFL.

**Journalism (JRN)**

JRN 102 Introduction to Newswriting 4 hrs.
This course offers an introduction to fundamental journalistic principles and provides extensive practice in writing for newspapers. It focuses on developing basic newswriting skills, practice in grammar, punctuation, syntax and usage, and conventions of written English and knowledge of newswriting organization, structure and Associated Press style. While the focus is on writing for newspapers, the techniques studied provide a good foundation for students interested in broadcast newswriting.
Prerequisite: A grade of "B" or better in ENGL 105 or the equivalent.

JRN 200 Journalism Research 4 hrs.
This course focuses on gathering, selecting and synthesizing information from the many sources used in journalism research. It emphasizes the research techniques needed to obtain information from library reference materials, government data, or electronic data bases, the Internet, public records and personal interviews. This course stresses a systematic development of search strategies for researching news stories, with special emphasis on critical analysis of standard news gathering practices. Prerequisite: JRN 102.

JRN 300 Newswriting and Reporting 4 hrs.
This course focuses on the writing and reporting of basic news stories, such as speeches, elections, lectures, trials, news conferences, public meetings, disasters and tragedies. Students spend time outside of the classroom covering these kinds of events on campus and in the Kalamazoo area writing breaking news stories using Associated Press Style. This course covers basic techniques of interviewing for on-site reporting.
Prerequisites: JRN 102 and JRN 200.

JRN 301 Copy and Content Editing 4 hrs.
This course provides practice in copy and content editing. Students learn the techniques of copy, content and page editing. It focuses on copy editing, rewriting, typography, headline writing, page design, handling photographs, developing story ideas, working with writers, and editing for accuracy and fairness. This course offers students an overview of the roles and responsibilities of news editors. Prerequisite: JRN 300.

JRN 400 Reporting Public Affairs 4 hrs.
This course focuses on the writing and research of news stories for specific content and general public affairs, such as government, education, politics, courts, police, health, science, and the environment. With approval from the instructor, students will select a news beat to follow throughout the fall or spring semester. Students will learn how to contact and cultivate news sources, cover breaking beat news stories as they occur, and write breaking and news-leisure stories about their beats with accuracy and speed, using Associated Press style. Students will learn to evaluate current news coverage for their beat areas and will develop criteria for judging the adequacy of the coverage. Prerequisites: JRN 200 and JRN 300.

JRN 401 Electronic Editing 3 hrs.
This course develops students skills in electronic publishing, which includes computer pagination and design of newspaper and magazines pages, the design of news hypertext pages with HTML software for the World Wide Web, electronic photography and scanning, and the composition and design of visual art. While this course focuses on electronic editing for newspapers, students can transfer the knowledge they gain to magazines, newsletters, and other forms of print media. Prerequisite: JRN 102.

JRN 420 Obligations of Contemporary American Journalism 3 hrs.
This course examines the intellectual and ethical obligations as well as the legal
Topics and issues will include the first amendment and its application to journalism, laws and court decisions that govern or influence journalist ethical behavior in researching and reporting news. As the capstone course in the curriculum, this course articulates the responsibility of journalists to bring to their work relevant knowledge, informed judgement, critical intelligence, and the highest ethical standards. It surveys the current state of American journalism and examines the possibilities for its improvement.

Prerequisites: JRN 102 and JRN 350.

ENVIRONMENTAL STUDIES PROGRAM
See "Science Studies" in the College of Arts and Sciences.

FRENCH
See "Foreign Languages and Literatures" in the College of Arts and Sciences.

FOREIGN LANGUAGES AND LITERATURES
John Benson, Chair
Peter Blickie
Gary E. Bigelow
Norma Catelina
Jorge Felices
Robert Feikle
Jeffrey Gardiner
Robert Griffin
Dieter H. Haenicke
Carolyn Harris
Antonio Isea
Rand H. Johnson
Peter W. Krawutschke
Irra López
Molly Lynde-Recchia
Dasha Nkula
Joseph Reish
Cynthia Running-Johnson
Marine Sauret
Mercedes Tasende
Herman Tchert
Benjamin Torres
Camille Vande Berg
Robert Vann
Lindsey Wilhite

Modern and Classical Languages
All students (either entering or advanced) who wish to continue in a language they have studied in high school must take a placement evaluation. It may be used as a qualifying examination to exempt students from specific language requirements. The evaluation is given during each registration period and scores are posted in time for registration. Students must register according to their placement scores.

Native speakers of a given language must consult with a departmental advisor before registering for courses up through the 300 level.

Students who complete a major or minor may be eligible for some retroactive credit based on the results of the placement evaluation. Questions about this matter should be referred to the Department Chair.

Students entering in Fall 1993 and after who will graduate from the College of Arts and Sciences must fulfill that college's foreign language requirement. Other colleges or specific departments may also have a foreign language requirement. Students who have questions about this matter should consult their advisor.

Many language students study abroad as part of the undergraduate program. Western has a number of excellent study abroad programs. Students interested in receiving credit for foreign study must consult with the advisor in the appropriate language well in advance of such study in order to plan properly and to obtain approval.

All students interested in pursuing a language major or minor should consult with an advisor as early as possible.

Majors and Minors
As soon as students decide to major or minor in French, German, Latin, Russian, or Spanish, they should confer with the advisor for that language in order to plan their program. Major slips are required for all majors. Minor slips are required for all minors.

Only courses in which a grade of “C” or better is obtained can be counted toward a major or minor.

For students majoring or minoring in a modern foreign language, a course in modern European history is desirable. For Latin majors and minors, a course in Roman history is recommended. A student in the Liberal Education curriculum may apply eight (8) credits toward a Latin major by taking both GREK 100 and GREK 101. A student in the Secondary Education curriculum may apply four (4) credits toward a Latin major by taking both GREK 100 and GREK 101. English majors are encouraged to take as much foreign language as they can.

Teaching certification is approved for majors or minors in secondary and middle school and junior high school education for the following languages: French, German, Latin (secondary only), Russian (minor only), and Spanish. A language methods course is required for all teaching majors and minors in the foreign languages. Exceptions to the patterns may be granted only by departmental permission.

Baccalaureate Writing Requirement
Students who have chosen to major in French, German, and Spanish will satisfy the Baccalaureate Writing Requirement by successfully completing LANG 375 or LANG 376 Foreign Literature in English Translation. Students who have chosen to major in Latin will satisfy the Baccalaureate Writing Requirement by successfully completing ENGL 305 Practical Writing.

RESIDENCY REQUIREMENT FOR MAJORS AND MINORS IN FRENCH, GERMAN, OR SPANISH
Majors in French or Spanish must take at least four courses (of the total required for the major) at Western Michigan University. One of these must be a 500-level class. Minors in French and Spanish must take at least three courses (of the total required for the minor) at the 200-level or above at Western Michigan University.

Majors or minors in German must take at least the last two courses in their German program at Western Michigan University (LANG 558 may not be used to fulfill this requirement). Students who have completed their work at other institutions and who wish to be certified for teaching German must complete at least three courses in German at Western Michigan University (LANG 558 may not be one of these).

FRENCH MAJOR: Non-teaching
Thirty-three hours beyond 100-level to include FREN 316, 317, 322 or 323, 325, 452 or 453, and one 500-level literature course. Neither FREN 400 nor 401 can be counted toward the major. LANG 558 cannot be included in this major.

FRENCH MAJOR: Education Curriculum
Thirty-six hours beyond 100-level to include FREN 316, 317, 322 or 323, 325, 452 or 453, one 500-level literature course, and LANG 558. Neither FREN 400 nor 401 can be counted toward the major. Neither FREN 400 nor 401 can be counted toward the major.

FRENCH MINOR: Non-teaching
Twenty-one hours beyond the 100-level to include FREN 316 and 317. Neither FREN 400 nor 401 can be counted toward the minor. LANG 558 cannot be included in this minor.

FRENCH MINOR: Education Curriculum
Twenty-four hours beyond 100-level to include FREN 316, 317, and LANG 558. Neither FREN 400 nor 401 can be counted toward the minor.

GERMAN MAJOR: Non-teaching
Thirty-two hours beyond 100-level to include GER 316, 317, 322, 325, 452, 453, and six hours of 500-level German courses. (Neither GER 400 nor 401 can be counted toward the
major). LANG 558 cannot be included in this major.

GERMAN MAJOR: Education Curriculum
Thirty-five hours beyond 100-level to include GER 316, 317, 322, 325, 452, 453, six hours of 500-level German Courses, and LANG 558. Neither GER 400 nor 401 can be counted toward the major.

GERMAN MINOR: Non-teaching
Twenty-three hours beyond the 100-level to include GER 316,317,322,325,452 or 453. Neither GER 400 nor 401 can be counted toward the minor. LANG 558 cannot be included in this minor.

GERMAN MINOR: Education Curriculum
Twenty-nine hours beyond the 100-level to include GER 200, 201, 316, 317, 322, 325, 452 or 453, LANG 558 and one 500-level literature course. Neither GER 400 nor 401 can be counted toward the minor.

LATIN MAJOR
Thirty hours including 100, 101, and 200 or equivalent, remaining hours from 201–560, including LANG 375 (Classical Literature in English Translation) or LANG 350, GREK 100 and 101 may also be included. Teaching majors must include LAT 324, and 557.

LATIN MINOR
Twenty hours including 100, 101, and 200 or equivalent, remaining hours from 201–560, and may include LANG 375 (Classical Literature in English Translation) or LANG 350. Teaching minors must include LAT 557 which does not yield credit hours toward the Latin minor.

RUSSIAN MINOR
Twenty-three hours including 100-level (basic) courses or equivalent; remaining hours from RUSS 200–500 series.

SPANISH MAJOR: Non-teaching
Thirty-five hours beyond 100-level to include SPAN 316 and 317, 322, 323 or 324; 325; and four 400- or 500-level Spanish courses (to include three hours from SPAN 526, 527, 528, 529 or 560). LANG 558 cannot be included in this major.

SPANISH MAJOR: Education Curriculum
Thirty-five hours beyond 100-level to include SPAN 316, 317, 322, 323 or 324, 325, and three 400- or 500-level Spanish courses (to include three hours from SPAN 526, 527, 528, 529, or 560) and LANG 558. SPAN 454 Spanish Phonetics, is strongly recommended.

SPANISH MINOR: Non-teaching
Twenty-three hours beyond the 100-level to include SPAN 316, 317, and six hours from SPAN 322, 323, 324, or 325. LANG 558 cannot be included in this minor.

SPANISH MINOR: Education Curriculum
Twenty-nine hours beyond 100-level to include LANG 558, SPAN 316, 317, and six hours from SPAN 322, 323, 324, or 325. SPAN 454 Spanish Phonetics, is strongly recommended.

WORLD LITERATURE MINOR
The Department of Foreign Languages and Literatures and the Department of English offer jointly a world literature minor (20 hours). For description and requirements, see the “Interdisciplinary Programs” listing in the College of Arts and Sciences section of this catalog, or consult Dr. Felkel, 515 Sprau, 387–3018.

Foreign Credits
Credits for language study at a foreign university may be granted on official proof that the student has completed the coursework successfully. For courses where no examination or grades are given, the student may be recommended for appropriate credit upon his/her return to Western on the basis of papers, colloquia, or comparable work to be determined by the department.

Language Courses (LANG)
A list of approved General Education courses can be elsewhere in this catalog.

LANG 100 Basic Foreign Languages I
4 hrs.
Study of a foreign language not regularly offered in the department. Fundamentals of the particular foreign language with emphasis on specific skills, as appropriate for that language.

LANG 101 Basic Foreign Languages II
4 hrs.
Continuation of LANG 100. Prerequisite: LANG 100 or equivalent in the same language.

LANG 105 The Nature of Language
4 hrs.
A broad introduction to the nature and development of language in human society and to the interdisciplinary aspects of current studies of language and language behavior.

LANG 200 Intermediate Foreign Languages I
4 hrs.
Continuation of LANG 101. Review, practice and development of knowledge and skills as appropriate for the particular foreign language. Prerequisite: LANG 101 or equivalent in the same language.

LANG 201 Intermediate Foreign Languages II
4 hrs.
Continuation of LANG 200. Prerequisite: LANG 200 or equivalent in the same language.

Foreign Literature in English Translation
These courses will survey literary masterpieces of other countries in English translation. They are open to any student and there is no foreign language prerequisite. The courses will be taught entirely in English by specialists in the areas.

LANG 375 Foreign Literature in English Translation: Views of Humanity
3 hrs.
The content of the course will stress the observation and experience of another society and culture as depicted in some of the great writings of foreign literature through reading in English. Universal themes about the human condition and insight into their treatment by representative native writers will be presented. The course will consider the differences in treatment of individuals and society and will offer a comparison to contemporary life through various literary works and the social-historical background for each of the selections.

This course does not apply toward a major or minor in Latin or a minor in Russian. LANG 376 fulfills the University baccalaureate-level writing requirement for foreign language majors. The course may be taken in more than one language area.

World Literature Minor
The Department of Foreign Languages and Literatures and the Department of English offer jointly a world literature minor (20 hours). For description and requirements, see the “Interdisciplinary Programs” listing in the College of Arts and Sciences section of this catalog, or consult Dr. Felkel, 515 Sprau, 387–3018.

Foreign Credits
Credits for language study at a foreign university may be granted on official proof that the student has completed the coursework successfully. For courses where no examination or grades are given, the student may be recommended for appropriate credit upon his/her return to Western on the basis of papers, colloquia, or comparable work to be determined by the department.

Language Courses (LANG)
A list of approved General Education courses can be elsewhere in this catalog.

LANG 100 Basic Foreign Languages I
4 hrs.
Study of a foreign language not regularly offered in the department. Fundamentals of the particular foreign language with emphasis on specific skills, as appropriate for that language.

LANG 101 Basic Foreign Languages II
4 hrs.
Continuation of LANG 100. Prerequisite: LANG 100 or equivalent in the same language.

LANG 105 The Nature of Language
4 hrs.
A broad introduction to the nature and development of language in human society and to the interdisciplinary aspects of current studies of language and language behavior.

LANG 200 Intermediate Foreign Languages I
4 hrs.
Continuation of LANG 101. Review, practice and development of knowledge and skills as appropriate for the particular foreign language. Prerequisite: LANG 101 or equivalent in the same language.

LANG 201 Intermediate Foreign Languages II
4 hrs.
Continuation of LANG 200. Prerequisite: LANG 200 or equivalent in the same language.

Foreign Literature in English Translation
These courses will survey literary masterpieces of other countries in English translation. They are open to any student and there is no foreign language prerequisite. The courses will be taught entirely in English by specialists in the areas.

LANG 375 Foreign Literature in English Translation: Views of Humanity
3 hrs.
The content of the course will stress the observation and experience of another society and culture as depicted in some of the great writings of foreign literature through reading in English. Universal themes about the human condition and insight into their treatment by representative native writers will be presented. The course will consider the differences in treatment of individuals and society and will offer a comparison to contemporary life through various literary works and the social-historical background for each of the selections.

This course does not apply toward a major or minor in Latin or a minor in Russian. LANG 376 fulfills the University baccalaureate-level writing requirement for foreign language majors. The course may be taken in more than one language area.

CLASSICS COURSES IN ENGLISH
LANG 350 Classical Greek and Roman Mythology
3 hrs.
Investigates the origins, elements, and interpretations of the principal myths and legends of Greece and Rome and their preservation not only in literature, but also in painting, music and sculpture. No prerequisite.

LANG 550 Independent Study in Classics
1–3 hrs.
Directed, individual study of a specific topic related to Classical languages, literature, and/or culture. Prerequisite: Completion of four courses or equivalent in classics; minimum grade point average of 3.0 or major departmental approval required. May be repeated for credit.
Language Teaching Course

LANG 558 Modern Language Instruction (in French, German, Spanish, or other language) 3 hrs.
Required for modern language teaching majors and minors. This course will acquaint prospective language teachers with various approaches and strategies involved in modern language teaching. Specifically, in a performance oriented program, students will learn theory and practice related to teaching the listening, speaking, reading and writing aspects of the language. Students must complete this course before beginning directed teaching. Prerequisite: Minimum of four courses including a language at the 316 and 317 level, or equivalent, or permission of instructor. This course will be offered regularly. The comparable methods course for Latin is LAT 557 Teaching of Latin.

Foreign Languages for Special Purposes

LANG 580 Foreign Language for Special Purposes 1-12 hrs.
The study of or practice in a specialized area in the field of foreign language and culture such as court interpreting, medical or engineering terminology, or public school administration. The content of this course may vary from semester to semester. Students may repeat the course for credit, provided the subject matter differs. Prerequisite: Completion of four courses in area of specialization; departmental approval required.

Classics

See Greek, Latin, and Classics Courses in English.

French (FREN)

A list of approved General Education courses can be found elsewhere in this catalog.

FREN 100 Basic French I 4 hrs.
Fundamentals of French with audiolingual emphasis. French cultural readings.

FREN 101 Basic French II 4 hrs.
Continuation of 100. Prerequisite: FREN 100 or equivalent.

FREN 200 Intermediate French I 4 hrs.
The development of spoken and written expression in the French language with an emphasis on grammar review. Prerequisite: FREN 101 or two years of high school French, or equivalent.

FREN 201 Intermediate French II 4 hrs.
The continued development of spoken and written expression in the French language through readings and discussions of civilization and culture materials. Prerequisite: FREN 200 or equivalent.

FREN 316 French Composition 3 hrs.
Emphasis upon increasing the student's command of written French. Prerequisite: FREN 201 or equivalent.

FREN 317 French Conversation 4 hrs.
Exercises to develop ease and accuracy in the use of everyday French. Emphasis on oral aspects of the language. Prerequisite: FREN 201 or equivalent.

FREN 320 French Phonetics 3 hrs.
Study and practice to correct typical difficulties encountered by students of French with Anglo-American patterns of pronunciation, also to study the teaching of French patterns. Prerequisite: FREN 200 or equivalent. (FREN 320 may be taken concurrently with FREN 201.)

FREN 322 Life and Culture in France 3 hrs.
A study of French civilization based on historical, geographical, literary considerations and art and how those factors illustrate the character and traditions of French people from the medieval period through the present day. Prerequisites: FREN 316 and FREN 317.

FREN 323 Life and Culture in the Francophone World 3 hrs.
An introduction to French-speaking culture outside France, as seen primarily through literary texts. Students will become acquainted with various aspects of life in French-speaking communities both past and present. Prerequisites: FREN 316 and FREN 317.

FREN 325 Close Reading In French 3 hrs.
Prose and verse readings of intrinsic literary and cultural merit, with emphasis on strategies for literary analysis. Prerequisites: FREN 316, 317, or permission of Department.

FREN 344 Summer Study in France 4 hrs.
A summer study program of French language, literature and culture. The course consists of formal study at a French university with regularly scheduled lectures and discussions in the French language. University study is supplemented by an organized tour of Paris with full explanations by an instructor of all points visited. Each student submits a term paper investigating one phase of his/her experience. Prerequisite: FREN 200 or equivalent or permission of instructor.

FREN 400 Elementary French for Reading Proficiency 4 hrs.
Intensive grammar and elementary reading for translation and research purposes. The course is primarily for the graduate who has had little or no study in the language. However, undergraduates who desire a thorough reading knowledge may also apply. Undergraduates must secure permission of department. No oral work. This course does not count toward a major or minor in French.

FREN 401 Intermediate French for Reading Proficiency 4 hrs.
Readings in the language at intermediate and advanced levels for translation and research purposes. Special attention will be given to students' major fields. Completion of FREN 401 with a minimum of "B" constitutes graduate proficiency in the language. Undergraduates must secure permission of the Department. This course does not count toward a major or minor in French. Prerequisite: FREN 400 or equivalent.

FREN 452 Advanced French Grammar and Composition 3 hrs.
Intensive review of French structure and practice in composition. Prerequisite: FREN 316 and 317 or equivalent.

FREN 453 Advanced French Conversation 3 hrs.
Intensive practice with spoken French. Prerequisite: FREN 316 and 317 or equivalent.

FREN 477 Foreign Study 1-16 hrs. Fall-Winter; 1-8 hrs. Spring-Summer
Student participation in a departmentally approved program of study abroad. Repeatable for credit up to 32 credit hours. Prerequisite: Prior permission of departmental advisor and chairperson.

500-level courses may be taken only by advanced undergraduate students. Advanced undergraduate students are defined as those who have satisfactorily completed a minimum of four courses, or equivalent, applicable toward a major or minor in any one language. Each course, however, may have more specific and/or additional prerequisites.

FREN 510 Studies in French and Francophone Culture 3 hrs.
An intensive study of selected aspects of French and Francophone culture. Course varies according to topic and may be repeated for credit with permission of advisor. Representative topics may include Women in French Society, The French Tradition in Quebec, Francophone Cinema. Prerequisites: FREN 316, 317, either 322 or 323, plus one additional French course at the 300, 400 or 500 level.

FREN 528 French Literature from the Middle Ages to the Revolution 3 hrs.
The study of selected literary texts from the Middle Ages to the end of the eighteenth century. Prerequisites: FREN 316, 317, and 325.

FREN 529 French Literature from the Revolution to the Present 3 hrs.
The study of selected literary texts from the late eighteenth century to the present. Prerequisites: FREN 316, 317, and 325.

FREN 550 Independent Study in French 1-3 hrs.
Directed individual study of a specific topic in a French literary or linguistic area. Departmental approval required for admission. Repeatable for credit. Prerequisite: One 500-level course in the major; a minimum grade point average of 3.0 in the major. Not open to minors.

FREN 560 Advanced Readings in French 3 hrs.
Topics of literary, cultural, or linguistic merit will be analyzed. Topics will vary from semester to semester. May be repeated for credit. Prerequisites: FREN 316, 317, 325, or permission of instructor.

German (GER)

A list of approved General Education courses can be found elsewhere in this catalog.

GER 100 Basic German I 4 hrs.
Fundamentals of German with audiolingual emphasis. German cultural readings. Does not count toward a major or a minor.

GER 101 Basic German II 4 hrs.
Continuation of 100. Prerequisite: GER 100 or equivalent. Does not count toward a major or a minor.

GER 200 Intermediate German I 4 hrs.
The development of spoken and written expression in the German language with an emphasis on grammar review. Prerequisite: GER 101 or two years of high school German, or equivalent.
GER 201 Intermediate German II 4 hrs. The continued development of spoken and written expression in the German language through readings and discussions of civilization and culture materials. Prerequisite: GER 200 or equivalent.

GER 316 German Composition 3 hrs. Emphasis upon increasing the student's command of written German. Prerequisite: GER 201 or equivalent.

GER 317 German Conversation 3 hrs. Emphasis upon increasing the student's command of spoken German. Prerequisite: GER 201 or equivalent.

GER 322 German Life and Culture 3 hrs. Investigates cultural aspects necessary for an understanding of Germany. Historic, geographic, social and religious factors are treated. Prerequisite: GER 201 or equivalent.

GER 325 Introduction to the Study of German Literature 3 hrs. An appreciation of German literature through reading and critical interpretation of selected works of various literary types. Prerequisite: GER 201 or equivalent.

GER 400 Elementary German for Reading Proficiency 4 hrs. Intensive grammar and elementary reading for translation and research purposes. The course is primarily for the graduate student who has had little or no study in the language. However, undergraduates who desire a thorough reading knowledge may also apply. Undergraduates must secure permission of the Department. No oral work. This course does not count toward a major or minor in German. Prerequisite: GER 400 or equivalent.

GER 401 Intermediate German for Reading Proficiency 4 hrs. Readings in the language at intermediate and advanced levels for translation and research purposes. Special attention will be given to students' major fields. Completion of GER 401 with a minimum of "B" constitutes graduate proficiency in the language. Undergraduates must secure permission of the Department. This course does not count toward a major or minor in German. Prerequisite: GER 400 or equivalent.

GER 452 Advanced German Composition 3 hrs. Intensive practice in composition and stylistics directed toward appreciation of literary and other written expression in German with work in free composition at an advanced level. Prerequisites: GER 316 and 317.

GER 453 Advanced German Conversation 3 hrs. Intensive training in conversational German with emphasis on colloquial language and idiom. Prerequisites: GER 316 and 317.

GER 477 Foreign Study 1–16 hrs. Fall-Winter, 1–8 hrs. Spring-Summer Student participation in departmentally approved program of study abroad. Repeatable for credit up to 32 credit hours. Prerequisite: Prior permission of departmental advisor and chairperson.

500-level courses may be taken only by advanced undergraduate students. Advanced undergraduate students are defined as those who have satisfactorily completed a minimum of four courses, or equivalent, applicable toward a major or minor in any one language.

Each course, however, may have more specific and/or additional prerequisites.

GER 528 Survey of German Literature 3 hrs. A comprehensive study of German literature from its beginning through Romanticism. Prerequisites: GER 316, 317, 322, 325 or permission of instructor.

GER 529 Survey of German Literature 3 hrs. A comprehensive study of German literature from German Realism to the present. Prerequisites: GER 316, 317, 322, 325 or permission of instructor.

GER 550 Independent Study in German 1–3 hrs. Directed individual study of a specific topic in German literature or linguistic area. Departmental approval is required for admission. Repeatable for credit. Prerequisite: One 500-level course in the major; a minimum grade point average of 3.0 in the major. Not open to minors.

GER 559 History of the German Language 3 hrs. Survey of the development. Prerequisite: 6 hours of 300-level German or above.

GER 560 Studies in German Literature 3 hrs. Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisites: GER 316, 317, 322, 325 or permission of instructor. Representative topics which may be treated in this area include:
- The Novelle—Survey of the development with representative selections.
- Lyric Poetry—Survey of the development with significant selections.
- Nineteenth Century Drama—Primarily Kleist, Grillparzer, Hebbel, and Hauptmann.
- Twentieth Century Drama—Representative selections.

Greek (GREK)

A list of approved General Education courses can be found elsewhere in this catalog.

GREK 100 Basic Greek I 4 hrs. Fundamentals of classical Greek; readings emphasize Greek thought, culture, and civilization.

GREK 101 Basic Greek II 4 hrs. Continuation of 100. Prerequisite: GREK 100 or equivalent.

Latin (LAT)

A list of approved General Education courses can be found elsewhere in this catalog.

LAT 100 Basic Latin I 4 hrs. Fundamentals of Latin; readings emphasize Roman thought, culture, and civilization.

LAT 101 Basic Latin II 4 hrs. Continuation of 100. Prerequisite: LAT 100 or equivalent.

LAT 200 An Introduction to the Study of Latin Literature 4 hrs. A review of Latin grammar based on selections from Latin authors representing various genres, for example: history, satire, political oratory, lyric poetry, comic drama. Prerequisite: LAT 101 or equivalent.

LAT 201 Lyric Poetry 4 hrs. Latin lyric poems of Catullus, Horace, Tibullus, and Propertius with special attention to improving language skills. Study and analysis of literary themes will also be included. Prerequisite LAT 200 or equivalent.

LAT 204 Vergil 4 hrs. Readings from the works of Vergil (especially the Aeneid) with particular attention to improving language skills while exploring Vergil’s thought and style. Prerequisite: LAT 200 or equivalent.

LAT 324 Latin Literature 4 hrs. Selections from Latin prose and poetry. Since specific readings vary according to genre, author, or period, this course may be repeated for credit. Prerequisite: LAT 200 or 201 or equivalent.

LAT 477 Foreign Study 1–16 hrs. Fall-Winter, 1–8 hrs. Spring-Summer Student participation in departmentally approved program of study abroad. Repeatable for credit up to 32 credit hours. Prerequisite: Prior permission of departmental advisor and chairperson.

500-level courses may be taken only by advanced undergraduate students. Advanced undergraduate students are defined as those who have satisfactorily completed a minimum of four courses, or equivalent, applicable toward a major or minor in any one language. Each course, however, may have more specific and/or additional prerequisites.

LAT 550 Independent Study in Latin 1–3 hrs. Directed individual study of a specific topic in Latin literature or linguistics. Departmental approval required for admission. Repeatable for credit. Prerequisite: a minimum grade point average of 3.0 in the major.

LAT 557 Teaching of Latin 3 hrs. The purpose of the course is to acquaint the prospective teacher with theory and practice appropriate to the teaching of the Latin language, literature, and culture in its classical context and as it relates to the modern world. Required of Latin teaching majors and minors. Prerequisite: Completion of four courses, or equivalent, in Latin; or permission of instructor.

LAT 560 Medieval Latin 4 hrs. A survey of the development of medieval Latin from late antiquity to the Renaissance. Specimens will include major literary and documentary sources of the medieval centuries including new genres such as hagiography, monastic rules, hymns, and homilies. Prerequisite: One of LAT 200, 201, 204, 324, or equivalent, or permission of the department.

Latvian (LATV)

LATV 101 Basic Latvian II
4 hrs.
Continuation of 100. Prerequisite: LATV 100 or equivalent.

LATV 200 Intermediate Latvian I
4 hrs.
Continuation of 101, with greater attention to achieving self-reliance in conversation and to increasing reading and writing skills with the help of a dictionary. Analysis of the structure of Latvian; vocabulary building and uses of idioms; exercises in spoken and written Latvian; reading selections in various topics; short compositions in Latvian. Prerequisite: LATV 101 or equivalent.

LATV 201 Intermediate Latvian II
4 hrs.
Continuation of 200. Individualized assistance at all levels of the language structure. Development of more advanced reading and writing skills. Oral and written reports on various topics. Prerequisite: LATV 200 or equivalent.

Russian (RUSS)
A list of approved General Education courses can be found elsewhere in this catalog.

RUSS 100 Basic Russian I
4 hrs.
Fundamentals of Russian with emphasis on oral proficiency.

RUSS 101 Basic Russian II
4 hrs.
Continuation of RUSS 100. Prerequisite: RUSS 100 or equivalent.

RUSS 200 Intermediate Russian I
4 hrs.
Level two Russian. Review and furthering of oral and reading skills based upon increasingly advanced oral and written exercises. Prerequisite: RUSS 101 or equivalent.

RUSS 201 Intermediate Russian II
4 hrs.
Continuation of RUSS 200 with a focus on development of spoken and written expression in the Russian language through readings and discussion of civilization and cultural materials. Prerequisite: RUSS 200 or equivalent.

RUSS 310 Russian Civilization
3 hrs.
A study of selected aspects of Russian life and culture and their historical settings. Course taught in English and open to all students.

RUSS 316 Russian Composition
4 hrs.
Emphasis on increasing the student’s command of written Russian. Prerequisite: RUSS 201 or equivalent.

RUSS 317 Russian Conversation
4 hrs.
The course includes exercises to develop ease and accuracy in the use of everyday Russian. Emphasis on oral aspects of the language. Prerequisite: RUSS 201 or equivalent.

RUSS 325 Introduction to the Study of Russian Literature
4 hrs.
Study of selected topics in Russian literature. Topics vary according to genre, author, or period and will be announced. May be repeated for credit. Prerequisite: RUSS 201 or equivalent, or permission of instructor.

RUSS 344 Summer Study in Russia
4 hrs.
A summer study-abroad program of Russian language, literature, and culture. The course includes a series of lectures and discussions prior to departure. The tour will be accompanied by full explanations of all areas visited. Students plan and outline a project which they complete and submit after their return. Specific language tasks are assigned during the program. In addition, each student submits a term paper and takes an examination at the end of the study program. May be repeated for credit. Prerequisite: Instructor's permission.

RUSS 477 Foreign Study
1-16 hrs. Fall-Winter; 1-8 hrs. Spring-Summer
Student participation in departmentally approved program of study abroad. Repeatable for credit up to 32 credit hours. Prerequisite: Prior permission of departmental advisor and chairperson.

500-level courses may be taken only by advanced undergraduate students. Advanced undergraduate students are defined as those who have satisfactorily completed a minimum of four courses, or equivalent, applicable toward a major or minor in any one language. Each course, however, may have more specific and/or additional prerequisites.

RUSS 550 Independent Study in Russian
1-3 hrs.
Directed individual study of a specific topic in Russian language, literature, or culture. May be repeated for credit. Prerequisites: Completion of four courses in Russian, or equivalent; minimum grade point average of 3.0 in Russian; department and instructor approval required.

Spanish (SPAN)
A list of approved General Education courses can be found elsewhere in this catalog.

SPAN 100 Basic Spanish I
4 hrs.
Fundamentals of Spanish with auditory emphasis.

SPAN 101 Basic Spanish II
4 hrs.
Continuation of 100. Prerequisite: SPAN 100 or equivalent.

SPAN 200 Intermediate Spanish I
4 hrs.
The development of spoken and written expression in the Spanish language with an emphasis on grammar. Prerequisite: SPAN 101 or two years of high school Spanish, or equivalent.

SPAN 201 Intermediate Spanish II
4 hrs.
The continued development of spoken and written expression in the Spanish language through readings and discussions of civilization and culture materials. Prerequisite: SPAN 200 or equivalent.

SPAN 275 Latino Writing/Latino Culture
3 hrs.
This course, taught in English, emphasizes the diverse nature of Latino writing and Latino culture by focusing on representative literary texts illustrative of the Hispanic role within contemporary United States society. It seeks to explain not only the relevance of this presence, but also the complexities inherent to biculturalism and bilingualism as experienced by those communities depicted in the works of prominent authors. This course does not count toward a Spanish major or minor.

SPAN 316 Spanish Composition
3 hrs.
Emphasis upon increasing the student's command of written Spanish. Prerequisite: SPAN 201 or equivalent. (SPAN 316 may be taken concurrently with SPAN 201.)

SPAN 317 Spanish Conversation
3 hrs.
Emphasis upon increasing the student's command of spoken Spanish. Prerequisite: SPAN 201 or equivalent. (SPAN 317 may be taken concurrently with SPAN 201.)

SPAN 322 Life and Culture of Spain
3 hrs.
A study of Spanish civilization in terms of its geography, history and art, and how these factors illuminate the character and tradition of the Spanish people. Prerequisite: SPAN 316 and 317 or equivalent. SPAN 317 may be taken concurrently with SPAN 322 with permission of Spanish advisor.

SPAN 323 Life and Culture of Spanish America
3 hrs.
A study of Spanish-American life and culture based on ethnic, historical, social, religious and literary considerations. Prerequisites: SPAN 316 and 317 or equivalent (317 may be taken concurrently with 323 with permission of Spanish advisor).

SPAN 324 Introduction to the Study of Spanish Linguistics
3 hrs.
A general survey of the different fields of Spanish linguistics, both theoretical (e.g., phonetics/phonology, syntax, and semantics) and applied (e.g., pragmatics, discourse analysis, sociolinguistics, and bilingualism). Prepares students for more specialized studies. Prerequisites: SPAN 316, 317 or equivalent (317 may be taken concurrently with 324 with permission of Spanish advisor).

SPAN 325 Introduction to the Study of Spanish Literature
3 hrs.
An appreciation of Spanish literature through reading and critical interpretation of selected works of various literary types. Prerequisites: SPAN 316 and 317 or equivalent.

SPAN 452 Advanced Spanish Grammar and Composition
3 hrs.
An advanced study of the intricacies and problems of Spanish grammar, syntax, and style with attention to improving written expression in Spanish at an advanced level. Prerequisites: SPAN 316, 317 and one additional 300-level course.

SPAN 453 Advanced Spanish Conversation
3 hrs.
Intensive practice to reinforce and expand the basic oral communicative skills and to develop flexible and idiomatic oral expression. Prerequisites: SPAN 316, 317, and one additional 300-level course.

SPAN 454 Spanish Phonetics
3 hrs.
An alternative or complement to SPAN 453, Advanced Spanish Conversation. Particularly recommended for future teachers of Spanish. Provides a practical approach to the improvement of non-native pronunciation and “accent.” Emphasizes the sound system of Spanish throughaural/oral practice, written transcription, and comparison with English. Prerequisites: SPAN 316, 317, and one additional 300-level course. SPAN 324 is recommended.

SPAN 477 Foreign Study
1-16 hrs. Fall-Winter; 1-8 hrs. Spring-Summer
Student participation in departmentally approved program of study abroad. Repeatable for credit up to 32 credit hours. Prerequisite: Prior permission of departmental advisor and chairperson.

500-level courses may be taken only by advanced undergraduate students. Advanced undergraduate students are defined as those who have satisfactorily completed a minimum
GEOGRAPHY

of four courses, or equivalent, applicable
toward a major or minor in any one language.
Each course, however, may have more specific
and/or additional prerequisites.
SPAN 510 Studies in Hispanic Culture
3 hrs.

An intensive study of various aspects of
Spanish and Spanish American culture.
Emphasis is on cultural understanding as an
avenue to increased proficiency in the Spanish
language. Since specific topics will vary each
semester, this course may be repeated for
credit. Prerequisites: SPAN 316, and 317; 322,
323, or 324; plus one additional course at the
300-level or above.

SPAN 526 Survey of Spanish Literature to the
18th Century
3 hrs.

A survey of Spanish literature from its origin to,
and including, the seventeenth century.
Prerequisites: SPAN 316, 317 and 325.

SPAN 527 Survey of Spanish Literature from
the 18th Century to the Present
3 hrs.

A survey of Spanish literature from the

eighteenth century to the present.
Prerequisites: SPAN 316, 317 and 325.

SPAN 528 Survey of Spanish American
Literature to Modernismo
3 hrs.

A survey of Spanish American literature from
its origin to the era of Modernismo (late 19th
century). Prerequisites: SPAN 316, 317, and
325.

SPAN 529 Survey of Spanish American
Literature from Modernismo to the Present
3 hrs.

A survey of Spanish American literature from
late 19th century to the present. Prerequisites:
SPAN 316, 317, and 325.

SPAN 550 Independent Study in Spanish
1-3 hrs.

Directed, individual study of a specific topic in
a Spanish literary or linguistic area.
Departmental approval required for admission.
Repeatable for credit. Prerequisite: One

500-level literature course in the major; a

minimum grade point average of 3.0 in the
major. Not open to minors.

SPAN 560 Studies in Spanish Literatures
3 hrs.

Topic varies according to genre, author, or
period and will be announced. Each of these
courses carries separate credit, although all

are listed under 560. Thus, a student may take

any or all of the offerings at various times.
Prerequisite: SPAN 316, 317, and 325.
Representative topics which may be treated in

Geography Minor

GEOGRAPHY
Eldor C. Quandt, Chair
Elen M. C. Cutrim

20 hours credit

David G. Dickason
Julie Fischer
Rolland Fraser

GEOG 105
or

GEOG 205

Chansheng He
David Lemberg
Phillip P. Micklin
Henry A. Raup

Cervantes— Don Quixote and other works of

Barca.

Nineteenth Century—The Romantic

Movement.

Nineteenth Century Novel—Development of
the regional novel from Fernan Caballero
through Blasco Ibanez.
Generation of '98—Thought and works of
typical representatives such as Unamuno,
Azorin, Baroja, and A. Machado.
Contemporary Theater—Evolution and
analysis of the characteristics.
Spanish-American Short Story—Significant
short stories along with the cultural and social
background.
Contemporary Spanish-American
Novel—The new Spanish-American novel
along with the cultural and social background.

Human Geography

3 hrs.

Map, Chart and Air Photo
Reading
Remaining courses to be selected with

3 hrs.

consent of advisor.

Joseph P. Stoltman
llya Zaslavsky
These programs are designed to provide
students with an improved understanding of
humanity's physical and cultural surroundings
and the interrelations of all these. Students are

prepared through geography as a physical

and social science for careers in such diverse

fields as urban and regional planning,
cartography, environmental analysis, teaching
in elementary and secondary schools, and
tourism and travel. A program is also available
for those who desire to continue in graduate
studies.

A core of four courses (GEOG 105, 205,
265, 303) are required of majors. A nonteaching major in geography encompasses a
minimum of 32 hours. It is recommended that

6 additional hours of work from the comple

mentary disciplines be taken in support of the

area of specialization. An internship for
variable credit (GEOG 412) may be arranged
in this program. For those who intend to
pursue graduate work, it is recommended that
courses in mathematics and foreign
languages be considered as electives.
The department will accept, toward the
major or minor, credits earned at community
and junior colleges which correspond to the
100-, 200-, 300-level offered by this
department. However, transfer students should
meet with the undergraduate advisor as soon
as possible in order to finalize their program
and avoid the danger of duplication of course
work. Courses taken on a Credit/No Credit

basis may not be counted toward the major
except with the approval of the department
chairperson. An honors program is available
for students so recommended by members of
the faculty of the Department of Geography.
Prerequisites applicable to all 500-level
courses in Geography include junior status
and 14 credit hours of Geography or related
courses and consent of advisor and/or

Geography Major
Specialization
32 hours credit

The areas of specialization are: urban and
regional planning, geographic information
processing, environmental and resource
management, and regional geography. A

program of courses is provided for each of

these areas.

This major is focused upon courses designed
to meet a student's particular needs. An
internship (GEOG 412) is available for those
who wish to gain practical experience. This
can be done by either assisting faculty in
research or by working in an approved
off-campus agency. It is recommended that 6
additional hours of work from complementary
disciplines be taken in support of the area of
specialization.

GEOG 105 Physical Geography
GEOG 205 Human Geography
GEOG 265 Map, Chart and Air Photo
Reading

Students are invited to call at Wood Hall

3 hrs.

4 hrs.

Remaining courses must be selected with

consent of advisor.

Secondary
Education—Geography
Major
32 credit hours

GEOG 105
GEOG 205
GEOG 265
GEOG 303

GEOG 460

(phone 387-3410) for information concerning
the departmental major, minor, honors
program, or financial assistance.

4 hrs.
3 hrs.

GEOG 303' Geographic Inquiry

GEOG 380

instructor.

Physical Geography
Human Geography
Map, Chart and Air Photo
Reading
Geographic Inquiry

4 hrs.
3 hrs.
3 hrs.
4 hrs.

U.S. and Canada

3 hrs.

Concepts and Strategies in
the Teaching of
Geography
3 hrs.

Electives

12 hrs.

The choice of a physical or social science

emphasis within the major, and selection of all
remaining courses and the minor will be made

Baccalaureate Writing
Requirement

with the consent of a departmental advisor.

Students who have chosen either the

Geography or Tourism and Travel major will
satisfy the Baccalaureate Writing Requirement
by successfully completing GEOG 303
Geographic Inquiry.

Geography Major

Secondary
Education—Geography
Minor

22 credit hours

32 hours credit

One course from Group II
One course from Group III

4 hrs.

GEOG 265

Hans J. Stolle

GEOG 105 Physical Geography
GEOG 205 Human Geography
GEOG 265 Map, Chart and Air Photo
Reading
GEOG 303 Geographic Inquiry
Two courses from Group I at 200 level or

Physical Geography

and

this area include:

Cervantes, together with his life and thought.
Seventeenth Century Theater—Main works
of Lope de Vega through Calderon de la

123

4 hrs.
3 hrs.

3 hrs.
4 hrs.
above

GEOG 105 Physical Geography
GEOG 205 Human Geography
GEOG 265 Map, Chart, and Air Photo
Reading
GEOG 303 Geographic Inquiry
GEOG 380

4 hrs.

3 hrs.

3 hrs.
4 hrs.

U.S. and Canada

3 hrs.

Geography

3 hrs.

GEOG 460 Concepts and Strategies in
the Teaching of
and 2 additional hours


Science and Mathematics Teaching Minor

The Department of Geography participates in the science and mathematics teaching minor for students in the elementary curriculum. For a full description of the program, consult its listing under the "Interdisciplinary Programs" section in the College of Arts and Sciences.

Science Credit

The geography courses 100, 105, 204, 225, 265, 306, 350, 375, 521, 553, 554, 555, 557, 566, 569, and 602 are acceptable for science credit in appropriate science sequences.

Courses By Topic

SYSTEMATIC GEOGRAPHY

GEOG 100 World Ecological Problems and Man 4 hrs.
GEOG 102 World Geography Through Media and Maps 3 hrs.
GEOG 105 Physical Geography 3 hrs.
GEOG 204 National Park Landscapes 3 hrs.
GEOG 205 Human Geography 3 hrs.
GEOG 225 Introduction to Meteorology and Climatology 4 hrs.
GEOG 244 Economic Geography 3 hrs.
GEOG 306 The Atmospheric Environment and Society 4 hrs.
GEOG 350 Conservation and Environmental Management 3 hrs.
GEOG 356 Introduction to City and Regional Planning 3 hrs.
GEOG 408 Geography of Travel and Tourism 3 hrs.
GEOG 521 Studies in Climatology and Meteorology 4 hrs.
GEOG 544 Studies in Economic Geography 4 hrs.
GEOG 545 Studies in Human Geography 4 hrs.
GEOG 553 Water Resources Management 3 hrs.
GEOG 554 Outdoor Recreation: Resources and Planning 3 hrs.
GEOG 555 Contemporary Issues in Resources Management 3 hrs.
GEOG 556 Studies in Urban and Environmental Impact Assessment 3 hrs.
GEOG 570 Cities and Urban Systems 3 hrs.

REGIONAL GEOGRAPHY

GEOG 309 Studies in Regional Geography 4 hrs.
GEOG 311 Geography of Michigan 3 hrs.
GEOG 380 United States and Canada 3 hrs.
GEOG 381 South America 3 hrs.
GEOG 382 Mexico and the Caribbean 3 hrs.
GEOG 383 Western and Southern Europe 3 hrs.
GEOG 384 The Post-Soviet States 3 hrs.
GEOG 385 The Pacific Realm 3 hrs.
GEOG 386 Sub-Saharan Africa: Man, Environment, and Resources 3 hrs.
GEOG 387 The Middle East and North Africa 3 hrs.
GEOG 389 Monsoon Asia 3 hrs.

GEOGRAPHIC METHODOLOGY AND RESEARCH

GEOG 265 Map, Chart, and Air Photo Reading 3 hrs.
GEOG 303 Geographic Inquiry 3 hrs.
GEOG 310 Research and Regulations/Tourism 3 hrs.
GEOG 408 Geography of Travel and Tourism 4 hrs.
GEOG 409 Geographical Information Systems 4 hrs.

Electives: In consultation and with the approval of the program advisor, students from the secondary education curriculum who major in geography and choose a social science emphasis must also complete a minor in group social science of at least 24 hours comprising the following: ECON 201 and 202; 9 hrs.

Three courses in History including at least one at the 300/400-level; 6 hrs.

Two courses in Political Science including at least one at the 300/400-level; 6 hrs.

Electives approved by the major advisor from the above disciplines, or from anthropology or sociology; minimum of 12 hrs.

Overall in minor at 300/400-level.

Group Social Science Minor

Students in the elementary/middle school/junior high school curricula who choose a group social science minor should refer to the "Interdisciplinary Programs" section of this catalog.

Tourism and Travel Major

32 credit hours

The tourism and travel major is designed for students planning to pursue careers in the tourism and travel industry. Application is required for acceptance to this major. An application form is available from the Undergraduate Advisor, Department of Geography, Wood Hall, Western Michigan University, Kalamazoo, Michigan 49008.

Required

GEOG 105 Physical Geography 4 hrs.
GEOG 205 Human Geography 3 hrs.
GEOG 256 Map, Chart and Air Photo Reading 3 hrs.
GEOG 303 Geographic Inquiry 4 hrs.
GEOG 310 Research and Regulations/Tourism 4 hrs.
GEOG 408 Geography of Travel and Tourism 4 hrs.

At least two of the following required courses:

GEOG 311 Geography of Michigan 3 hrs.
GEOG 380 United States and Canada 3 hrs.
GEOG 381 South America 3 hrs.
GEOG 382 Mexico and the Caribbean 3 hrs.
GEOG 383 Western and Southern Europe 3 hrs.
GEOG 384 The Post-Soviet States 3 hrs.
GEOG 385 The Pacific Realm 3 hrs.
GEOG 386 Sub-Saharan Africa: Man, Environment, and Resources 3 hrs.
GEOG 387 The Middle East and North Africa 3 hrs.
GEOG 389 Monsoon Asia 3 hrs.

GEOGRAPHIC METHODOLOGY AND RESEARCH

GEOG 265 Map, Chart, and Air Photo Reading 3 hrs.
GEOG 303 Geographic Inquiry 3 hrs.
GEOG 310 Research and Regulations/Tourism 3 hrs.
GEOG 375 Principles of Cartography 3 hrs.
GEOG 412 Professional Practice 3 hrs.
GEOG 460 Concepts and Strategies in the Teaching of Geography 3 hrs.
GEOG 566 Field Geography 3 hrs.
GEOG 567 Geodata Handling and Mapping 3 hrs.
GEOG 568 Quantitative Methodology 3 hrs.
GEOG 569 Geographic Information Systems 3 hrs.
GEOG 580 Advanced Cartography 3 hrs.
GEOG 582 Resource Surveying of the Environment 3 hrs.
GEOG 597 Readings in Geography 3 hrs.
GEOG 244 Economic Geography 3 hrs.
This course reviews the spatial processes and patterns for primary production, transportation, manufacturing and energy, service functions, trade, and economic development.

GEOG 265 Map, Chart and Air Photo Reading 3 hrs.
(Science credit) Introductions to the fundamental principles that link maps and nature scale, surface transformations of earth relief and round planet; selection, simplification, and symbolization of data, reference grids and orientation. Methods of map reading, analysis, and interpretation are practiced on maps of different kinds and scales. Air photos and other remotely sensed images and their application are also introduced.

GEOG 303 Geographic Inquiry 4 hrs.
Students will be introduced to geography as a field of study, research and professional opportunity. Students will have an opportunity to investigate social and environmental problems through data collection, analysis, interpretation, and graphic and written presentation. The emphasis throughout will be on the application of inquiry models to geographic problems. For Geography majors and minors and Tourism and Travel majors. Course meets University Baccalaureate Writing Requirement. Prerequisite: CS 105 or equivalent.

GEOG 306 Atmospheric Environment and Society 3 hrs.
(Science credit) The study of the atmospheric environment as it interacts with humans and society. Special emphasis is given to the following: the role of weather and climate in affecting the successful outcome of plans and economic decisions; the dynamics of changing climates and their role in affecting the course of history; human physiological and psychological responses to weather and climate; weather forecasting and its value to society, and the hazards to life, health, and properly posed by severe weather. Students should expect to achieve a sufficient understanding of the atmospheric environment so that they may make informed decisions involving weather topics.

GEOG 309 Studies in Regional Geography 2-3 hrs.
An investigation of topics in physical and human geography of selected areas within major world regions. Regional concentration will vary from semester to semester, with the region being indicated at time of enrollment. Prerequisite: consent of department advisor and instructor.

GEOG 310 Research and Regulation in Tourism 4 hrs.
This course introduces the research methods and data sources for the analysis of tourism and travel. The use of flow patterns and the predictive modeling of spatial interaction as well as geographic theories related to diffusion and effects of regulations on flow patterns will be investigated. For Tourism and Travel majors only.

GEOG 311 Geography of Michigan 3 hrs.
An introduction to the physical and cultural patterns in Michigan with emphasis upon an understanding of the distribution of population, resources, and forms of economic activity. Attention is also focused upon relevant current State problems.

GEOG 350 Conservation and Environmental Management 3 hrs.
(Science credit) A critical evaluation of the management of selected natural resources with primary emphasis on the United States. Conflicts between environmental and economic interests are examined in both historical and contemporary contexts.

GEOG 356 Introduction to City and Regional Planning 3 hrs.
Intended to provide the student with an introduction to planning thought and professional practice, examination of the evolution from traditional physical land-use planning to the comprehensive planning process which incorporates physical, social, and economic elements; consideration of the impact of planners and planning movements of the 19th and early 20th centuries such as the "New Towns" programs; relationship of planning to zoning, the emergence of regional administrative units and regional planning programs.

Population distribution and settlement patterns are examined in geographically specified areas. Population topics include mapping and analysis, theories of population change, and types of migration. Emphasis is also placed on functions and structure of urban and rural settlements in selected world regions.

GEOG 375 Principles of Cartography 4 hrs.
(Science credit) Introduction to map construction with primary emphasis on planning and designing maps as communication medium. Lectures and laboratory assignments familiarize the student with layout and design of maps, computer assisted mapping, the computation of map projections, procedures of map compilation, and the basics of map reproduction. Prerequisite: GEOG 265 or equivalent.

GEOG 380 United States and Canada 3 hrs.
A study of the physical environment of the Rio Grande followed by an analysis of the spatial structure of the area's population and economy. The basis for the regional differentiation of the USA and Canada is considered, followed by a region-by-region analysis of each area's unique integrations of physical and cultural phenomena.

GEOG 381 South America 3 hrs.
Regional study of the nations of South America with attention to the interrelationships of the physical and cultural environments. Historical background necessary for the interpretation of the present political, social, and economic conditions is included.

GEOG 382 Mexico and the Caribbean 3 hrs.
Systematic review of the physical and cultural environments of Mexico, Central America and the West Indies. Economic, social and political issues will be examined from a spatial viewpoint.

GEOG 383 Western and Southern Europe 3 hrs.
Intensive regional study of those European nations. The physical elements (climate, landforms, resources, etc.) are examined and the derivative cultural elements are identified. Emphasis is placed upon the social and economic activities of contemporary Western and Southern Europe.

GEOG 384 The Post-Soviet States 3 hrs.
A geographical appraisal of the newly independent republics. Topics covered include: location and geographical setting, the physical environment, ethnic, nationality issues, economic development, and problems of environmental deterioration.

GEOG 385 The Pacific Realm 3 hrs.
Selected studies of the relationships between human beings and the environment in Australia, New Zealand, Melanesia, and Polynesia.

GEOG 386 Sub-Saharan Africa: Man, Environment, Resources 3 hrs.
Survey of the principal physical and political patterns of Africa south of the Sahara, followed by studies of the significant elements of the major realms and states, e.g., population distribution, patterns of subsistence and commercial agriculture, status of mineral and power resource development, transportation routes, regional development programs.

GEOG 387 The Middle East and North Africa 3 hrs.
Study of the diversity and uniformity—both physical and cultural—of the Middle East and North Africa north of (and including) the Sahara. Special attention is given to arid problems, economic development, petroleum, Arab reunification movements, and the impact of the Muslim World on the current political scene.

GEOG 389 Monsoon Asia 3 hrs.
Systematic survey of the physical and human (socio-economic) environments of the southeastern rim of Asia (Pakistan in the west to Japan in the east). Geographic background necessary to interpret present conditions is included.

GEOG 408 Geography of Travel and Tourism 4 hrs.
The student studies global environments and transportation systems to analyze travel and tourism trends and opportunities. An examination of resort areas, tourist frequency patterns to various resorts, cultural opportunities, and perception of places through travel brochures and literature are included in the course. Theoretical assumptions underlying the making of place and mental maps of tourism and travel preferences are examined. For Tourism and Travel majors only.

GEOG 412 Professional Practice 2-6 hrs.
Provision for an advanced student to benefit by supplementary practical experiences in a particular branch of geography, either by assisting faculty engaged in research or by working in a departmentally-approved off-campus agency. Specific assignments are arranged in consultation with departmental advisors during the semester preceding that in which the student expects to enroll in 412. The student may enroll for one additional semester, but no student will be allowed more than six hours total credit for 412. For Geography majors and minors, and Tourism and Travel majors only. Prerequisite: Junior standing and consent of Department Chair.

GEOG 460 Concepts and Strategies in the Teaching of Geography 3 hrs.
Study of objectives, tools, organization and presentation of material, methods of evaluation, and scrutiny of textbook material in the field of geography. This course is intended for students in the Elementary and Secondary Education Curriculum who are Geography,
Social Science, and Group Social Science majors and minors.

Prerequisites applicable to all 500-level courses in Geography include 14 credit hours of geography, or consent of advisor and instructor.

GEOG 521 Studies in Climatology and Meteorology 3 hrs. Prerequisites applicable to all 500-level courses in Geography include 14 credit hours of geography, or consent of advisor and instructor. The course focuses on one of these themes:

1. Agriculture. Describes and analyzes the distribution of major crops and livestock, and their combinations in common farming operations. The spatial organization of agriculture through time is analyzed for selected areas.

2. Industry. Evaluates the general distribution and locational factors associated with selected industries, giving particular attention both to models of industrial location and to the empirical examination of economic, technological, and political elements affecting the locational decision.

3. Transportation. Emphasizes the historical evolution of transport systems in developed and developing nations, transport factors in location theory, techniques of transport analysis, the urban transport problem, and competitive and complementary characteristics of transport modes in differing political systems.

Prerequisites: GEOG 205 and GEOG 244 or consent of department.

GEOG 544 Studies in Economic Geography 2-3 hrs. Prerequisites: GEOG 205, GEOG 244, or consent of department. The course focuses on one of these themes:

1. Agriculture. Describes and analyzes the distribution of major crops and livestock, and their combinations in common farming operations. The spatial organization of agriculture through time is analyzed for selected areas.

2. Industry. Evaluates the general distribution and locational factors associated with selected industries, giving particular attention both to models of industrial location and to the empirical examination of economic, technological, and political elements affecting the locational decision.

3. Transportation. Emphasizes the historical evolution of transport systems in developed and developing nations, transport factors in location theory, techniques of transport analysis, the urban transport problem, and competitive and complementary characteristics of transport modes in differing political systems.

Prerequisites: GEOG 205 and GEOG 244 or consent of department.

GEOG 554 Studies in Human Geography 2-3 hrs. Prerequisites: GEOG 205, GEOG 244, or consent of department. Each course listed under this general title is a concentrated study of one of the principal characteristics of transport analysis, the urban transport problem, and competitive and complementary characteristics of transport modes in differing political systems.

Prerequisites: GEOG 205 and GEOG 244 or consent of department.

GEOG 558 Quantitative Methodology 3 hrs. Prerequisites: GEOG 205, GEOG 244, or consent of department. Each course listed under this general title is a concentrated study of one of the principal characteristics of transport analysis, the urban transport problem, and competitive and complementary characteristics of transport modes in differing political systems.

Prerequisites: GEOG 205 and GEOG 244 or consent of department.

GEOG 559 Geographic Information Systems 4 hrs. Prerequisites: GEOG 205, GEOG 244, or consent of department. Each course listed under this general title is a concentrated study of one of the principal characteristics of transport analysis, the urban transport problem, and competitive and complementary characteristics of transport modes in differing political systems.

Prerequisites: GEOG 205 and GEOG 244 or consent of department.

GEOG 560 Advanced Cartography 4 hrs. Prerequisites: GEOG 205, GEOG 244, or consent of department. Each course listed under this general title is a concentrated study of one of the principal characteristics of transport analysis, the urban transport problem, and competitive and complementary characteristics of transport modes in differing political systems.

Prerequisites: GEOG 205 and GEOG 244 or consent of department.

GEOG 562 Field Geography 2-4 hrs. Prerequisites: GEOG 205, GEOG 244, or consent of department. Each course listed under this general title is a concentrated study of one of the principal characteristics of transport analysis, the urban transport problem, and competitive and complementary characteristics of transport modes in differing political systems.

Prerequisites: GEOG 205 and GEOG 244 or consent of department.
first half of the semester. The remainder of the semester will be spent interpreting photos and satellite images dealing with such topics as geomorphology, archaeology, vegetation and soils, water resources, rural and urban land use as well as topics adapted to the interest and anticipated future work of the student. Prerequisite: GEG 265 or consent of the instructor.

GEOG 597 Readings in Geography
1-3 hrs.
Designed for highly qualified majors and graduate students who wish to study in depth some aspect of their field of specialization under a member of the departmental staff. Repeatable for credit. Prerequisite: Consent of department advisor and instructor.

GEOLOGY

Geology Major
Minimum 38 Hours

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>GEOL 130</td>
<td>Physical Geology</td>
<td>4</td>
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<tr>
<td>GEOL 131</td>
<td>Historical Geology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 335</td>
<td>Mineralogy</td>
<td>4</td>
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<tr>
<td>GEOL 336</td>
<td>Optical Mineralogy</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 430</td>
<td>Structural Geology</td>
<td>3</td>
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<tr>
<td>GEOL 439</td>
<td>Geologic Mapping or</td>
<td></td>
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<tr>
<td></td>
<td>A field course at another school</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 440</td>
<td>Petrology and Petrography</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 435</td>
<td>Sedimentation and Stratigraphy</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 560</td>
<td>Introduction to Geophysics</td>
<td>3</td>
</tr>
</tbody>
</table>

Elect one of the following:

GEOL 432 Geomorphology
GEOL 433 Invertebrate Paleontology
GEOL 512 Principles of Hydrogeology

A minimum of a "C" is required in each of the required Geology courses, and a "C" average in all cognate courses.

Baccalaureate Writing Requirement

Students who have chosen the Geology major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

GEOL 432 Geomorphology
GEOL 435 Sedimentation and Stratigraphy

Cognate Required Courses

CHEM 101 or 102 and 120, PHYS 113, 114, and 115, 116 or 205, 206 and 207, 206; BIOS 112 or 150 or as arranged by advisor; and MATH 122 and 123 and CS 105.

Introduction to Computers. Some modification of these requirements may be made in consultation with the student's departmental advisor.

Geology majors should elect minors in mathematics, computer science, chemistry, physics, or biology. Students electing one of the above minors must still complete all other cognate required courses. Students not electing one of the above minors may elect the group science minor for geology majors (see below).

Suggested four-year program of study for geology majors including all required cognate courses.

Freshman Year

Fall
GEOL 130
MATH 122
(Students with insufficient high school mathematics may have to take MATH 118 prior to 122.)

Winter
GEOL 131
MATH 123
BIOS 112 or 150

Sophomore Year

GEOL 335
CHEM 101 or 102
GEOL 433
CHEM 120

Junior Year

GEOL 336
GEOL 430
PHYS 113, 114 or 205, 206
GEOL 440
PHYS 115, 116 or 207, 208
CS 105

Summer Field Course in Geology

Senior Year

GEOL 432
GEOL 435
GEOL 560

Geology Minor

Minimum 18 Hours

Required Courses

<table>
<thead>
<tr>
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<tbody>
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<td>Mineralogy</td>
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<td>GEOL 440</td>
<td>Petrology/Petrography</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 512</td>
<td>Minerals and Rocks</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 433</td>
<td>Invertebrate Paleontology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 336</td>
<td>Optical Mineralogy</td>
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</tr>
<tr>
<td>GEOL 440</td>
<td>Petrology/Petrography</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives (9-12 hours)

Phys 330 Thermodynamics and Kinetic Theory
PHYS 352 Optics
PHYS 440 Electricity and Magnetism

Total Major Hours: 49-54

Major Core: 40-42

Geology (GEOL) (20 hours)
GEOL 130 Physical Geology
GEOL 131 Historical Geology
GEOL 335 Mineralogy
GEOL 430 Structural Geology
GEOL 439 Geologic Mapping
GEOL 560 Introduction to Geophysics

Geophysics (PHYS) (17-18 hours)
PHYS 205 Mechanics and Heat
PHYS 206 Mechanics and Heat Laboratory
PHYS 207 Electricity and Light
PHYS 208 Electricity and Light Laboratory
PHYS 309 Introductory Modern Physics
PHYS 310 Introductory Modern Physics Laboratory
PHYS 342 Electronics

One of the following (3-4 hours)
PHYS 330 Thermodynamics and Kinetic Theory
PHYS 352 Optics
PHYS 440 Electricity and Magnetism

Electives (9-12 hours)
Three electives from upper-level geology, physics, and engineering courses to be chosen with consent of advisor (3-12 hours).

MATHEMATICS MINOR (Required) (MATH) (21 hours)

MATH 122 Calculus I .................................. 4
MATH 123 Calculus II ................................ 4
MATH 272 Vector and Multivariate Calculus ........... 4
CS 306 Introduction to Programming FORTRAN .... 2
MATH 374 Linear Algebra and Differential Equations ... 4
MATH 506 Scientific Programming .................. 3

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Earth Science Teaching Major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

GEOL 435 Sedimentation and Stratigraphy
ENG 305 Practical Writing
ED 395 School and Society

MAJOR (30 hours) Hrs.

Required Courses

PHYS 105 Introductory Astronomy .... 3
GEOG 225 Introduction to Meteorology and Climatology 4
GEOL 130 Physical Geology .......... 4
GEOL 131 Historical Geology ....... 4
GEOL 222 Oceanography ............ 3
GEOL 301 Minerals and Rocks ...... 4
GEOL 404 Teaching of Secondary Science .... 2
GEOL 438 or 499 Field Studies in Geology ........ 3
Electives ......................................... 3

MINOR (20 hours) Hrs.

Required Courses

PHYS 105 Introductory Astronomy 3
GEOG 225 Introduction to Meteorology and Climatology 4
GEOL 130 Physical Geology 4
GEOL 131 Historical Geology 4
GEOL 222 Oceanography 3
GEOL 404 Teaching of Secondary Science 2

Electives ......................................... 3

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Earth Science Teaching Major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

GEOL 435 Sedimentation and Stratigraphy
ENG 305 Practical Writing
ED 395 School and Society

Required Supporting Courses

CHEM 101 or 102 (4 hours)

Group Science Minor For Geology Majors

Minimum 26 Hours

The group science minor is designed for students not electing a mathematics, chemistry, physics, or biology minor. Some modification of these requirements may be made in consultation with the student's departmental advisor. This minor is acceptable for education majors and minors.

Required Courses Hrs.

BIOLOGICAL SCIENCES (4 hours)
BIO 112 or 150 Molecular and Cellular Biology 4

CHEMISTRY (4 hours)
CHEM 101 OR 102 General Chemistry I 4
CHEM 120 General Chemistry II 4

PHYSICS (10 hours)
PHYS 113 General Physics I 4
PHYS 114 General Physics I Laboratory 1
PHYS 115 General Physics II 4
PHYS 116 General Physics II Laboratory 1

OR

PHYS 205 Mechanics and Heat ..... 4
PHYS 206 Mechanics and Heat Laboratory 1
PHYS 207 Electricity and Light 4
PHYS 208 Electricity and Light Laboratory 1

Electives

At least 4 credit hours selected from the physical or biological sciences with approval of student's advisor.

Earth Science: Teaching Major and Minor

The earth science teaching major and minor are designed for students preparing to teach in the elementary and secondary schools. No grade below a "C" will be accepted in the required courses. All majors must complete a minimum of one semester each of college physics and college chemistry.

Cognate requirements include a college level chemistry course (101, 102, or 103—recommended) and a college level physics course (107/108 or 113/114)

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Earth Science Teaching Major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

GEOL 435 Sedimentation and Stratigraphy
ENG 305 Practical Writing

Hydrogeology Major

Core: 39-40 hrs., Total: 74-75

The hydrogeology major is designed to give individuals at the bachelor's level a strong background in geology, hydrogeology, supporting sciences, mathematics and computer science. This program will prepare students to enter graduate programs and the job market as hydrogeologists.

Required Courses Hrs.

GEOL 430 Physical Geology .................. 4
GEOL 131 Historical Geology .......... 4
GEOL 301 Minerals and Rocks ......... 4
GEOL 430 Structural Geology .......... 3
GEOL 432 Geomorphology .............. 3
GEOL 435 Sedimentation and Stratigraphy .... 4
GEOL 512 Principles of Hydrogeology .... 3
GEOL 525 Surface Geophysics ........... 1
GEOL 526 Principles and Practices of Aquifer Testing ........ 1

Students must elect two (2) of the following courses:

GEOL 536 Glacial Geology .......... 3
GEOL 563 Electrical Methods .... 3
GEOL 562 Shallow Exploration Geophysics .... 3
GEOL 564 Field Geophysics ........ 3
GEOL 567 Computerized Geodata Handling and Mapping .... 3
GEOL 588 Remote Sensing of the Environment .... 3
FCS 361 Introduction to Soils .... 3
PAFR 350 Water Qual & Microbiol .... 3
PAFR 353 Wasterwater Treat. Sys. .... 3

Required Supporting Courses

MATH 122 Calculus I ......................... 4
MATH 123 Calculus II ......................... 4
PHYS 205 Mechanics and Heat ...... 4
PHYS 206 Mechanics and Heat Laboratory 1
PHYS 207 Electricity and Light .... 4
PHYS 208 Electricity and Light Laboratory 1

Students who have taken Physics 113, 114 and 115, 116 or their equivalent will be required to take Physics 214 (1 hr.) and Physics 215 (1 hr.)

CHEM 102 General Chemistry I .... 4
CHEM 120 General Chemistry II .... 4
CHEM 365 Introduction to Organic Chemistry .... 4
CS 111 Computer Programming .... 3

MINORS

Students must elect one of the following:

- Biology, Computer Science, Chemistry, Mathematics, Geography, or Group Science for Geology Majors.

RECOMMENDED ADDITIONAL COURSES

CHEM 222 Quantitative Analysis .......... 4
CHEM 525 Techniques in Water Analysis .... 3
MATH 274 Introduction to Differential Equations .... 3
MATH 364 Statistical Methods ........ 4
CS 201 Programming in FORTRAN .... 2
COM 104 Public Speaking ............. 3
COM 170 Interpersonal Communication I .... 3
ENGL 305 Practical Writing .... 4

A minimum of a "C" is required in each of the required Geology courses, and a "C" average in all cognate courses.

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Hydrogeology major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

- Additional courses and cognate requirements include a college level chemistry course (101, 102, or 103) and a college level physics course (107/108 or 113/114)
GEOL 432 Geomorphology
GEOL 435 Sedimentation and Stratigraphy

Science and Mathematics Teaching Minor

The Department of Geology participates in the science and mathematics teaching minor for students in the elementary curriculum. For a full description of the program consult listing under the “Interdisciplinary Programs” section in the College of Arts and Sciences.

Geology Courses (GEOL)

A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

GEOL 100 Earth Studies
4 hrs.
Students are introduced to the origin of the solar system and the earth-moon system with emphasis on humankind’s place in the universe. Students will investigate the materials and processes that shape the earth and the geologic hazards that affect our lives. Mineral, water, and energy resources will be considered in the context of their occurrence and limitations. Plate tectonics and the origin and evolution of life will be used to frame the course. 3 lectures and a 2 hour lab period. Fulfills General Education Area 6.

GEOL 129 Physical Geology Laboratory
1 hr.
A laboratory experience covering minerals and rocks, and the interpretation of topographic and geologic maps. Prerequisite: Minimum 3 hours of nontechnical geology.

GEOL 130 Physical Geology
4 hrs.
A study of the common rocks and minerals and the geologic processes acting upon these materials that form the structure and surface features of the earth. Three lectures and a two-hour laboratory period. Fulfills General Education Area 6.

GEOL 131 Historical Geology
4 hr.
Geologic time, evolution of prehistoric life, and principles of earth history with case examples from North America. Prerequisite: GEOL 130 or GEOL 100 and 129.

GEOL 144 Environmental Earth Science
3 hrs.
A study of the earth from an environmental perspective. Origin of the earth and solar system, physical and chemical structure of the earth, chronology, and the use of the scientific method to advance this understanding. Focus on the hydrosphere, atmosphere, biosphere, and lithosphere and their interactions. Fulfills General Education Area 7.

GEOL 200 Evolution of Life—A Geological Perspective
4 hrs.
A consideration of the diversity of life through time with emphasis on the geological constraints on evolution. Evolutionary processes and patterns of selected fossil groups from single-celled organisms to the vertebrates. Evolution of plants and animals, and mechanisms of extinction will be discussed. Fulfills General Education Area 6.

GEOL 222 Ocean Systems: Resources, Technology, and Challenges
3 hrs.
The ocean system encompasses more than seventy percent of the world’s surface, and comprises one of the largest resources that the peoples of the world hold in common. This course will explore our understanding of this complex system, and the evolution of technology on which this understanding is based. The arts and benefits of the past present, and future use of the world ocean will be considered in the context of competing values and interests. Fulfills General Education Area 7.

GEOL 300 Oceanography
3 hrs.
Survey of oceanographic sciences including physical, chemical, biological, and geological oceanography.

GEOL 301 Minerals and Rocks
4 hrs.
A one semester course covering hand specimen mineralogy and petrology, includes introduction to crystallography, physical and chemical properties of minerals, and rock description and genesis. Will not count toward a major in geology. Prerequisite GEOL 130, a course in college-level chemistry or consent of instructor.

GEOL 312 Geology of the National Parks and Monuments
2 hrs.
A study of the origin of geologic features and the development of landscapes through geologic time in selected National Parks and Monuments. Students will be expected to read extensively in the available literature. Fulfills General Education Area 7.

GEOL 335 Mineralogy
4 hrs.
Introduction to crystallography, crystal chemistry, and determinative mineralogy. Physical and chemical properties, occurrence, uses and determination of about 100 minerals. Lecture 3 hours a week. Laboratory 3 hours a week. Prerequisite: GEOL 100 or GEOL 130; CHEM 101, CHEM 102, or CHEM 103; or consent of instructor.

GEOL 336 Optical Mineralogy
3 hrs.
Principles and methods of optical crystallography. Study of minerals in crushed grains and in thin sections. Prerequisite: GEOL 335 or consent of instructor.

GEOL 344 Introduction to Environmental Geology
3 hrs.
An introduction to geology of the environment. Emphasis is placed on the geology of natural hazards, waste disposal systems, earthquakes, floods, erosion and sedimentation, volcanic processes related to human occupation of land, and aspects of urban geology. Prerequisite: GEOL 131 and junior standing; GEOL 301 or GEOL 335; or consent of instructor.

GEOL 404 Teaching of Secondary Science
3 hrs.
This course addresses the topics of teaching and learning of science at the secondary level. It is designed for those in secondary education who intend to be certified to teach the earth, life, or physical sciences (physics and chemistry) and focuses on the issue of how students learn science concepts and problem-solving skills in meaningful ways. The course develops models of effective instructional strategies designed to promote student learning and understanding of science concepts and processes. Practical methods for demonstrating, using models, planning laboratory experiences, managing science equipment, and safety concerns are developed and discussed. Students also work in discipline-specific groups to address issues unique to that area of science and the science classroom. Prerequisites: 15 hours of science in a certifiable science discipline and ED 302 which may be taken concurrently.

GEOL 412 Introduction to Hydrogeology
3 hrs.
This general survey course in hydrogeology introduces the occurrence, movement, and contamination of ground and surface water. Prerequisite: GEOL 301; MATH 122 or MATH 200; CHEM 101 or CHEM 102; and PHYS 107/108 or PHYS 113/114.

GEOL 430 Structural Geology
3 hrs.
Development of rock structures and mechanics of rock deformation. Structural interpretation of geologic maps, cross-sections, and aerial photographs. Prerequisites: GEOL 131; GEOL 301 or GEOL 335; MATH 118; or consent of instructor.

GEOL 432 Geomorphology
3 hrs.
Detailed consideration of the earth’s surficial processes including transformation of fluvial, glacial, mass-wasting, eolian, and coastal landforms. Laboratory exercises involve interpretation of topographic maps, geologic maps, and aerial photographs. Three-day field trip required. Prerequisites: GEOL 131; GEOL 301 or GEOL 335; PHYS 107/108 or PHYS 113/114; CHEM 101 or CHEM 102; and MATH 118 or MATH 200.

GEOL 433 Invertebrate Paleontology
4 hrs.
Morphology, classification, evolution, and stratigraphic distribution of major invertebrate fossil groups. Prerequisite: GEOL 131 or consent of instructor.

GEOL 434 Problems in Geology
1–3 hrs.
Intensive reading and research on a topic in geology under the direction of a member of the geology faculty. Prerequisite: 16 hours in Geology and permission of department.

GEOL 435 Sedimentation and Stratigraphy
4 hrs.
Processes, characteristics, and relationships among fluvial, deltaic, strand plain, lagoon, shelf, and slope terrigenous depositional systems. Laboratory includes textural analysis, sedimentary structures, paleocurrent analysis, electric logs, subsurface maps, and application of statistical and computer methods to the solution of sedimentologic problems and basin analysis. Course includes a three-day field trip. Prerequisite: GEOL 131 and GEOL 301 or GEOL 335.

GEOL 436 Field Studies in Geology
3 hrs.
Field observations and introduction to geologic mapping. Aspects of landscape evolution, rock-forming processes, and rock deformation will be studied. Emphasis will be on how observations are combined to make geologic interpretations and how the geologic history and evolution of a region can be interpreted from field data. Prerequisite: GEOL 301 or consent of instructor.

GEOL 439 Geologic Mapping
3 hrs.
Field observations and geologic mapping. Rock-oriented mapping projects will be completed under supervision that requires observations and synthesis of rock descriptions, structural analyses, stratigraphic interpretations, and compilations of the geologic history of assigned study areas. Prerequisites: GEOL 301 or GEOL 440; GEOL 430; or consent of instructor.

GEOL 440 Petrology and Petrography
3 hrs.
Classification, origin, and description of igneous, sedimentary, and metamorphic rocks. Laboratory study of rocks and thin sections. Prerequisite: GEOL 336, CHEM 120.
GEOL 502 Problems in Geology and Earth Science
1-3 hrs.
Individual problems involving topical reading and research problems in earth sciences. May be repeated for credit. Prerequisite: GEOL 130, GEOL 300, GEOL 301, GEOL 440, and consent of department.

GEOL 503 Environmental Consulting Practice
2 hrs.
An introduction to the principles and practices that are peculiar to environmental consulting. Emphasis is placed on the legal, business, and practical considerations needed to conduct a consulting practice. This course is not to be counted toward the 80 credits beyond the Master's in the Ph.D. program. Prerequisite: Graduate standing in geology or earth science.

GEOL 509 Surface Water Hydrology
3 hrs.
Hydrology describes the waters of the earth, their occurrence, circulation and distribution, and their reaction with the environment. Emphasis is on quantitative aspects of surface water. Topics include: stream flow, precipitation, evapotranspiration, hydrographs, runoff, probability analysis and modeling.

GEOL 512 Principles of Hydrogeology
3 hrs.
The study of surface and ground water with special emphasis on its occurrence, movement, and relation to the geologic environment. Prerequisite: GEOL 301 or GEOL 335; MATH 122. MATH 123 may be taken concurrently.

GEOL 515 Applied Hydrology
3 hrs.
Application of hydrogeologic theory to water supply networks. Topics include: well installation, well testing; aquifer testing, and distribution systems. Prerequisite: GEOL 512.

GEOL 516 Geochronology and Global Change
3 hrs.
Application of the concepts of nuclear physics and chemistry to geological problems. Topics include absolute and relative dating, formation of the elements, global change and causes of global change. Prerequisites: GEOL 335 and basic knowledge of Chemistry, Physics, and Math.

GEOL 520 Economic Geology
3 hrs.
Origin, occurrence, and utilization of metallic and non-metallic mineral deposits, and mineral fuels. Lecture 3 hours a week. Prerequisite: GEOL 301 or GEOL 335.

GEOL 525 Surface Geophysics
1 hr.
An introduction to the use of those surface geophysical methods used in the investigation of ground water. Includes shallow seismic electrical methods, and ground-penetrating radar. Prerequisite: GEOL 412 or GEOL 512.

GEOL 526 Principles and Practices of Aquifer Testing
1 hr.
Introduction to the methods of aquifer testing with emphasis on step drawdown pump-tests, forty-hour pumping test with recovery, slug tests and bail tests, data processing, using computer software, water level recorders, data loggers, and water level measuring equipment. Prerequisite: GEOL 412 or GEOL 512.

GEOL 527 Principles of Well Drilling and Installation
1 hr.
An introduction to hollow-stem auger drilling and well installation, rotary drilling with mud and air, cable tool drilling, monitoring well design, sample collection and description, cuttings, split spoon, and Shelby tube, borehole geophysics, and installation and development of wells. Prerequisite: GEOL 412 or GEOL 512.

GEOL 528 Principles and Practices of Ground-water Sampling and Monitoring
1 hr.
An introduction to state-of-the-art techniques for sampling, monitoring, and evaluating ground water systems and surface water interactions. Includes quality control and assurance procedures, ground-water sampling equipment and procedures, field hydrochemical equipment and procedures, and vadose zone sampling of water and gas. Prerequisite: GEOL 412 or GEOL 512.

GEOL 530 Plate Tectonics and Earth Structure
3 hrs.
Major tectonic features and internal structure of the earth in relation to plate tectonics, critical examination of the tenants of plate tectonics. Prerequisites: GEOL 301 or GEOL 335; GEOL 430 or consent of instructor.

GEOL 536 Glacial Geology
3 hrs.
A study of the mechanics of glacier movement, processes of glacial erosion and deposition, and the distribution of glacial features in space and time. Special emphasis will be placed on the glacial geology of the Great Lakes area. Prerequisites: GEOL 301 or GEOL 335.

GEOL 544 Environmental Geology
3 hrs.
Geology related to human affairs and land use planning. Includes engineering properties of earth materials, waste disposal systems, slope stability, floods, erosion and sedimentation, land subsidence, volcanic hazards, earthquakes, and urban geology. Field trips required. Prerequisite: GEOL 131; GEOL 301 or GEOL 335; or consent of instructor.

GEOL 560 Introduction to Geophysics
3 hrs.
Seismology, gravity, geomagnetism, electrical resistivity, and heat measurements applied to the determination of the internal structure of the earth. Two lectures and three hours of practical laboratory-introduction to geophysical instrumentation. Prerequisites: GEOL 301 or GEOL 440; GEOL 430; MATH 122; two semesters of college physics; or consent of instructor.

GEOL 561 Reflection Seismology
3 hrs.
Reflection seismology and related techniques as applied to petroleum exploration and deep crustal exploration. Theoretical background, data collection, data processing and interpretation will be discussed. Prerequisites: GEOL 560; CS 306; MATH 123.

GEOL 562 Gravity and Magnetic Exploration
3 hrs.
Gravity and Magnetic methods applied to tectonic, mineral exploration, hydrogeologic and crustal studies. Theoretical background, instrumentation, surveying techniques, data reduction, processing, and computer modeling and interpretation will be discussed. Two lectures and three hours of laboratory, problem solving, and field exercises. Prerequisites: GEOL 560; MATH 123.

GEOL 563 Electrical Methods
3 hrs.
Resistivity sounding and profiling, induced polarization, spontaneous potential, electromagnetic methods using natural and artificial fields. Two lectures and 3 hr. laboratory with field studies and laboratory modeling. Prerequisites: GEOL 560, CS 306; MATH 123; PHYS 440; or consent of instructor.

GEOL 564 Field Geophysics
3 hrs.
Field studies demonstrating the use of seismic refraction, gravity, and electrical resistivity methods for glacial geology and ground-water problems in the Kalamazoo area. Prerequisite: GEOL 560.

GERMAN
See "Foreign Languages and Literatures" in the College of Arts and Sciences.
The Department of History offers several varying requirements. Students intending to major in history should consult the Handbook. History majors in the Public History major also must complete a foreign language through the 201-level by course work or by examination.

Public History Major (PUH)

This program is designed to prepare students for entry-level positions in fields of public history such as museum and archival administration, preservation/restoration work, interpretation, consulting, and applied research.

Major requirements:
1. HIST 190, 390.......................... 6
2. Two courses chosen from HIST 404, 406, 408, 410, 412.......................... 12
3. United States history, including HIST 315 or 318 and at least two courses at the 400/500 level.......................... 12
4. Electives in history.......................... 12
5. ANTH 210 and 250.......................... 7
6. Approved electives in other disciplines.......................... 12
7. Internship (HIST 495).................. 6

Minimum total of 64 hrs. in the major. The Public History major does not require a minor. History majors in the Public History major also must complete a foreign language through the 101 level by course work or examination.

History Major

SECONDARY EDUCATION CURRICULUM (SED)

The secondary teacher preparation program complies with Guidelines for the Certification of Teachers of History established by the American Historical Association.

Major requirements:
1. HIST 190, 390, 396.......................... 9
2. United States history including at least 6 hrs. at the 400/500 level.......................... 9
3. Non-Western history including at least 3 hrs. at the 400/500 level.......................... 6
4. European and/or General history including at least 3 hrs. at the 400/500 level.......................... 6
5. Minimum of 36 hrs. in history including at least 15 hrs. at the 400/500 level.......................... 6

In addition to the history major, students must complete the following:
1. A group social science minor of at least 24 hrs. including at least one at the 400/500 level
2. A foreign language through the 101 level by course work or by examination
3. Elective approved by the major advisor

Majors

Judith Stone, Undergraduate Advisor
4352 Friedmann Hall (387-5934)

History Major

COLLEGE OF ARTS AND SCIENCES CURRICULA; OTHER CURRICULA

Major requirements:
1. HIST 190, 390.......................... 6
2. HIST 496 OR 499.......................... 3
3. Minimum of 36 hrs. in history including 18 hrs. at the 400/500 level, with at least 12 hrs. at the 300 level or above in courses dealing specifically with European history before 1789, American history before 1877, ancient/medieval history, or courses on the pre-modern history of other civilizations.
4. A foreign language through the 101 level by course work or by placement examination.

NOTES: (1) Each student must complete at least two approved courses in American Indian history or culture, women’s history or women’s studies, African-American history or culture, or Hispanic-American history or culture. These courses may be included within the history major or group social science minor course work if selected from the appropriate disciplines. Certain courses in two of the humanities cognate requirements similarly may be included in the major or minor.
(2) All course work at the 300 level or above in the History major, group social science minor, and required cognates must be completed within ten years of commencing a directed teaching assignment. History majors must have completed at least six hours of History in courses numbered 420–596 with grades of “B” or better to be approved by the department for directed teaching.

Minors

Ronald Davis, Undergraduate Advisor
4301 Friedmann Hall (387-4650)

History Minor

COLLEGE OF ARTS AND SCIENCES AND OTHER CURRICULA

1. Minimum of 24 hrs. of course work (at least 18 hrs. in history; with adviser approval two courses in historical studies outside the department, in disciplines such as archaeology, art history, music or theatre history, period literature, etc., may be applied toward minor requirements in lieu of 100/200-level courses in history)

Public History Minor

1. HIST 404.......................... 3
2. Two courses from 406, 408, 410, 412.......................... 6
3. ANTH 210.......................... 3
4. One course from 315, 318.......................... 3
5. Two courses in United States history including at least one at the 400/500 level.......................... 6
6. Minimum of 28 hrs. of course work in the minor

History Minor

COLLEGE OF EDUCATION CURRICULA

Minor requirements:
1. At least four courses in United States history including 6 hrs. at the 400/500-level.......................... 12
2. Total of 21 hrs. in history including 9 hrs. at the 400-level

Cognate requirements:
1. One approved course in American literature at the 300-level or above.......................... 4
2. One approved course in the social sciences or humanities (other than History) at the 300 level or above dealing with American culture or institutions.......................... 3–4
3. Students whose teaching major is outside the College of Arts and Sciences must also complete HIST 396 (Secondary Methods SED).......................... 3

NOTE: All course work at the 300-level or above in the minor and required cognates must be completed within ten years of commencing a directed teaching assignment. Minors must have completed at least six hours

Baccalaureate Writing Requirement

Students who have chosen the History major will satisfy the Baccalaureate Writing Requirement by successfully completing HIST 390 Introduction to the Study of History.

Majors

Judith Stone, Undergraduate Advisor
4352 Friedmann Hall (387-5934)

History Major

COLLEGE OF ARTS AND SCIENCES CURRICULA; OTHER CURRICULA

Major requirements:
1. HIST 190, 390.......................... 6
2. HIST 496 OR 499.......................... 3
3. Minimum of 36 hrs. in history including 18 hrs. at the 400/500 level, with at least 12 hrs. at the 300 level or above in courses dealing specifically with European history before 1789, American history before 1877, ancient/medieval history, or courses on the pre-modern history of other civilizations.
4. A foreign language through the 101 level by course work or by placement examination.

NOTES: (1) Each student must complete at least two approved courses in American Indian history or culture, women’s history or women’s studies, African-American history or culture, or Hispanic-American history or culture. These courses may be included within the history major or group social science minor course work if selected from the appropriate disciplines. Certain courses in two of the humanities cognate requirements similarly may be included in the major or minor.
(2) All course work at the 300 level or above in the History major, group social science minor, and required cognates must be completed within ten years of commencing a directed teaching assignment. History majors must have completed at least six hours of History in courses numbered 420–596 with grades of “B” or better to be approved by the department for directed teaching.

Minors

Ronald Davis, Undergraduate Advisor
4301 Friedmann Hall (387-4650)

History Minor

COLLEGE OF ARTS AND SCIENCES AND OTHER CURRICULA

1. Minimum of 24 hrs. of course work (at least 18 hrs. in history; with adviser approval two courses in historical studies outside the department, in disciplines such as archaeology, art history, music or theatre history, period literature, etc., may be applied toward minor requirements in lieu of 100/200-level courses in history)

Public History Minor

1. HIST 404.......................... 3
2. Two courses from 406, 408, 410, 412.......................... 6
3. ANTH 210.......................... 3
4. One course from 315, 318.......................... 3
5. Two courses in United States history including at least one at the 400/500 level.......................... 6
6. Minimum of 28 hrs. of course work in the minor

History Minor

COLLEGE OF EDUCATION CURRICULA

Minor requirements:
1. At least four courses in United States history including 6 hrs. at the 400/500-level.......................... 12
2. Total of 21 hrs. in history including 9 hrs. at the 400-level

Cognate requirements:
1. One approved course in American literature at the 300-level or above.......................... 4
2. One approved course in the social sciences or humanities (other than History) at the 300 level or above dealing with American culture or institutions.......................... 3–4
3. Students whose teaching major is outside the College of Arts and Sciences must also complete HIST 396 (Secondary Methods SED).......................... 3

NOTE: All course work at the 300-level or above in the minor and required cognates must be completed within ten years of commencing a directed teaching assignment. Minors must have completed at least six hours
of History in course work numbered 420 through 596 with grades of "B" or better to be approved by the department for directed teaching.

Courses By Topic

### BASIC COURSES

- **100** Early Western Civilization
- **101** Modern Western World
- **103** History and Current Events
- **106** Historical Writing
- **120** Outline of American History
- **145** Heroes and Villains in the Middle Ages
- **190** Historians in the Modern World
- **210** American History to 1890
- **211** American History since 1890
- **212** American Culture
- **220** Introduction to Canadian Studies
- **250** Michigan History
- **270** Asian Civilizations
- **298** Directed Reading in History

### NORTH AMERICA

- **310** American Diplomatic History
- **314** American Minorities
- **315** Popular Art and Architecture in America
- **316** Women in United States History
- **318** Environment and the American Experience
- **320** American Military History
- **322** American West
- **324** Everyday Life in America
- **326** American Indian Cultural History
- **328** African-American Cultural History
- **330** History of Canada
- **416** Topics in Michigan History
- **420** Colonial America
- **421** The New Nation: American Revolution and Independence
- **422** Antebellum America
- **424** The Civil War and Reconstruction
- **425** United States, 1877-1919
- **426** United States 1920-1940
- **427** United States 1940-1960
- **428** United States since 1960
- **432** Women in America to 1870
- **433** Women in America since 1870
- **434** American Indians to 1887
- **435** American Indians since 1887
- **436** Topics in African-American History
- **439** Topics in United States History
- **530** Studies in Early American History
- **535** Studies in Recent American History

### EUROPE

- **336** Women in European History
- **349** Ancient Near East
- **350** Ancient Greece and the Hellenistic World
- **351** Ancient Rome
- **360** The Medieval World: Society and Culture
- **362** History of England
- **363** British and the British Empire
- **364** Modern Europe: Culture and Society
- **366** Russia Yesterday and Tomorrow
- **368** History of European Nations
- **440** Imperial Rome
- **441** Early Christianity
- **442** Byzantine Civilization
- **444** Early Medieval History
- **445** Later Medieval History
- **446** Renaissance Europe
- **447** The Reformation
- **450** Europe in the 17th and 18th Centuries
- **452** French Revolution and Napoleon
- **456** Europe 1815-1871
- **457** Europe 1871-1919
- **458** Europe 1919-1945
- **460** Europe since 1945
- **462** Great Ages in English History
- **465** Russia to 1855
- **466** Russia since 1855
- **468** Topics in European History
- **550** Studies in Medieval History
- **555** Studies in Modern European History

### NON-WESTERN

- **370** History of Latin America
- **376** Modern East Asia
- **384** Modern Islam
- **385** Modern Middle East
- **388** Introduction to African Civilization
- **471** History of Latin American Nations
- **476** Traditional China
- **477** Modern China
- **479** Modern Japan
- **485** Early Islam
- **488** History of West Africa
- **490** Topics in Asian and African History
- **555** Studies in Asian and African History

### GENERAl

- **300** Arts and Ideas: Ancient/Medieval
- **301** Modern Arts and Ideas
- **306** Technology and Culture
- **308** History of Medicine and Medical Care
- **332** Global History 1885-1945
- **333** The World since 1945
- **400** Topics in History
- **414** Topics in Military History
- **418** Topics in Legal and Constitutional History
- **517** Topics in Economic and Social History
- **519** Topics in Intellectual and Cultural History

### THEORY AND PRACTICE

- **390** Introduction to the Study of History
- **396** Teaching Methods for Secondary Schools
- **404** Introduction to Public History
- **406** Archives Administration
- **408** Museum Studies
- **410** Historic Preservation
- **412** Local History Techniques
- **496** Senior Seminar
- **499** Senior Thesis
- **515** Topics in Public History
- **591** Topics in Theory and Practice
- **592** Computers in Historical Research
- **595** History Writing Workshop
- **596** Local History Workshop

### OTHER COURSES

- **435** Internship
- **496** Directed Research
- **500** Studies in History
- **510** Colloquium
- **590** Seminar

### HISTORY COURSES (HIST)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

#### HIST 100 Early Western Civilization
- **3 hrs.**
- Survey of major developments in European civilization from ancient Greece and Rome to approximately 1500.

#### HIST 101 Modern Western World
- **3 hrs.**
- Survey of major developments in Western civilization from the Renaissance to the present.

#### HIST 102 Western Civilization: The Modern Era
- **3 hrs.**
- Survey of major developments in European civilization from the late nineteenth century to the present.

#### HIST 103 History and Current Events
- **3 hrs.**
- Historical background of selected contemporary issues and news events.

#### HIST 110 Outline of World History
- **3 hrs.**
- Broad patterns and themes in world history considered from the perspective of the major centers of civilization.

#### HIST 120 Outline of American History
- **3 hrs.**
- Overview of major themes and developments in the history of the United States. Students who complete HIST 120 may not receive credit for HIST 210 or 211.

#### HIST 145 Heroes and Villains in the Middle Ages
- **3 hrs.**
- A survey of the historical professions and the academic preparation needed to enter them. Introduction to basic research, analytical, and presentation skills in the discipline.

#### HIST 204 Business History
- **3 hrs.**
- The business community as an integral part of history and society. Uses the case study method and business biography to explore economic and financial issues in historical setting. Covers the whole range of Western history with emphasis on the American experience.

#### HIST 210 American History to 1890
- **3 hrs.**
- General survey of United States history from colonial times to the late nineteenth century.

#### HIST 211 American History since 1890
- **3 hrs.**
- General survey of United States history with emphasis on the twentieth century American experience.

#### HIST 212 American Culture
- **3 hrs.**
- Major concepts in American life as seen from the perspective of literature, the arts, and mass media, and the role of these forms of communication on the development of public historical consciousness.

#### HIST 250 Michigan History
- **3 hrs.**
- Political, economic and social development of Michigan with emphasis on its relation to the history of the United States.

#### HIST 270 Asian Civilizations
- **3 hrs.**
- Historical survey of the major civilizations of Asia and their interaction with one another and with the West.

#### HIST 298 Directed Reading in History
- **1–3 hrs.**
- Registration requires approval of the supervising faculty member and the Department Chair. May be repeated to a maximum of three semester hours.

#### HIST 300 Arts and Ideas: Ancient/Medieval
- **3 hrs.**
- Survey of the history and interplay of intellectual and artistic developments in the West from ancient through medieval times.

#### HIST 301 Modern Arts and Ideas
- **3 hrs.**
- Survey of the history and interplay of intellectual and artistic creativity from the Renaissance to the present. Covers all major areas of material culture.

#### HIST 306 Technology and Culture
- **3 hrs.**
- Major technological developments throughout history, and interaction between technological change and culture. Survey of ancient and medieval technology, the industrial revolution, and the twentieth century, including aspects of technology and culture outside the Western tradition.
HIST 308 History of Medicine and Medical Care
3 hrs.
Survey of the development of medicine as a science, a healing agency, and a social institution. Includes medical achievements from ancient to modern times, overview of the changing role of medical experts in various cultures, medical education, medical social work, and evolution of the nursing profession.

HIST 313 American Diplomatic History
3 hrs.
History of American foreign relations from the American Revolution to the present, emphasizing diplomacy of the twentieth century.

HIST 314 American Minorities
3 hrs.
Surveys of the historical experiences of American ethnic groups such as Black Americans, Native Americans, and major European, Asian, and Hispanic communities. Topics listed in Schedule of Classes. May be repeated under different topics. Topics may be cross-listed with BAS 300 or BAS 301.

HIST 315 Popular Art and Architecture in America
3 hrs.
Popular themes in American history as shown in paintings, buildings, cartoons, and commercial art. Extensive use of local illustrations adaptable to elementary and secondary teaching.

HIST 316 Women in United States History
3 hrs.
Women's legal and social status, work, daily life, and participation in major events and processes in United States history; variety of women's experience due to class, race, region, ethnicity, and religion. Survey of the women's movement and emergence of feminist perspectives.

HIST 318 Environment and the American Experience
3 hrs.
Impact of environmental conditions on American historical and cultural development; changing attitudes toward environmental issues.

HIST 320 American Military History
3 hrs.
Survey of major events and developments in North American and United States military history from the eighteenth century to the present.

HIST 322 The American West
3 hrs.
A study of the exploration and settlement of the North American continent. Topics include Indian relations, utilization of land and resources in the fur trade, mining, and cattle ranching, and the establishment of law and order on the frontier.

HIST 324 Everyday Life in America
3 hrs.
Introduction to the study of artifacts and the built environment in understanding everyday life in America. Artifacts as social and cultural documents in the American experience and sources for examining culture.

HIST 326 American Indian Cultural History
3 hrs.
Survey of history and culture of American Indians from earliest times to the present; emphasis on cultural achievements and diversity, myths and prejudices of non-Indian Americans, and Indian-government interaction.

HIST 328 African-American Cultural History
3 hrs.
Survey of history and culture of African-Americans from colonial times to the present; emphasis on cultural achievements and diversity, myths and prejudices of non-African-Americans, struggle for civil and human rights, and the dilemmas of integration versus separate identity. Brief survey of United States in a pan-Diaspora context.

HIST 330 History of Canada
3 hrs.
A survey of Canada from the sixteenth century to the present. Special attention to the sources of Anglo-French discord and Canada's changing relationship with the United States.

HIST 332 Global History 1885–1945
3 hrs.
Themes in global history and global interdependence from the late nineteenth century to the cataclysm of World War II. Topics include globalization of technology, commerce, communication and human expectations; economic integration and international cooperation; the dichotomy of nationalism and ethnicities; and the emergence of a world culture; the world at war.

HIST 333 The World since 1945
3 hrs.
Examination of the major developments of the second half of the twentieth century and the dichotomies of continuity and revolutionary change they present.

HIST 336 Women in European History
3 hrs.
Examination of the condition of women in various periods of European history, with particular attention to women's changing status and experiences in the family and workplace. Study of various institutions, associations, and activities in which women expressed themselves becomes the basis for conclusions about women's contributions to European history and culture.

HIST 349 Ancient Near East
3 hrs.
Ancient history of Near Eastern lands which also figure prominently in biblical accounts. Archaeology, prehistory, and the cradles of civilization in Mesopotamia and the Nile Valley. Survey of ancient Sumerian, Babylonian, Egyptian, Hittite, Phoenician, and Hebrew cultures, as well as the emergence of the Assyrian, Neo-Babylonian, and Persian empires.

HIST 350 Ancient Greece and the Hellenistic World
3 hrs.
Origins of the ancient Greeks and their role in the Aegean civilizations of Crete, Troy, and Mycena; the Homeric age, and development of the polis. Examination of the contrasting city-states of Athens and Sparta, as well as the unique cultural achievements and legacy of Hellenism; Alexander the Great and the Hellenistic world.

HIST 351 Ancient Rome
3 hrs.
Roman history from earliest beginnings to the decline and fall of the Roman empire. The early Italic, Etruscan, and Greek cultures of ancient Italy prior to the emergence of Rome; rise of the Roman republic and conquest of the Mediterranean; civil wars, development of the empire and its ultimate collapse; cultural achievements of the age.

HIST 360 The Medieval World: Society and Culture
3 hrs.
Society and culture of medieval Europe with emphasis on everyday life, material culture, and ways of knowing. Impact of medieval Europe on the formation of modern European states and systems; brief survey of comparative medieval conditions in other regions, and the impact of “medievalism” on popular culture.

HIST 362 History of England
3 hrs.
Development of national culture in England and the British Isles to approximately the end of the eighteenth century; evolution of constitutional and legal structure; emergence of England as a competitor for European and world hegemony.

HIST 363 Britain and the British Empire
3 hrs.
Britain in the nineteenth and twentieth centuries: development and subsequent loss of economic hegemony and consequences for British society; elaboration of parliamentary government; the British Empire from the loss of North America to the conquest of India and establishment of naval dominance; the British search for new roles in the twentieth century.

HIST 364 Modern Europe: Culture and Society
3 hrs.
Social and cultural history of Europe in the late nineteenth and twentieth centuries with emphasis on the post-World War II period: reconstruction; era of the Cold War; the dilemma of economic integration and cultural fragmentation; Europe in the wider world; modern European culture.

HIST 366 Russia Yesterday and Tomorrow
3 hrs.
Historical survey of Russia and the regions included in the former Soviet Union. Emphasis on the Russian cultural core and its potential for the reformulation of the Russian republic. Consideration of the ideals and realities of the Soviet Union, and the triumph of culture over ideology in its collapse.

HIST 368 History of European Nations
3 hrs.
Surveys of selected European national histories. Emphasis on the growth of national consciousness and national cultures as both positive and destructive forces. Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 370 History of Latin America
3 hrs.
Surveys of the traditions of Latin American societies and national cultures, and the response of Latin America to the challenges of the twentieth century.

HIST 376 Modern East Asia
3 hrs.
The recent history of China, Japan, and Korea: tradition, reform, and revolutionary movements; ideologies and techniques of modernization; nationalism and international relations.

HIST 384 Modern Islam
3 hrs.
Survey of the Islamic world from the late nineteenth century to the present, with emphasis on development of Islamic alternatives to social, economic and political modernization. Consideration of a world culture; the world at war.

HIST 385 Modern Middle East
3 hrs.
The Middle East since the collapse of the Ottoman Empire at the close of World War I. Emphasis is upon the history of the Arab-Israeli conflict, which may be seen as thematic of the clash of the major forces shaping the modern Middle East, including Arab nationalism, Zionism, and colonialism.

HIST 388 Introduction to African Civilization
3 hrs.
Overview of major aspects of African history and civilization from earliest times to the present. Emphasis upon elements which contribute to the uniqueness of the African experience.
HIST 390 Introduction to the Study of History 3 hrs.
Major themes and developments in historiography and historical thought. Ideas and interpretations of history from different periods are studied in their historical context. Prerequisite: HIST 190.

HIST 396 Teaching Methods for Secondary Schools 3 hrs.
Theories and techniques for the effective teaching of history at the secondary level. Evaluation and selection of reading assignments and instructional materials; methods of measuring cognition of historical concepts; course organization and learning activities for students of varying backgrounds and abilities; use of interactive media, the role of history in social science and humanities education, and of historians as curriculum leaders. Prerequisite: In addition to 6 hours of U.S. History, students must also have taken ED 302 or take it concurrently.

HIST 400 Topics in History 1–3 hrs.
Selected topics in historical studies. Topics announced in Schedule of Classes. May be repeated under different topics.

HIST 404 Introduction to Public History 3 hrs.
Origins and objectives of public history as a philosophy of history and as a discrete field of study and research. Examination of social, economic, political and cultural changes pertinent to the field. Characteristics and interrelationships of the major components of public history including historic preservation, museology, education, environmental concerns, public policies and information sciences.

HIST 406 Archives Administration 3 hrs.
Theory, techniques, and practice in the development and administration of archives and archival materials.

HIST 408 Museum Studies 3 hrs.
History, philosophy, organization and administration of general history, science, technology and art museums. Discussion of collecting theory, conservation and security, display and interpretation, and the role of museums in culture and education.

HIST 410 Historic Preservation 3 hrs.
Development, conservation, and interpretation of historic sites and districts: documenting historic sites; registration procedures; preservation law; funding sources; history of the preservation movement; social and political issues in urban rehabilitation.

HIST 412 Local History Techniques 1–3 hrs.
Sources and techniques of local historians and their application to research. Emphasis on various primary sources such as manuscript collections, oral history, genealogy, archaeological and ethnographic data. Topics may be listed in Schedule of Classes. May be repeated under different topics.

HIST 414 Topics in Military History 1–3 hrs.
Topics in military history from ancient times to the present. Topics announced in Schedule of Classes. May be repeated under different topics.

HIST 416 Topics in Michigan History 1–3 hrs.
Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 420 Colonial America 3 hrs.
The American colonies as part of the British empire, their founding, and their political, social, and economic development to the eve of the American Revolution.

HIST 421 The New Nation: American Revolution and Independence 3 hrs.
Causes and consequences of the American Revolution, early experiments at national integration, social and cultural developments from approximately 1770 to 1820.

HIST 422 Antebellum America 3 hrs.
Society and culture of the United States in the 19th century before the Civil War.

HIST 424 The Civil War and Reconstruction 3 hrs.
Examines the origins of the Civil War, the reasons for Northern victory and Southern defeat, and the conflicts over Reconstruction policy and the status of Black Americans.

HIST 425 United States, 1877–1919 3 hrs.
Causes and consequences of industrialization and urbanization in the period, and concurrent revolutions in agriculture, transportation and communications; the Progressive movement; ideas, arts, and culture of the era.

HIST 426 United States 1920–1940 3 hrs.
Social, economic, and political characteristics of the 1920s; economic collapse and onset of the Great Depression; the Roosevelt New Deal; arts and culture of the era.

HIST 427 United States 1940–1960 3 hrs.
The United States in World War II and the 1950s; major social, cultural, and economic aspects of the era; emergence of the United States as a superpower.

HIST 428 United States since 1960 3 hrs.
Major domestic developments and international challenges since the Kennedy presidency.

HIST 432 Women in America to 1870 3 hrs.
Women’s historical experiences from the early 16th century to 1870; focus on women’s relationship to the economy, family, politics, changing concepts of gender and ideals of womanhood; variations in experience by class.

HIST 433 Women in America Since 1870 3 hrs.
Continuation of HIST 432.

HIST 434 American Indians to 1887 3 hrs.
Historical survey of the native peoples of North America from origins to the late 18th century. Emphasis on federal-Indian relations, settlement, contact, Indian removal, military confrontations and treaties, and major aspects of culture.

HIST 435 American Indians Since 1887 3 hrs.
American Indian history since the Dawes Land Allotment Act of 1887. Emphasis on Indian rights, education, health, stereotypes and self-concepts, communal relations, reservation and urban life, leadership, and evolution of federal policy.

HIST 436 Topics in African-American History 3 hrs.
Major themes and topics in African-American history in North America and the Caribbean. Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 439 Topics in United States History 1–3 hrs.
Examination of major social, economic, intellectual and cultural themes and issues in United States history. Topics announced in Schedule of Classes. May be repeated under different topics.

HIST 440 Imperial Rome 3 hrs.
Rome from the close of the republic to the zenith of the imperial age, with emphasis on the first century of the empire.

HIST 441 Early Christianity 3 hrs.
History of the Christian church and community from its inception to its triumph in the Western and Eastern Roman empires; emphasis on the relationships between church and state.

HIST 442 Byzantine Civilization 3 hrs.
The fusion of Western Roman, Hellenistic, Christian, and diverse cultural traditions into a unique Byzantine phenomenon. Coverage from Constantine the Great to the capture of Constantinople by the Ottoman Turks in 1453.

HIST 444 Early Medieval History 3 hrs.
Evolution of medieval institutions and culture from the collapse of Rome to approximately the twelfth century.

HIST 445 Later Medieval History 3 hrs.
The maturation and flourishing of medieval civilization from approximately the twelfth century to the disintegration of medieval unity in the Renaissance. Emphasis on social and political institutions and intellectual developments.

HIST 446 Renaissance Europe 3 hrs.
Political, intellectual, and artistic developments in Renaissance Europe, and the process of dissolution of the medieval world-view in the fourteenth and fifteenth centuries.

HIST 447 The Reformation 3 hrs.
The collapse of European religious unity in the sixteenth century; religious wars, the appearance of regional churches, and Roman Catholic renewal; early traces of scientific and intellectual revolutions; arts and culture of the era.

HIST 450 Europe in the Seventeenth and Eighteenth Centuries 3 hrs.
Major social, political, intellectual and cultural developments from the Thirty Years War through the Enlightenment.

HIST 452 French Revolution and Napoleon 3 hrs.
Background, major events and phases of the French Revolution, Napoleon and the French empire; impact of the revolution on Europe and the rest of the world.

HIST 456 Europe 1815–1871 3 hrs.
Europe from the Congress of Vienna to the Franco-Prussian War. Emphasis on the struggle between conservative and liberal forces and the growth of modern nationalism and national unity; economic and social impact of industrialization; arts and culture of the era.

HIST 457 Europe 1871–1919 3 hrs.
Continued growth of nationalism and national rivalries; the golden age of European imperialism; Evolution of alliance patterns; background and major military and political events of World War I; economic and social impact of the second industrial revolution, arts and culture of the era.
HIST 458 Europe 1919–1945
3 hrs.  
Aftermath and political settlement of World War I; Europe of the 1920s; the rise of Fascism and economic collapse; the assault on ethnic and religious minorities and on democratic government; background and major events of World War II; arts and culture of the era.

HIST 460 Europe since 1945
3 hrs.  
Recovery and reconstruction following World War II; the East-West conflict; roles and objectives of major European states and blocs in international affairs; the movement toward European unity.

HIST 462 Great Ages in English History
3 hrs.  
Period studies in the history of England: Anglo-Saxon, medieval, Tudor-Stuart, Victorian and twentieth century. Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 465 Russia to 1855
3 hrs.  
History of Russia from medieval times to the beginning of the reign of Tsar Alexander II and the close of the Crimean War.

HIST 466 Russia since 1855
3 hrs.  
History of Russia since the mid-nineteenth century. Political, social, economic and cultural developments presaging the revolutions of 1905 and 1917; evolution of the Soviet state.

HIST 468 Topics in European History
1–3 hrs.  
Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 471 History of Latin American Nations
3 hrs.  
History of various Latin American nations and regions, such as Mexico and the Caribbean, Brazil, Argentina, and the Andean states. Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 476 Traditional China
3 hrs.  
History of China from the earliest beginnings of Chinese civilization to the collapse of the Ming Dynasty in the seventeenth century.

HIST 477 Modern China
3 hrs.  
History of the great traditional Chinese dynasties and its response to the challenge of outside forces and ideas; early industrialization and sociopolitical change in the nineteenth century; the revolution of 1912 and the struggle for dominance ending in Communist victory in 1949. China’s struggle to modernize and define its place in the twentieth century.

HIST 479 Modern Japan
3 hrs.  
Survey of Japanese history and traditional society; the Japanese response to outside forces in the nineteenth century; development of the Japanese empire and its destruction in World War II; emergence of Japan as an economic world power.

HIST 485 Early Islam
3 hrs.  
The rise of Islam and the Arab conquests; the fusion of Muslim, Hellenistic, and Indo-Persian cultural influences in classical Islamic civilization; political, social, religious, and intellectual history from the seventh century to the Mongol conquests in the thirteenth century.

HIST 488 History of West Africa
3 hrs.  
Major themes of West African history from medieval times to the present, including development of states and empires: regional, Saharan and trans-Atlantic trade; economic transformations; the influence of Islam and other religious institutions; and the dynamics of traditional West African civilization.

HIST 489 Topics in Asian and African History
1–3 hrs.  
Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 495 Internship
3–9 hrs.  
Professional internship experience in museums, historical administration, historic preservation, education, applied research, etc. Registration requires approval of supervisor and Department Chair. Grading format is credit/no credit. Prerequisite: appropriate course work in public history.

HIST 496 Senior Seminar
3 hrs.  
Interpretive and theoretical issues. Preparation of a major paper. Topics listed in Schedule of Classes. Prerequisite: 24 hours of course work in history.

HIST 498 Directed Research
3 hrs.  
Individualized research and production of a written project supervised by a faculty member. Registration requires a research proposal approved by a faculty member and the Department Chair. Prerequisite: 18 hours of history at the 300-level and above.

HIST 499 Senior Thesis
3–6 hrs.  
Research, preparation and defense of a supervised research project. Registration requires approval by two faculty supervising members and the Department Chair. Prerequisite: 16 hours of history at the 300-level and above.

HIST 500 Studies in History
1–3 hrs.  
Topics announced in Schedule of Classes. May be repeated under different topics.

HIST 510 Colloquium
1 hr.  
Research presentations by department faculty, advanced graduate students and invited scholars. Specific topics may be listed in Schedule of Classes. May be repeated to a maximum of 3 hours. Graded on a credit/no credit basis.

HIST 515 Topics in Public History
1–3 hrs.  
Selected topics in aspects of public history including museology, historic preservation and cultural resource management, historical administration, information science, and applied research. Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 517 Topics in Economic and Social History
1–3 hrs.  
Selected topics in the history of economic and social conditions and change such as the development of world trade and world economy, development and modernization, urbanization, social and political movements, demography and migration, family structure, etc. Topics announced in Schedule of Classes. May be repeated under different topics.

HIST 519 Topics in Intellectual and Cultural History
1–3 hrs.  
Selected topics in the history of ideas, literary and artistic expression, intellectual and cultural character of various periods and civilizations, examination of historical conditions through philosophy and the arts, etc. Topics announced in Schedule of Classes. May be repeated under different topics.

HIST 530 Studies in Early American History
3 hrs.  
Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 535 Studies in Recent American History
3 hrs.  
Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 550 Studies in Medieval History
3 hrs.  
May be crosslisted with MDVL 500. Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 565 Studies in Modern European History
3 hrs.  
Selected approaches to European history since the Renaissance. Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 585 Studies in Asian and African History
3 hrs.  
Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 590 Proseminar
3 hrs.  
Research and writing on selected themes. Topics may be listed in Schedule of Classes. May be repeated under different topics.

HIST 591 Topics in Theory and Practice
1–3 hrs.  
Selected theoretical, technical, and interpretive issues in the field of history: interaction with methodologies of other social science and humanities disciplines, innovative forms and techniques of documentation and data collection; major historical interpretations currently before the academic world and the public. Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 592 Computers in Historical Research
1–3 hrs.  
Computer applications to historical and related research projects including manuscript analysis techniques, text/related databases, museum and historical agency database and registration systems, simulations, etc. Survey of applications in closely related disciplines. Course may be repeated under different topics which will be listed in the Schedule of Classes. Prerequisite: CS 105 or equivalent.

HIST 595 History Writing Workshop
1–3 hrs.  
Practicum in the writing of history: editing and publishing, preparation of written materials for lay readers and audiences outside the discipline. May be repeated to a maximum of six semester hours.

HIST 596 Local History Workshop
1–3 hrs.  
Practicum in research techniques for problems in local and small community history, including oral tradition, genealogy, and interdisciplinary method. May be repeated to a maximum of six semester hours.
INTERNATIONAL AND AREA STUDIES PROGRAMS

See "Interdisciplinary Programs" in the College of Arts and Sciences.

JAPANESE

See "Asian and Middle Eastern Languages" in the College of Arts and Sciences.

JOURNALISM

See "English" in the College of Arts and Sciences.

LATIN

See "Foreign Languages and Literatures" in the College of Arts and Sciences.

LATVIAN

See "Foreign Languages and Literatures" in the College of Arts and Sciences.

MATHEMATICS AND STATISTICS

John W. Petro, Chair
Christine Browning
Joseph T. Buckley
Dwayne Channell
Gary Chartrand
Clifton Ealy
Paul Eriegenburg
Theresa Grant
Christian Hirsch
Philip Hsieh
Robert Laing
Nilofer Mackey
John Martino
Joseph McKean
Ruth Ann Meyer
Daniel Mihalko
Joshua Naranjo
Dennis Pence
Srdjan Petrovic
Thomas Richardson
Michael Raines
James Riley
Allen Schwenk
Gerald Sievers
Michael Slack
Michael Stoline
Jay Treiman
Laura VanZoest
Jung Chao Wang
Arthur White
Kung-Wei Yang
Ping Zhang
Qiji Zhu

The Mathematics and Statistics Department offers a wide variety of courses and programs in both theoretical and applied areas. There are four majors available: Applied, General, Secondary Teaching, and Statistics. Minors available include the General Minor, Applied Statistics Minor, Statistics, Secondary Teaching of Mathematics, and the Science and Mathematics Teaching Minor. These major and minor programs incorporate emphasis on computer methods, mathematical modeling, and problem solving.

The various mathematics and statistics majors all require two semesters of calculus as well as introductory computer science courses. Students may begin coursework in these areas while deciding on a branch of mathematics in which to specialize.

During the first year interested students should contact Barbara McKinney, student advisor/assistant to the chair, through the Mathematics and Statistics Department. Phone (616) 387-4510 or write: Mathematics and Statistics Department, Western Michigan University, Kalamazoo, MI 49008. All majors must contact a faculty advisor in mathematics and statistics during their second year of study. All minors, except General Math minors, must contact an advisor.

At most, one course with a grade below "C" can be applied toward a major or minor in Mathematics or Statistics.

Mathematics Major Options

Applied Mathematics Option

There is a growing need for people who combine knowledge of mathematics and science to formulate and solve practical problems. The intent of the Applied Mathematics Option is to provide a broad range of computational and analytical skills, practice in mathematical modeling and some fundamental knowledge of a scientific discipline. Computational and applied mathematicians are employed in a variety of positions in industry, business, and government. Students must complete a minor in one of Biomedical Sciences, Chemistry, Computer Science, Physics, or Statistics. Students should select their minor in the area in which they intend to apply their mathematical talents, and then they should select electives that are particularly suited to the problems in that area.

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MATH 122</td>
<td>Calculus I</td>
<td>4</td>
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<tr>
<td>MATH 123</td>
<td>Calculus II</td>
<td>4</td>
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<tr>
<td>MATH 145</td>
<td>Discrete Mathematical Structures OR</td>
<td></td>
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<tr>
<td>MATH 314</td>
<td>Mathematical Proofs</td>
<td>3</td>
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<tr>
<td>MATH 230</td>
<td>Elementary Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 272</td>
<td>Vector and Multivariable Calculus</td>
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<tr>
<td>MATH 274</td>
<td>Introduction to Differential Equations</td>
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<tr>
<td>MATH 364</td>
<td>Statistical Methods</td>
<td>4</td>
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<tr>
<td>MATH 402</td>
<td>Mathematical Modeling</td>
<td>3</td>
</tr>
<tr>
<td>Three of: MATH 330, 362, 408, 440, 445, 490, 527, (510 or 530), 567, 568, 570, 572, 574</td>
<td>9-12</td>
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COGNATE SCIENCE REQUIREMENTS:

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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CS 111</td>
<td>Computer Science I</td>
<td>4</td>
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<tr>
<td>CS 201</td>
<td>Programming in FORTRAN</td>
<td>2</td>
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<tr>
<td>MATH 507</td>
<td>Numerical Analysis I</td>
<td>3</td>
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<tr>
<td>PHYS 205</td>
<td>Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 206</td>
<td>Mechanics and Heat Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 207</td>
<td>Electricity and Light</td>
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<tr>
<td>PHYS 208</td>
<td>Electricity and Light Laboratory</td>
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<tr>
<td>CHEM 101</td>
<td>or 102 General Chemistry</td>
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Students must complete a minor in one of the following areas: Biomedical Sciences, Chemistry, Computer Science, Physics, or Statistics. The courses listed above under "Cognate Science Requirements" may also be used to fulfill requirements for the minor where applicable.

It is strongly suggested that Biomedical Sciences minors elect MATH 362 and MATH 567 and CHEM 101 or CHEM 102. Computer Science minors should select MATH 145 and either MATH 440 or MATH 445. Physics minors should select MATH 314 and MATH 570. Students in the Applied Mathematics Option who elect the Statistics minor should take the CS 201 course in the cognate science requirements and would be exempt from CS 306 in the Statistics minor.

NOTE: Graduate study in mathematics typically requires MATH 314, MATH 330, and MATH 570.

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Applied Mathematics option will satisfy the Baccalaureate Writing Requirement by successfully completing MATH 402 Mathematical Modeling.

General Mathematics Option

The General Mathematics Option is a flexible program that may be combined with minors in diverse areas such as physics in the natural sciences, economics in the social sciences, or even be used as a base for law school. This option also serves as excellent preparation for graduate study in mathematics. A student in this program should develop, in addition to a broad background in mathematics, an ability for communicating mathematics and for rigorous logical thinking.
The Secondary Teaching Option, which satisfies the requirements of this program.

Students who have chosen the General Mathematics option will satisfy the Baccalaureate Writing Requirement by successfully completing MATH 314 Mathematical Proofs.

Statistics Major

The field of statistics is concerned with collection of numerical data, with various descriptive and inferential methods of analyzing data and with proper interpretation of the results. Statisticians frequently work in government and industry as part of a team of specialists, in areas such as business, biology, pharmacetics, demography, economics, and the health sciences. Shortages of qualified statisticians are anticipated through the next decade.

MATH 122 Calculus I
MATH 123 Calculus II
MATH 330 Modern Algebra I
MATH 440 Graphs and Mathematical Models
OR
MATH 445 Algorithmic and Applied Combinatorics
MATH 570 Advanced Calculus

ELECTIVES (select three)*

MATH 274 Introduction to Differential Equations
MATH 340 Fundamental Concepts of Geometry
MATH 362 Probability
MATH 366 Statistical Methods
MATH 402 Mathematical Modeling
MATH 408 Linear Programming
MATH 430 Modern Algebra II
MATH 490 Topics in Mathematics
MATH 507 Numerical Analysis I
MATH 510 Applied Matrix Algebra
MATH 522 Introduction to Topology
MATH 527 Differential Geometry of Curves and Surfaces
MATH 530 Linear Algebra
MATH 571 Real Analysis
MATH 572 Vector Calculus and Complex Variables
MATH 574 Advanced Differential Equations
MATH 580 Number Theory
(at least one of which will be chosen from MATH 430, MATH 522, MATH 571)

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the General Mathematics option will satisfy the Baccalaureate Writing Requirement by successfully completing MATH 314 Mathematical Proofs.

Mathematics Minor Options

General Mathematics Minor Option

Students interested in the General Mathematics Minor Option may plan their program using the information below. An advisor's approval is not necessary unless a change in the requirements is requested.

MATH 122 Calculus I
MATH 123 Calculus II
MATH 230 Elementary Linear Algebra
MATH 330 Modern Algebra I
MATH 340 Graphs and Mathematical Models
MATH 450 Teaching of Secondary School Mathematics

Two of MATH 264, 362, 364, 366 (5-8 hrs.)

Approved electives (MATH 330 or 340) 3-4

Statistics Minor Option

MATH 260 Elementary Statistics
OR
MATH 364 Statistical Methods
OR
MATH 366 Introduction to Statistics
MATH 362 Probability
MATH 567 Statistical Design and Analysis of Experiments

MATH 569 Regression Analysis
MATH 464 Introduction to Statistical Computing

Approved Electives 3-4

The elective would normally be selected from the following list of courses: MATH 561, MATH 563, MATH 565, 566. An approved introductory course in statistics may be substituted for either 260, 364 or 366.

Applied Statistics Minor Option

MATH 464
MATH 366 or equivalent
MATH 567
Two of MATH 561, 563, 565, 566, 568

Elementary and Middle School Teaching Minor Option

Students in an Elementary School and Middle School curriculum must contact a mathematics advisor for information on available mathematics programs.

MATH 150 Number Concepts for Elementary/Middle School Teachers
MATH 151 Geometry for Elementary/Middle School Teachers
MATH 265 Probability and Statistics for Elementary/Middle School Teachers
MATH 352 Teaching of Elementary School Mathematics
MATH 554 Algebra in the Elementary/Middle School Curriculum
MATH 555 Mathematical Problem Solving in the Elementary/Middle School Curriculum

Science and Mathematics Teaching Minor

The Department of Mathematics and Statistics participates in the Science and Mathematics Teaching Minor for students in the elementary curriculum. For a full description of the program, consult its listing under the "Interdisciplinary Programs" section in the College of Arts and Sciences.
Honors in Mathematics
Note: The following are the requirements for graduation with Honors in Mathematics.
Qualified students may plan a program to graduate with honors in mathematics or statistics.
1. Grade point average of at least 3.7 in mathematics and statistics courses
2. Overall grade point average of at least 3.25
3. Completion of two of the following:
   — an honors seminar (can be the Putnam Seminar)
   — an upper-level theoretical course
   — an approved independent study project leading to a paper or presentation
Interested students should see the associate chair in their junior year or early in their senior year to plan an ‘honors program’.

Putnam Seminar
The Putnam Seminar is a problem solving seminar offered under the course number MATH 390. Under the direction of a faculty member students practice techniques for solving very challenging problems. Students in the seminar may participate in the William Lowell Putnam national intercollegiate mathematics competition.

Mathematics and Statistics Courses (MATH)
Students who fail to earn a "C" or better grade in a prerequisite course will not be permitted to enroll in the next course.
A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.
MATH 109 Computational Skills
2 hrs.
A mastery-based remedial course designed to sharpen computational skills involving whole numbers, fractions, decimals, percents, signed numbers and simple geometric figures. These skills are used in solving word problems. All entering students must take an exam on this material unless exempted on the basis of ACT Mathematics score. Students who do not pass the exam are required to take this course and enrollment in this course is restricted to these students. Credit for the course will not apply to the number of credits needed for graduation.
MATH 110 Algebra I
3 hrs.
A course in algebra at the level usually covered in high school. Review and practice with basic algebraic skills. Topics include arithmetic foundations of algebra, properties of real numbers, linear equations and inequalities, and systems of linear equations. This is a continuous progress, mastery-based course. Credit for MATH 110 will not be granted to anyone having already received credit with grade of "C" or better in any of MATH 111, 116, 118, 122, or 200 or equivalent transferable courses. Prerequisite: MATH 109 or satisfactory score on placement test.
MATH 111 Algebra II
3 hrs.
A continuation of MATH 110. Topics include polynomials, fractional and radical equations, logarithmic and exponential functions, complex numbers, quadratic equations, and systems of quadratic equations. Credit for MATH 111 will not be granted to anyone having already received credit with a grade of "C" or better in any of MATH 118, 122, 200 or equivalent transferable courses. Prerequisite: MATH 110, or one year of high school algebra and satisfactory score on placement test.
MATH 114 Excursions in Mathematics
3 hrs.
This course satisfies the general education requirement of a college level mathematics course. It is the relief for students whose programs of study have no further mathematics requirements. Its purpose is to develop an awareness of the use of mathematics in the world around us. Areas of application may include: compound interest and monetary growth, planning and scheduling, collecting and interpreting data, games and decision making, measurement and geometry, patterns and art. Prerequisite: MATH 110 or satisfactory score on Mathematics and Statistics Department Placement Examination.
MATH 116 Finite Mathematics with Applications
3 hrs.
This course is designed to give the student a background in the elements of finite mathematics. It includes a discussion of sets, relations and functions; systems of linear equations and inequalities; vectors and matrices; concepts of probability, random variables and distribution functions; applications of linear algebra and probability. Prerequisite: MATH 110, or 2 years of college preparatory mathematics and satisfactory score on placement test.
MATH 118 Precalculus Mathematics
4 hrs.
This course is designed to provide the student with basic algebraic and trigonometric concepts necessary for calculus. Topics include: real numbers, inequalities, coordinate systems, functions, polynomials, solutions of polynomial equations, exponential and logarithmic functions, trigonometry and trigonometric functions. Prerequisite: MATH 111, or at least 3 years of college preparatory mathematics and satisfactory score on placement test.
MATH 122 Calculus I
4 hrs.
The first of a two-semester sequence in differential and integral calculus. Functions, limits, continuity, techniques and applications of differentiation, integration, trigonometric, logarithmic and exponential functions. Prerequisite: MATH 118, or at least 3½ years of college preparatory mathematics including trigonometry and satisfactory score on placement test. Students cannot receive full credit for MATH 122 and 200.
MATH 123 Calculus II
4 hrs.
A continuation of Calculus I. Techniques and applications of integration, trigonometric functions, sequences and series, indefinite forms, improper integrals, applications to elementary differential equations. Prerequisite: MATH 122, (CS 105 or 106 recommended). Students will not receive full credit for MATH 123 and 200.
MATH 145 Discrete Mathematical Structures
3 hrs.
Sets, functions, relations, graphs, digraphs, trees, recursion, mathematical induction and other proof techniques, counting techniques, Boolean Algebras and asymptotic analysis of algorithms. Lower division computer science will be emphasized. Prerequisite: MATH 122, and an introductory programming course.
MATH 150 Number Concepts for Elementary/Middle School Teachers
4 hrs.
This course provides a foundation in number concepts appropriate for elementary and middle school teachers. Topics include numeration systems, number theory, rational numbers, and integers. Emphasis is placed on conceptual understanding, problem solving, mental arithmetic, computational estimation and calculator use. This course may only be applied toward the requirements of a program leading to elementary teacher certification or the Elementary/Middle School Mathematics Teacher Minor. Prerequisite: MATH 110 with a grade of "C" or better or a satisfactory score on placement test.
MATH 151 Geometry for Elementary/Middle School Teachers
3 hrs.
This course explores the fundamental ideas of planar and spatial geometry. Content includes the analysis and classification of geometric figures; the study of geometric transformations; the concepts of tesselation, symmetry, consequence, and similarity; and an overview of measurement. The course also includes an introduction to the use of computers in the teaching and learning of informal geometry. Prerequisite: MATH 150 with a grade of "C" or better.
MATH 160 Statistics and Data Analysis
3 hrs.
A general introduction to statistics with an emphasis on data analysis and graphical presentation. Extensive use will be made of the computer to prepare results. Topics may include: data collection, sampling and experimentation, measurement issues, descriptive statistics, statistical graphics, normal distribution, cross-classified data, correlation and association, formal statistical inferences, and resampling methods. Prerequisite: MATH 110 or satisfactory score on Mathematics and Statistics Department Placement Examination.
MATH 190 Survey of Mathematical Ideas
4 hrs.
A survey of significant, active areas of mathematics with the emphasis on concepts rather than calculations. The historical origin and development of certain mathematical ideas will be included. The areas of mathematics investigated will include topics from set theory, probability theory, number theory, computer mathematics, and graph theory. This course will not satisfy any program requirements in mathematics. Prerequisite: MATH 110 or satisfactory score on Mathematics and Statistics Department Placement Examination.
MATH 200 Calculus With Applications
4 hrs.
A terminal one semester course in calculus with emphasis on techniques and applications. Topics include functions, limits, differentiation, integration and applications. This course should not be elected by those students taking courses in the MATH 122-123 sequence. Prerequisite: MATH 111, or 1-½ years high school algebra and 1 year high school geometry and satisfactory score on placement test. Students will not receive full credit for MATH 200 and 122 or 123.
MATH 216 Business Statistics
3 hrs.
An applications-oriented study of statistical concepts and techniques. The course focuses on the student as a user of statistics who needs a minimal understanding of mathematical theory and formula derivation. Major topics of study are statistical description, central tendency, dispersion, distributional shapes, sampling, confidence levels, probability, comparison tests, association tests, regression and time series. The objectives of the course are to develop the skill to apply these concepts in conjunction with computer usage and make appropriate decisions regarding actual business...
The purpose of this course is to introduce students to the rudiments of statistics. Basic concepts, rather than detailed derivation, are stressed. Topics include: probability; discrete random variables; means and variances; binomial, hypergeometric, normal, chi-square, F distributions; interval estimates; tests of hypotheses. Students can receive credit for only one of MATH 216, 260, 364, or 366. Prerequisite: MATH 116, and BIS 102.

MATH 230 Elementary Linear Algebra 4 hrs.

Vectors and geometry in two and three dimensions, systems of linear equations, matrix algebra, linear transformations in $\mathbb{R}^2$ and $\mathbb{R}^3$, generalizations to the vector spaces $\mathbb{R}^n$, inner products, determinants. Some emphasis on proofs. Prerequisite: MATH 122 (MATH 123 recommended).

MATH 260 Elementary Statistics 4 hrs.

The purpose of this course is to introduce students to the rudiments of statistics. Basic concepts, rather than detailed derivation, are stressed. Topics include: probability; discrete random variables; means and variances; binomial, hypergeometric, normal, chi-square, F distributions; interval estimates; tests of hypotheses. Students can receive credit for only one of MATH 216, 260, 364, or 366. Prerequisite: MATH 116, and BIS 102.

MATH 261 Engineering Statistics 3 hrs.

Introduction to statistical methodology, emphasizing applications in engineering. Topics include descriptive and inferential statistics, least squares curve fitting, correlation, and analysis of variance. Prerequisite: MATH 123 and a course in the use of computers. Cross listed with IE 261.

MATH 262 Probability for Engineers 3 hrs.


MATH 265 Probability and Statistics for Elementary/Middle School Teachers 4 hrs.

This course covers basic concepts of statistics and probability appropriate for elementary and middle school teachers. Topics include statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for organizing, summarizing, presenting, and interpreting statistical techniques for interpreting and representing data. Prerequisite: MATH 123.

MATH 272 Vector and Multivariate Calculus 4 hrs.

Vector calculus, functions of several variables, partial differentiation, multiple integration. Prerequisite: MATH 123.

MATH 274 Introduction to Differential Equations 3 hrs.

Techniques of solving differential equations. Prerequisite: MATH 123.

MATH 314 Mathematical Proofs 3 hrs.

The prime objective of this course is to involve the students in the writing and presenting of mathematical proofs. The topics in this course will include logic, types of proofs, sets, functions, relations, mathematical induction, proofs in an algebraic setting such as divisibility properties of the integers, proofs in an analytic setting such as limits and continuity of functions of one variable. Additional topics may include elementary cardinal number theory, paradoxes and simple geometric axiom systems. Prerequisite: MATH 123, and 230 or 374.

MATH 330 Modern Algebra I 4 hrs.

This course introduces the abstract algebraic concepts of groups, rings, and fields, and shows how its relates to the problem of finding roots of polynomials. Topics include: Properties of the integers, congruences, the Euclidean algorithm, groups, subgroups, cosets, Lagrange's theorem, direct product, isomorphism, symmetric groups, rings, integral domains, polynomial rings, fields, field extensions, quotients of polynomial rings. Prerequisite: MATH 314.

MATH 340 Fundamental Concepts of Geometry 3 hrs.

This course examines the axiomatic structures of Euclidean geometry and elementary non-Euclidean geometries. Transformational approaches to Euclidean geometry are also considered. Prerequisite: MATH 314.

MATH 350 Teaching of Middle School Mathematics 3 hrs.

This course considers curriculum issues and trends in middle school mathematics focusing on methods and materials for teaching mathematics to middle school students. Activity and laboratory approaches for teaching mathematics are emphasized. Prerequisite: MATH 314 or consent of instructor.


This course introduces uses of computing technology to enhance and extend the learning of mathematical topics in grades 7–12. Emphasis is placed on the use of technology in problem solving and concept development. This course is open only to students pursuing a program leading to secondary mathematics teacher certification. Prior programming experience, MATH 350, and acceptance into Professional College of Education.

MATH 362 Probability 4 hrs.

Discrete probability spaces, conditional probability, discrete and continuous random variables, expectations, joint distributions, special distributions. Prerequisite: MATH 123.

MATH 364 Statistical Methods 4 hrs.

This course treats both the theory and applications of statistics. Topics include: empirical distributions, discrete probability, random variables and probability distributions, special distributions, the central limit theorem, sampling distributions, point and interval estimation, hypothesis testing, analysis of variance, correlation and regression, the design of experiments. Students can receive credit for only one of MATH 216, 260, 364, or 366. Prerequisite: MATH 123.

MATH 366 Introduction to Statistics 4 hrs.

An introductory course in statistics for upper level students possessing a limited mathematical background. The emphasis is on the use of statistical tools rather than on their theoretical development. Topics include probability distributions, means and variances, interval estimates, tests of hypotheses, correlation and regression. This course will not count toward a mathematics major. Students can receive credit for only one of MATH 216, 260, 364, or 366.

MATH 374 Introduction to Linear Algebra and Differential Equations 4 hrs.

This course covers elementary linear algebra and differential equations, applying techniques of linear algebra to the solution of differential equations. Topics chosen from: first order equations and applications, matrices, vector spaces, linear transformations, linear differential equations, systems of differential equations, and series solutions. Students may receive credit for no more than two of the following three courses: MATH 230, 274, and 374. Prerequisite: MATH 123.

MATH 390 Undergraduate Seminar 1 hr.

This seminar features student participation covering mathematical topics not normally included in regular major programs. May be repeated for credit. Prerequisite: permission of Department.

MATH 391 Statistical Consulting 1 hr.

An undergraduate course on the practice of statistical consulting in industry. This course will consider both the statistical and the nonstatistical aspects of consulting: statistical modeling, statistical judgement, quality improvement technology, the psychology of consulting, the importance of communication and the entrepreneurial role. Students will work in groups to solve problems arising with real data or with class experiments. Prerequisite: At least one of MATH 553, 556, 567, or 568.

MATH 395 Practicum in Mathematics 1 hr.

Students enrolled in this course will normally work in the modular math program. The course may be repeated. Prerequisite: consent of instructor.

MATH 402 Mathematical Modeling 3 hrs.

An introduction to the methods of mathematical modeling. The major aim of this course is to teach the formulation of mathematical problems from real world practical situations. The representation of a practical or scientific problem in mathematical terms may give a more precise understanding of its significant properties, and may allow prediction of future events. Case studies considered will involve many areas of application and several different mathematical techniques. The computer will be used as a tool in pursuing some of these problems. Prerequisite: MATH 272, 374 or (230 and 274), and a computer programming course.

MATH 408 Linear Programming 3 hrs.

Linear inequalities, convex geometry, optimization in linear systems, zero-sum games. Applications. Prerequisites: MATH 230 or 374.

MATH 430 Modern Algebra II 3 hrs.

This course continues MATH 330 by studying groups, rings, and fields in more generality and detail. Topics are chosen from: Group homomorphism, normal subgroups, quotient groups, the fundamental homomorphism theorem, groups acting on sets, Sylow's theorem, normal subgroups, quotient rings, Euclidean domains, principal ideal domains, unique factorization domains. Prerequisite: MATH 330.

MATH 440 Graphs and Mathematical Models 3 hrs.

Elements of graph theory, including the study of Eulerian graphs, Hamiltonian graphs, planar graphs, trees, digraphs, and the applications of graphs as models. Emphasis will be on...
proofs and proof techniques. Examples of other discrete models may be considered. Prerequisites: MATH 145 or MATH 314 or consent of instructor.

MATH 445 Algorithmic and Applied Combinatorics 3 hrs.
An algorithmic approach to combinatorics including graph theory, enumeration, and algorithms. Prerequisite: MATH 145 or MATH 314 (CS 111 recommended).

MATH 450 Teaching of Secondary School Mathematics 3 hrs.
This course considers curriculum issues and trends in secondary school mathematics focusing on methods and materials for teaching mathematics effectively to secondary school students. Prerequisite: MATH 351 and one of MATH 330 or MATH 340.

MATH 460 Introduction to Mathematical Statistics 3 hrs.
Topics to be included are multivariate probability density functions, sampling distributions, asymptotic theory, theory of estimation, and likelihood ratio tests. Prerequisites: MATH 230, 272, 362, and 364.

MATH 464 Introduction to Statistical Computing 3 hrs.
This course provides an introduction to the use of statistical computer software in the MINITAB, SAS, SPSSX, and BMDP packages with particular emphasis on SAS and MINITAB. The statistical software capabilities of SAGROPH and MINITAB will also be included. The following topics may be emphasized: data entry, editing, production of statistical graphics in the form of tables, graphs, charts, and plots for report writing purposes; data management methods for large survey-type data sets. The latter topic may include: subset analysis, updating, and missing data methods. Attention may also be given to the statistical topics of: correlation and regression analysis; one and two sample problems; and analysis of variance. Prerequisites: Western Michigan University's computer literacy requirement and an introductory statistics course.

MATH 490 Topics in Mathematics 3 hrs.
The content of this course varies with the semester offered and with the instructor. The course is intended to introduce students to significant topics not ordinarily encountered and to present more variety in their undergraduate programs. May be taken more than once with the approval of the student's advisor. Prerequisite: Approval of Department.

Undergraduates with junior status and 12 hours of work in mathematics and statistics may enroll in 400-level courses with prior approval of the department chair.

MATH 507 Numerical Analysis I 3 hrs.
The analysis and use of numerical algorithms for the solution of non-linear equations, systems of linear equations, interpolation, numerical differentiation and integration. Prerequisite: MATH 230, MATH 272 and MATH 274 or MATH 374 and (CS 201 or CS 306).

MATH 510 Applied Matrix Algebra 3 hrs.
An introduction to the study of methods to solve linear systems of equations, least squares approximation problems, and eigenvalue problems. Topics covered include the algebra of real and complex matrices with particular emphasis on LU-decompositions, QR-decompositions, singular value decompositions, generalized inverses, Hermitian symmetric matrices, positive definite matrices and the Spectral Theorem. Applications from multivariate calculus will be discussed. Prerequisites: either MATH 230 and MATH 272, or MATH 374.

MATH 522 Introduction to Topology 3 hrs.
Topics to be chosen from: Topological spaces and continuous functions, metric spaces, compactness, product and quotient spaces, paracompactness, and manifolds. Prerequisite: MATH 330 or MATH 570.

MATH 527 Differential Geometry of Curves and Surfaces 3 hrs.
An introduction to Riemannian Geometry with emphasis on curves and surfaces. Topics may include isometries, orientation, differential forms, curvature, metrics, and geodesics. Prerequisites: MATH 272 and either MATH 230 or MATH 374 (MATH 314 recommended).

MATH 530 Linear Algebra 3 hrs.
Properties of finite dimensional abstract vector spaces, linear transformations, and matrix algebra are studied. Prerequisite: MATH 330.

MATH 552 Teaching of K-8 School Mathematics 3 hrs.
This course covers curriculum issues and trends in K-8 mathematics education. Specifically, it focuses on methods and materials for teaching mathematics effectively to K-8 students. This course is open to undergraduate students who have completed MATH 352 with a "C" or better. Prerequisite: MATH 150 with at least a "C" or better or a course equivalent to MATH 150.

MATH 554 Algebra in the Elementary/Middle School Curriculum 3 hrs.
This course is devoted to the teaching and learning of algebra in elementary and middle grades. Concepts and skills are developed and reinforced using a variety of approaches and materials. Calculators and computers are used throughout to develop concepts, to model numerical methods, and to explore the connections between symbolic and graphic representations of mathematical ideas. Prerequisite: MATH 352 or MATH 552 with grade of "C" or better or consent of instructor.

MATH 555 Mathematical Problem Solving in the Elementary/Middle School Curriculum 3 hrs.
This course provides experiences in mathematical problem solving for elementary/middle school teachers. Content for the problems is selected from number theory, algebra, geometry, probability, and statistics. Emphasis is placed upon teaching problem solving. Computers are used extensively to solve problems. Prerequisite: MATH 352 or MATH 552 with grade of "C" or better or consent of instructor.

MATH 556 Mathematical Problem Solving in the Elementary/Middle School Curriculum 3 hrs.
This course provides experiences in mathematical problem solving for elementary/middle teachers. Content for the problems is selected from number theory, algebra, geometry, probability, and statistics. Emphasis is placed upon teaching problem solving. Computers are used extensively to solve problems. Prerequisite: MATH 352 or MATH 552 with grade of "C" or better or consent of instructor.

MATH 560 Applied Probability 3 hrs.
A first course in probability for upper division and graduate students interested in applications. Topics will include probability spaces, expectation, moment generating functions, central limit theorem, special discrete and continuous distributions. Applications will include reliability, availability, and production problems, and Markov chain methods. Prerequisite: MATH 272.

MATH 561 Applied Multivariate Statistical Methods 3 hrs.
An applied treatment of multivariate procedures is presented. Classical procedures such as Hotelling's $T^2$-quarated methods are discussed for the one and two sample problems and MANOVA for standard designs. Topics that will be accentuated are principal components, discriminant analysis, cluster analysis, and factor analysis. Emphasis will be on graphical methods and applications. Prerequisites: an introductory course in statistics and a course in linear algebra.

MATH 562 Statistical Analysis I 4 hrs.
The first course in the sequence 562, 662 or applied statistics which combines both theory and applications. Topics include: elementary theory of estimation and hypothesis testing; the use of the normal, binomial, chi-squared, $F$-distributions in statistics problems involving means and variances; simple linear regression and correlation; one way analysis of variance; and fixed effects models. Prerequisite: MATH 230, 364, 560 (or 460) or equivalents.

MATH 563 Sample Survey Methods 3 hrs.
This course consists of a broad overview of the techniques of survey data collection and analysis and contains a minimum of theory. Topics may include: simple random, stratified, systematic, single-stage cluster, and two-stage cluster sampling; ratio and regression estimation; subpopulation analyses; problems of nonresponse; surveys of sensitive issues; minimization of survey costs; sample size determination. Real surveys are discussed and actual survey data are analyzed. Prerequisite: An introductory statistics course and consent of instructor.

MATH 565 Design of Experiments of Quality Improvement 3 hrs.
This course covers statistical methods useful for improving the quality of products and systems in an industrial setting. It provides a comprehensive set of tools to use in building better products and in reducing manufacturing and other costs. The focus will be on solving real engineering problems through case studies. Taguchi methods will be discussed along with modifications from standard statistical practice. Topics will include planning and experiment, experimental strategy, analysis of variance, combinatorial designs, orthogonal arrays, loss functions, signal-to-noise ratios, identifying significant factor effects, graphical methods, parameter design and tolerance design. Prerequisite: An introductory course in statistics.

MATH 566 Nonparametric Statistical Methods 3 hrs.
This course presents a broad overview of statistical methods commonly referred to as nonparametric or distribution-free methods. Topics include: inferences for proportions, contingency tables, goodness of fit problems, estimation and hypothesis testing based on ranking methods, measures of rank correlation, efficiency. Emphasis will be on the application of nonparametric statistical methods to data from many different applied fields. Prerequisite: An introductory statistics course.

MATH 567 Statistical Design and Analysis of Experiments 4 hrs.
A course in experimental design and the analysis of variance with particular emphasis on industrial experiments. Topics include: complete randomized, randomized complete block, latin square, and split-plot designs; orthogonal contrasts and polynomials; multiple comparisons; factorial arrangement of treatments; confounding; fractional replication. The course is molded around the complete analysis of good applied problems. Prerequisite: An introductory statistics course.
MATH 568 Regression Analysis
3 hrs.
An applied course in regression analysis; simple and multiple linear regression, resolution of fit of a model, including residual analysis, precision of estimation, and tests of general hypotheses; model building; step-wise regression; use of indicator variables; non-linear regression. Prerequisite: An introductory statistics course.

MATH 569 Quality Improvement Concepts and Methods
4 hrs.
This is a course on quality technology for application in business and industry involving concepts and methods from Statistics, Management and Psychology and how they must blend together to obtain results. Topics may include: quality concepts for products and services; Deming philosophy of quality improvement, leadership and management concepts, analytic vs. enumerative studies, theory of variability, the seven tools, exploratory data analysis, statistical graphics, Shewhart control charts, cusum charts, process capability, principles of experimental design, robust product and process design. Prerequisite: An introductory statistics course such as MATH 260 or MATH 364.

MATH 570 Advanced Calculus I
4 hrs.
Properties of real numbers, Cauchy sequences, series, limits, continuity, differentiation, Riemann integral, sequences and series of functions. Prerequisites: MATH 272 and 314 (330 is recommended).

MATH 571 Advanced Calculus II
3 hrs.
Topology of n-dimensional space, continuity and differentiability of functions of one variable; Riemann-Stieljes integral; convergence of sequences and series of functions; Fourier series, analysis of functions of several variables. Prerequisite: MATH 570 or approval of advisor.

MATH 572 Vector Calculus and Complex Variables
4 hrs.
Functions of several variables, implicit and inverse functions, Jacobians, multiple integrals, Green's Theorem, divergence, curl, the Laplacian, Stokes' Theorem, analytic functions, Laurent expansions, residues, argument principle, and conformal mapping. Prerequisites: MATH (230, 272 and 274) or 374.

MATH 574 Advanced Differential Equations
3 hrs.
Series solutions at ordinary and singular points of linear ordinary equations; Bessel and Legendre functions, self-adjoint boundary value problems, Fourier series, solution of partial differential equations by separation of variables. Prerequisites: (MATH 230, 272, and 274) or (MATH 374).

MATH 580 Number Theory
3 hrs.
Diophantine equations, congruences, quadratic residues, and properties of number-theoretic functions. Prerequisite: MATH 330.

MATH 595 Topics in Elementary/Middle School Mathematics
3 hrs.
This course addresses topics in mathematics content and pedagogy relative to the teaching and learning of elementary/middle school mathematics. Prerequisite: MATH 352 or consent of instructor. Course may be repeated for credit.

MATH 599 Independent Study in Mathematics
1–3 hrs.
Advanced students with good scholastic records may elect to pursue independently the study of some topic having special interest for them. Topics are chosen and arrangements are made to suit the needs of each particular student. Prerequisite: Approval of chairperson of Department.

MEDIEVAL INSTITUTE PROGRAM

See “Interdisciplinary Programs” in the College of Arts and Sciences.

PHILOSOPHY
Kent Baldwin, Chair
Shirley Bach
Sylvia Culp
John Dilworth
Joseph Elin
Arthur Falk
John Hartline, Adjunct
Stephen Jefferson, Adjunct
Timothy McGrew
Janet Pisaneschi
Michael Pritchard
Quentin Smith
Richard Wright

Students majoring in philosophy may go into teaching, law, medicine, journalism, government, computer programming, business or any other number of other careers. Philosophy is attractive to those who are prepared to search for understanding for its own sake, who do not expect ready-made answers or easy solutions, and who are willing to subject their assumptions to critical scrutiny. Prospective philosophy teachers, whether at the university, junior college, or even high school level, should anticipate continuing for an advanced degree.

The Philosophy Department offices are located on the third floor of Moore Hall. Students are invited to visit the department office and the offices of faculty at any time. Office hours are posted beside each instructor’s door.

Before preregistration each term, the faculty prepare brief written descriptions of the courses to be offered. These descriptions are posted on the department bulletin board outside the department office and additional copies may be obtained in the office.

Robert Friedmann
Philosophy Prize

A prize named in honor of Dr. Friedmann, the first person to teach philosophy at Western, is awarded annually to an outstanding senior philosophy student.

Honors Program
Applications to the departmental honors program are invited from qualified students. A student wishing to enter the program must submit a proposal for independent research to a faculty committee. Normally, the honors candidate works in close association with a professor of his/her choice and submits a paper (or other project of philosophic merit) to the department. To achieve honors in philosophy the candidate's academic record must be of high quality and the project must be outstanding.

Interdisciplinary work involving faculty from other departments is encouraged. Normally, but not necessarily, the honors student is a senior major; in exceptional cases non-seniors or non-majors may be considered.

Philosophy Major

A major consists of a minimum of 28 hours in philosophy including PHIL 300 or PHIL 301. PHIL 100 and 200 cannot both be taken towards a major or minor.

Cognates: Appropriate courses in other departments may be used towards a philosophy major (not a minor) up to a maximum of four hours. Consult with the department chairperson.

Clearly, flexibility is built into the philosophy major. Students are encouraged to speak with a faculty advisor about which combination of courses would best suit their individual interests.
Professional and Applied Ethics Concentration

Philosophy majors who have a special interest in the study of ethics may have their major identified as a Professional and Applied Ethics Concentration, provided that the following course requirements are met:

1. A minimum of 30 credit hours in Philosophy
2. One of the following:
   PHIL 200, 220, 300, 301
3. Two of the following:
   PHIL 201, 303, 310, 311, 313, 314, 434, 534
4. PHIL 410 Professional Ethics (4 hrs.)

The remaining credit hour requirements may be satisfied in a variety of ways, subject to the approval of the student's advisor. The student may apply up to four credit hours from an ethics-related course in another department, subject to the approval of the Department of Philosophy.

Baccalaureate Writing Requirement

Students who have chosen the Philosophy major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

PHIL 300 Ancient and Medieval Philosophy
PHIL 301 History of Modern Philosophy
PHIL 310 Moral Philosophy
PHIL 332 Theory of Knowledge
PHIL 333 Metaphysics

Philosophy Minor

A minor consists of at least 16 hours in Philosophy. Minors may choose any courses they find suitable. Minors are strongly urged to consult with advisors (preferably after completing 8 hours), but this is not required. Students must complete a minor slip in the Department Office.

Minor in Professional and Applied Ethics

Minimum of 18 credit hours. Minor slip required. Required Philosophy courses:

1. ONE of the following: PHIL 200, 220, 300, 301
2. TWO of the following: PHIL 201, 303, 310, 311, 313, 314, 434, 534
3. One additional Professional Ethics course

The remaining credit hour requirements may be satisfied in a variety of ways. The student may complete the minor by doing additional course work within the Department of Philosophy. Any courses, including PHIL 498: Independent Study, are applicable. Also, the student may apply up to four credit hours from an ethics-related course in another department, subject to approval of the Department of Philosophy.

Students Not Majoring or Minoring in Philosophy

Students not majoring or minoring in philosophy find that philosophy adds intellectual depth to their major field of study. Philosophy by its nature touches on many areas of life and thought, frequently from a perspective that students find valuable and exciting. Non-majors often consider their philosophy courses an essential element in their general intellectual growth.

In recognition of this, the department offers a wide range of courses for non-major/minors. Students who wish to sharpen their critical thinking skills should consider PHIL 220, PHIL 225, or for more advanced students PHIL 325.

Students interested in a general introduction to philosophy should consider PHIL 200; students interested in a philosophical approach to a more specialized area should consider PHIL 201, 250, or some upper-level cognate. Students interested in a more technical appreciation of the central problems of philosophy should consider such courses as PHIL 332 (Theories of Knowledge) and PHIL 333 (Metaphysics). Many students will find it advisable to begin with PHIL 200, 201 or 250, and then continue on the upper level.

Repeating Courses for Credit

Since philosophy courses may vary widely in content from year to year, a student may be occasionally justified in repeating a course for credit. Students who wish to do so must obtain permission of the instructor before they register. If the student requests, the department will have the student's record indicate that the course when repeated differed substantially in content from the identically numbered course previously completed.

Philosophy Courses (PHIL)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

INTRODUCTORY COURSES

PHIL 100 Critical Thinking and Writing
4 hrs.
A seminar for students who wish to improve their ability to think analytically, argue logically, and express a train of thought carefully and cogently in writing. There will be frequent writing assignments which will focus on issues raised by readings of broad philosophical interest. Class time will be about equally divided between discussion of the readings and critical analysis of the student's own writings. Fulfills the University Intellectual Skills college-level writing requirement.

PHIL 200 Introduction to Philosophy
4 hrs.
An introduction to the nature of philosophy by a consideration of major types of philosophical questions, such as the principles of rational belief, the existence of God, what is the good life, the nature of knowledge, the problem of truth and verification. Selected texts from representative philosophers are used to define the questions and to present typical answers.

PHIL 201 Introduction to Ethics
4 hrs.
An introduction to the philosophic study of morality. Deals with questions such as: What is the good life? Why should I be moral? What is the meaning of right and wrong?

PHIL 220 Critical Reasoning
3 hrs.
A systematic study of extended arguments aimed at helping students develop the skills necessary for understanding, analyzing, and evaluating arguments and argumentative rhetoric. Topics include argument identification and argument structure, definitions and disputes, deduction and induction, premise verification and informal fallacies.

PHIL 225 Deductive Logic
3 hrs.
A study of the rules and techniques of deductive reasoning. Topics include syllogistic reasoning and the logic of propositions. Applications to everyday reasoning are emphasized.

PHIL 250 Science, Technology, and Values
3 hrs.
A critical examination of the interactions between science, technology and society. The social implications of science and technology will be examined by placing them within the larger context of society, politics, ethics and economics. Issues and problems generally recognized as societal concerns will be emphasized. The detailed analysis of a case study will include teaching of the relevant science and technology.

300-LEVEL COURSES

Each semester detailed course descriptions are posted outside room 320 Moore Hall prior to pre-registration. If you are in doubt about whether you have adequate background for taking a course, talk with the instructor.

PHIL 300 Ancient and Medieval Philosophy
4 hrs.
A study of the history of selected philosophical topics up to the sixteenth century. Great thinkers, such as Plato, Aristotle, Augustine, and Aquinas will be emphasized.

PHIL 301 History of Modern Philosophy
4 hrs.
A survey of modern philosophy from the Renaissance through Kant, with particular attention to epistemological and metaphysical themes in the works of Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, and Kant.

PHIL 303 Existentialist Philosophers
3 hrs.
A concentrated study of leading thinkers in modern philosophical existentialism: Kierkegaard, Nietzsche, Jaspers, Sartre, and Camus.

PHIL 310 Moral Philosophy
4 hrs.
A study of some basic problems in moral philosophy. Special attention is given to the question of the relationship between the justification of actions, and motives, excuses, intentions, consquences. Contemporary works are emphasized.

PHIL 311 Political Philosophy
3 hrs.
An examination of fundamental problems arising from political and social relationships. The main emphasis is on such political value concepts as liberty, equality, human rights and justice. Topics that might be considered include, but are not necessarily restricted to: the nature and basis of political authority and obligation, civil disobedience, tolerance and dissent; the aims of political institutions, law and morality.

PHIL 312 Philosophy of Art
3 hrs.
An analysis of the nature of art and aesthetic experience, and its significance in human life. The course may cover all forms of art, or concentrate on a few, for instance, literature, drama and music.

PHIL 313 Philosophy of Law
3 hrs.
The nature of law and legal systems. Questions studied include: the relation between law and morality; theories of constitutional and statutory interpretation; basic rights including the rights to privacy and maximum liberty; the definition of criminality and the justification of punishment; excuses.

PHIL 314 Philosophy and Public Affairs
3 hrs.
A philosophical examination of principles and values underlying contemporary social issues. The course will focus on specific issues such as environmental consciousness, abortion, privacy, censorship, world hunger, economic justice, business ethics, violence, war, peace, and utopian ideals. Topics to be...
announced in the Schedule of Classes. May be repeated for credit when topics vary.

PHIL 315 Race and Gender Issues 3 hrs.
A philosophical examination of principles and values underlying contemporary social issues involving race, gender, and related concepts. Topics include: identity, equality/inequality, equity, harassment, prejudice, discrimination, affirmative action.

PHIL 316 Ethics in Engineering and Technology 3 hrs.
An examination of ethical issues in engineering. Topics include: engineering as a profession, codes of ethics, engineering in business, industry and government; responsibilities to employers, clients, and society; conflicts of interest; safety and risk; whistle blowing; environmental concerns; and choosing careers in engineering and technology.

PHIL 320 Introduction to Formal Logic 4 hrs.
The study of general methods of analyzing and validating deductive reasoning. Arguments expressed in everyday language are analyzed and translated into the symbolic notation of logic, and calculations are performed in this notation to check the validity of the arguments. The course may include a brief consideration of the application of logic to computers. Open to qualified first-year students.

PHIL 325 Inductive and Scientific Reasoning 3 hrs.
The study of scientific reasoning and scientific methods. The focus is on probable inference, which is distinct from demonstrative or necessary inference. The course covers reasoning from particular cases, reasoning from analogy, and the Bayesian inference. The course covers enough deductive logic to introduce the basic notions needed from probability theory.

PHIL 332 Theory of Knowledge 4 hrs.
An examination of basic problems concerning knowledge and belief, discussing traditional approaches but stressing recent analyses. Possible topics: skepticism and certainty, knowing and believing, perception, memory, "a priori" vs. "a posteriori" knowledge, self-knowledge, knowledge of others.

PHIL 333 Metaphysics 4 hrs.
A study of basic metaphysical questions, discussing traditional solutions but emphasizing recent approaches. Questions will be selected from such topics as substances, qualities and relations, universals and particulars, identity, space and time, causation, mind and body, persons, free will.

PHIL 350 Foundations of the Modern Worldview 4 hrs.
The study of some basic ideas with which today's knowledgeable people make sense of their world and themselves. Topics may vary from term to term, but will include a philosophical study of the physical, biological or social sciences and some areas in the humanities that reflect changes in values associated with the modern worldview.

PHIL 355 Philosophy of Science 3 hrs.
A philosophical exploration of the basic concepts, methods, and aims of the natural sciences. The course explores issues such as confirmation, explanation, reduction, and the observation/theory dichotomy through philosophical analysis and case studies. The detailed analyses of historic and contemporary scientific practice will include teaching of the relevant science.

ADVANCED COURSES

PHIL 410 Professional Ethics 4 hrs.
A philosophical examination of the foundations of ethics in the professions. Topics to be considered include the professions and professionalism, relationships between professional and ordinary ethics, social responsibilities of the professions, professional/client relationships, regulation of the professions, and codes of ethics.

PHIL 434 Biomedical Ethics 4 hrs.
In this course, the ethical principles (respect for autonomy, non malefice, beneficence justice) and other ethical concerns (e.g. privacy, confidentiality, compassion, relationships among patients and professional) are studied and applied to contemporary problems in medicine and biomedical research. These problems include genetic testing and a theory, organ transplantation, decision-making regarding treatment and care at the end of life, research involving human subjects, and treatment issues in the AIDS epidemic. Case study methods are used.

PHIL 440 Philosophy at Pre-College Levels 4 hrs.
A content-oriented course for the teaching minor that explores topics, reading material, and ways of approaching them in the teaching of philosophy at the pre-college level. A special emphasis is put on critical and creative thinking.

PHIL 470 Seminar in Philosophy—Variable Topics 2-4 hrs.
Seminars deal with selected advanced topics in philosophy. Since content varies from seminar to seminar, students are advised to check course descriptions which are available in the department office. Suggestions for seminar topics from students are welcomed. Seminars may be set up to be taken for variable credit and to last more or less than a semester's length. May be repeated for credit when topics vary.

PHIL 480 Senior Seminar 4 hrs.
A comprehensive and in-depth examination of a central area or areas of philosophy. Topics may vary from term to term. The course may be about 1) the philosophy of one or more significant historical or 20th century thinkers; 2) a philosophical movement; or 3) a major philosophical issue that draws on a variety of sources. Prerequisites: Completion of 12 hours of philosophy, including either PHIL 300 or 301 and completion of the Baccalaureate level writing requirement. May be repeated for credit when topics vary.

PHIL 486 Independent Study 2-4 hrs.
Independent study is for those students who have attained a degree of competence in philosophy and who wish to embark upon a project to be carried out without the usual close guidance of the instructor in the classroom. Independent study may not be elected as a substitute for regularly scheduled course. Prerequisite: Permission of the instructor with whom the student wishes to work.

500-LEVEL COURSES

The prerequisites for admission into 500-level courses are: Junior status and 12 hours of philosophy. Specific prerequisites may be added to individual courses.
issues in the special sciences, e.g., the physical, biological or social sciences. 
Prerequisite: 12 credit hours in Philosophy. 
May be repeated for credit, with advisor's approval, when topics vary. 
PHIL 570 Philosophical Topics 
1–4 hrs. 
An examination of special philosophical topics. Topics to be listed in the Schedule of Classes. Prerequisite: Specific course prerequisites may be stipulated for specific topics and substitutions for philosophy may be allowed. Usually at least one of PHIL 300 or PHIL 301 will be required. May be repeated for credit, with advisor's approval, when topics vary. May be offered in an accelerated format. 
PHIL 598 Readings in Philosophy 
1–4 hrs. 
Research on some selected period or topic under supervision of a member of the Philosophy faculty.

**PHYSICS**

Robert Shamu, Chair 
Pam Pancelia, Assistant Chair 
Nora Barrah 
Clement Burns 
Sung Chung 
Thomas Gorzyca 
Dean Halderson 
Gerald Hardie 
Emanuel Kamber 
Dean Kaul 
Arthur McGurrn 
Pam Pancelia 
Lisa Paulius 
Alvin Rosenthal 
John Tanis

The Department of Physics offers four programs of study leading to a major in physics. Three of these are in the Arts and Sciences Curriculum (Physics Major, Physics Major with Electrical Engineering Option, and Physics Major with Materials Physics Option) and are programs that prepare students for graduate study or professional employment in physics. The secondary education (SED) Physics major prepares students to teach physics at the high school level. A Geophysics Major, sponsored jointly by the departments of Geology and Physics, is also available, enabling students to prepare for a career in an important area of applied physics.

Any student contemplating majoring or minoring in physics should contact the Department of Physics as early as possible. This is especially true for transfer students from community colleges in regard to transfer credit and course of study. Students will want to contact the department undergraduate advisor regarding courses, employment opportunities, and graduate study in physics. Any physics major may qualify for departmental honors in physics by fulfilling the following requirements:

1. Complete the courses recommended for students planning to enter graduate school.
2. Attain by the end of the semester preceding graduation an accumulated grade point average of at least 3.5 in physics courses and an accumulated grade point average of 3.0 in other courses.

Minor programs are available.

**Major and Minor Requirements**

All students majoring or minoring in Physics are required to complete the introductory courses PHYS 205, PHYS 206, PHYS 207, PHYS 208, PHYS 309, and PHYS 310 with a grade of "C" or better in each course.

**Physics Major**

The courses required for the Physics major are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 205</td>
<td>Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 206</td>
<td>Mechanics and Heat Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 207</td>
<td>Electricity and Light</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 208</td>
<td>Electricity and Light Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 309</td>
<td>Introductory Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 310</td>
<td>Introductory Modern Physics Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 330</td>
<td>Thermodynamics and Kinetic Theory</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 342</td>
<td>Electronics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 420</td>
<td>Analytical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 440</td>
<td>Electricity and Magnetism</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 460</td>
<td>Quantum Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 566</td>
<td>Advanced Laboratory</td>
<td>3</td>
</tr>
</tbody>
</table>

**Required Cognates**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 122</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 123</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 272</td>
<td>Vector and Multivariate Calculus</td>
<td>4</td>
</tr>
<tr>
<td>MATH 374</td>
<td>Introduction to Linear Algebra and Differential Equations</td>
<td>4</td>
</tr>
</tbody>
</table>

**OR**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 230</td>
<td>Elementary Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 274</td>
<td>Introduction to Differential Equations</td>
<td>4</td>
</tr>
</tbody>
</table>

**Computer Programming Requirement**

The Department requires Physics majors to have computer programming skills before graduation. This requirement may be met by previous programming experience or by taking appropriate course(s) in Computer Science.

**Baccalaureate Writing Requirement**

Students who have chosen the Physics major will satisfy the Baccalaureate Writing Requirement by successfully completing PHYS 566 Advanced Laboratory.

**Physics Major with Electrical Engineering Option**

This program is designed for those students who wish to pursue a physics degree with a concentration in Electrical Engineering. The courses required for the Physics major with Electrical Engineering option program are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 205</td>
<td>Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 206</td>
<td>Mechanics and Heat Laboratory</td>
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<td>Electricity and Light</td>
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<tr>
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<td>1</td>
</tr>
<tr>
<td>PHYS 309</td>
<td>Introductory Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 310</td>
<td>Introductory Modern Physics Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 566</td>
<td>Advanced Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>ECE 210</td>
<td>Circuit Analysis</td>
<td>4</td>
</tr>
<tr>
<td>ECE 221</td>
<td>Electronics I</td>
<td>4</td>
</tr>
<tr>
<td>ECE 310</td>
<td>Network Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

In addition to the above courses the student is required to take a minimum of three courses from among the following: The courses must include at least four hours of EE and be approved by the advisor.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 352</td>
<td>Optics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 562</td>
<td>Atomic and Molecular Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 564</td>
<td>Nuclear and Particle Physics</td>
<td>3</td>
</tr>
<tr>
<td>ECE 320</td>
<td>Electronics II</td>
<td>4</td>
</tr>
<tr>
<td>ECE 330</td>
<td>Electrical Machinery</td>
<td>4</td>
</tr>
<tr>
<td>ECE 371</td>
<td>Linear Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 380</td>
<td>Probabilistic Methods of Signal and System Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ECE 420</td>
<td>Power Electronics</td>
<td>3</td>
</tr>
<tr>
<td>ECE 430</td>
<td>Electrical Power Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 451</td>
<td>Digital Systems II</td>
<td>3</td>
</tr>
<tr>
<td>ECE 455</td>
<td>Digital Signal Processing</td>
<td>3</td>
</tr>
<tr>
<td>ECE 460</td>
<td>Communication Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 470</td>
<td>Feedback Systems</td>
<td>3</td>
</tr>
</tbody>
</table>
Computer Programming Requirement

The Department requires Physics majors with Electrical Engineering option to have computer programming skills before graduation. This requirement may be met by previous programming experience or by taking appropriate course(s) in Computer Science.

Baccalaureate Writing Requirement

Students who have chosen the Physics major with Electrical Engineering option must satisfy the Baccalaureate Writing Requirement by successfully completing PHYS 566 Advanced Laboratory.

Physics Major with Materials Physics Option

This program is designed for those students who wish to pursue a physics degree with a concentration in Materials Science. The courses required for the Physics major with Materials Physics option program are:

- PHYS 205 Mechanics and Heat 4
- PHYS 206 Mechanics and Heat Laboratory 1
- PHYS 207 Electricity and Light 4
- PHYS 208 Electricity and Light Laboratory 1
- PHYS 309 Introductory Modern Physics 3
- PHYS 310 Introductory Modern Physics Laboratory 1
- PHYS 330 Thermodynamics and Kinetic Theory 3
- PHYS 342 Electronics 4
- PHYS 420 Analytical Mechanics 3
- PHYS 460 Quantum Mechanics 3
- PHYS 563 Solid State Physics 4
- CMD 353 Physical Metallurgy I 4
- CMD 457 Mechanical Behavior of Materials 3
- CMD 471 Thermodynamics of Materials 4
- CMD 476 Failure Analysis and Corrosion 3
- CHEM 120 General Chemistry II 4
- GEOL 335 Mineralogy 4
- GEOL 336 Optical Mineralogy 3

Computer Programming Requirement

The Department requires Physics majors with Materials Physics option to have computer programming skills before graduation. This requirement may be met by previous programming experience or by taking appropriate course(s) in Computer Science.

Baccalaureate Writing Requirement

Students who have chosen the Physics major with Materials Physics option must satisfy the Baccalaureate Writing Requirement by successfully completing CMD 476 Failure Analysis and Corrosion.

Secondary Education Physics Major

The courses required for the SED Physics major are:

- PHYS 205 Mechanics and Heat 4
- PHYS 206 Mechanics and Heat Laboratory 1
- PHYS 207 Electricity and Light 4
- PHYS 208 Electricity and Light Laboratory 1
- PHYS 342 Electronics 4
- PHYS 352 Optics 3
- PHYS 363 Solid State Physics 4
- PHYS 372 Quantum Mechanics 4
- PHYS 382 Atomic and Nuclear Physics 4
- PHYS 392 Particle Physics 4
- PHYS 402 Computational Physics 4

Electives from upper-level geology, physics, and engineering courses to be chosen with the consent of the advisor. A field course in geology (6-8 hrs.) is strongly recommended.

Baccalaureate Writing Requirement

Students who have chosen the Geophysics major must satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses: GEOG 432 Geomorphology, GEOG 435 Stratigraphy, or ENGL 305 Practical Writing.

Physics Minor

The courses required for the Physics minor are:

- PHYS 205 Mechanics and Heat 4
- PHYS 206 Mechanics and Heat Laboratory 1
- PHYS 207 Electricity and Light 4
- PHYS 208 Electricity and Light Laboratory 1
- PHYS 309 Introductory Modern Physics 3
- PHYS 310 Introductory Modern Physics Laboratory 1

In addition, two physics courses numbered above 300 and totaling a minimum of six hours of credit are required.

Secondary Education Physics Minor

The courses required for the SED Physics minor are:

- PHYS 205 Mechanics and Heat 4
- PHYS 206 Mechanics and Heat Laboratory 1
- PHYS 207 Electricity and Light 4
- PHYS 208 Electricity and Light Laboratory 1
- PHYS 309 Introductory Modern Physics 3
- PHYS 310 Introductory Modern Physics Laboratory 1
- PHYS 342 Electronics 4
- PHYS 352 Optics 3

Physics Courses (PHYS)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

A student is required to earn a grade of "C" or better in a prerequisite course before enrollment is permitted in the next sequence course.

PHYS 102 Physics, Technology, and Society 3 hrs.

The main objective of this course is to provide the student with a quantitative understanding of physical principles which underlie selected environmental problems. Topics covered include the energy problem, air pollution, and nuclear weapons. This course may not be applied toward either a major or minor in physics. Prerequisite: MATH 110 or equivalent.

PHYS 103 Astronomy Laboratory 1 hr.

The laboratory exercises include studying atomic spectra, classifying stars, determining the orbit of the moon, calculating the recessional velocities of distant galaxies, etc. Algebra and trigonometry are required to do many of the exercises. Recommended for students majoring in the physical sciences. This course should be taken concurrently with PHYS 104. A student can not receive credit for both PHYS 103 and PHYS 105.

PHYS 104 Introductory Astronomy 3 hrs.

The aim of the course is to present the development of knowledge about the solar system, the stars, the galaxies, and the origin and evolution of the universe. Emphasis will be placed on the methods and tools of the astronomer, on the major principles and their...
A student may not receive exercises related to topics covered in PHYS 115. Normally this course is taken concurrently with PHYS 105 and either PHYS 103 or PHYS 104.

**PHYS 105 Introductory Astronomy**

4 hrs.

This is a first course in astronomy with laboratory and covers the appearance of the night sky, the nature of the solar system, the life stories of stars, the basic properties of clusters and galaxies, and the evolution of the cosmos. Prerequisite: High school algebra. A student cannot receive credit for both PHYS 105 and any of the following: PHYS 109, PHYS 113, or PHYS 205.

**PHYS 108 Elementary Physics Laboratory**

1 hr.

This is a laboratory course which includes exercises related to topics covered in PHYS 107. Normally this course is taken concurrently with PHYS 105 and any of the following: PHYS 109, PHYS 113, or PHYS 205.

**PHYS 107 Elementary Physics**

4 hrs.

This course surveys physics from mechanics to modern physics in one semester. It is designed for students in curricula requiring only one semester course at the general college physics. A student cannot receive credit for both PHYS 107 and any of the following: PHYS 109, PHYS 113, or PHYS 205.

**PHYS 113 General Physics I**

4 hrs. Fall, Winter, and Spring

A general college physics course in the principles and practical application of mechanics, sound, and heat. Recommended for students in curricula other than science and students desiring a non-calculus course in physics. Many schools of engineering will not accept PHYS 113–116 for transfer credit. Prerequisite: MATH 110 or equivalent. A student cannot receive credit for both PHYS 113 and any of the following: PHYS 107, PHYS 109, or PHYS 205.

**PHYS 114 General Physics I Laboratory**

1 hr. Fall, Winter, Spring

This is a laboratory course which includes exercises related to topics covered in PHYS 113. Normally this course is taken concurrently with PHYS 113. A student cannot receive credit for both PHYS 114 and either PHYS 108 or PHYS 206. Prerequisite: PHYS 113 concurrently.

**PHYS 115 General Physics II**

4 hrs. Fall, Winter, Summer

This course follows PHYS 113 and consists of studies in electricity, magnetism, light and atomic and nuclear physics. Prerequisite: PHYS 113.

**PHYS 116 General Physics II Laboratory**

1 hr. Fall, Winter, Summer

This is a laboratory course which includes exercises related to topics covered in PHYS 115. Normally this course is taken concurrently with PHYS 115. A student cannot receive credit for both PHYS 116 and PHYS 208. Prerequisite: PHYS 115 concurrently.

**PHYS 205 Mechanics and Heat**

4 hrs. Fall, Winter, Spring

This course develops models of effective problem-solving techniques needed by Secondary Education instructors in the teaching of mechanics. Emphasis is on free-body diagrams, action-reaction pairs, and the energy balance in simple mechanical systems. Prerequisite: PHYS 205 or consent of instructor.

**PHYS 310 Problems in Mechanics**

1 hr.

This course is designed to enhance the problem-solving techniques needed by Secondary Education instructors in the teaching of mechanics. Emphasis is on the First and Second Laws, P-V diagrams, and the energy balance in simple thermodynamic systems. Prerequisite: PHYS 205.

**PHYS 320 Problems in Mechanics**

2 hrs.

This course is designed to enhance the problem-solving techniques needed by Secondary Education instructors in the teaching of thermodynamics. Emphasis is on the First and Second Laws, P-V diagrams, and the energy balance in simple thermodynamic systems. Prerequisite: PHYS 205.

**PHYS 330 Thermodynamics and Kinetic Theory**

3 hrs. Fall

Classical equilibrium thermodynamics is developed from the macroscopic viewpoint. Postulates, empirically founded, are put forth and the consequences are developed and applied to systems of interest in physics and chemistry. Introductory kinematics with selected topics is also included, as is an introduction to quantum statistics. Prerequisite: PHYS 207.

**PHYS 342 Electronics**

4 hrs. Winter

This course deals with analyses of transistor and integrated circuits and includes practical experience in the laboratory. There are three lectures and one three-hour laboratory per week. A student cannot receive credit for both PHYS 342 and ECE 210. Prerequisite: PHYS 207.

**PHYS 352 Optics**

3 hrs.

This is an introductory course in geometrical and physical optics in which the main topics covered are reflection, refraction, mirrors, aberrations, simple optical instruments, wave motion, interference, diffraction, and polarization. Lasers, fiber optics, holography, and image processing are covered qualitatively as time permits. Two lectures and one two-hour laboratory per week. Prerequisites: PHYS 207 and PHYS 208.

**PHYS 404 Teaching of Secondary Science**

3 hrs.

This course addresses the topics of teaching and learning of science at the secondary level. It is designed for those in secondary education who intend to be certified to teach the earth, life, or physical sciences (physics and chemistry) and focuses on the issue of how students learn science concepts and problem-solving skills in meaningful ways. The course develops models of effective instructional strategies designed to promote student learning and understanding of science concepts and processes. Practical methods for demonstrating, using models, planning laboratory experiences, managing science equipment, and safety concerns are developed and discussed. Students also work in discipline-specific groups to address issues unique to that area of science and the science classroom. Prerequisites: 15 hours of coursework in a certifiable science discipline. **PHYS 312 Recent Developments in Physics**

3 hrs.

This course is designed to acquaint the student with new and exciting developments in selected areas of physics and astrophysics. The course content will change from year to year to include the latest advances in high energy physics, nuclear physics, astrophysics, solid state physics and optics. The treatment is largely descriptive with minimal mathematics. Prerequisite: PHYS 309 or consent of instructor.
and ED 302 which may be taken concurrently
with this course. Cross listed with SCI 404.

PHYS 420 Analytical Mechanics
3 hrs. Fall
The topics studied include the dynamics of
single particles and the motion of systems of
interacting particles. Techniques of vector
analysis are used frequently and conservation
laws are developed and applied. The
Lagrangian formulation of mechanics is
introduced. Prerequisites: PHYS 207 and
either MATH 274 or 374. The mathematics
course may be taken concurrently.

PHYS 440 Electricity and Magnetism
4 hrs.
This course provides an upper-level theoretical
treatment of electromagnetic phenomena,
using methods of vector calculus. Electro- and
magneto-statics, induction, Maxwell's
equations, and electromagnetic radiation are
treated. Prerequisites: PHYS 207 and either
MATH 274 or MATH 374, and MATH 572.
MATH 572 may be taken concurrently.

PHYS 460 Quantum Mechanics
3 hrs. Winter
This is a first course in quantum theory. It
treats the historical basis of the quantum
concept in the theory of cavity radiation and
the photoelectric effect. Topics include the
Schrödinger wave equation, hydrogenic
atoms, two-electron atoms, angular
momentum coupling, and perturbation theory.
Prerequisites: PHYS 309 and 420 or consent of
instructor.

PHYS 498 Special Problems
1–3 hrs.
In this course a student works on a laboratory
project or a reading project under the direction
of a faculty member. Prerequisite: Consent of
instructor.

The 500-level courses are offered only to
advanced physics majors. Department policy
requires that undergraduates enrolling in these
courses have successfully completed all
prerequisite studies prior to enrollment.

The Department recommends that Physics
majors who plan to enter a graduate college
complete two of the following courses: PHYS
562, PHYS 563, or PHYS 564.

PHYS 562 Atomic and Molecular Physics
3 hrs.
This course continues the study of the
applications of quantum mechanics. Topics
covered include the helium atom, multielectron
atoms, the Raman, Zeeman, and Stark effects,
stimulated emission, transition rates, selection
rules, the diatomic molecule, and molecular
physics. Prerequisite: PHYS 460.

PHYS 563 Solid State Physics
3 hrs.
After an initial study of symmetry and crystal
structure, quantum mechanics is used to
describe the cohesion of solids, x-ray and
neutron diffraction, the elasticity of solids,
lattice vibrations, and the thermal and
electrical properties of solids, with particular
emphasis on metals. Prerequisite: PHYS 460.

PHYS 564 Nuclear and Particle Physics
3 hrs.
This course covers such topics as properties of
nuclei, collision theory, nuclear reactions,
nuclear models, fundamental interactions,
and classification techniques used in particle
physics. Discussions of experimental methods
as well as theoretical treatments using quantum mechanics are included.
Prerequisite: PHYS 460.

PHYS 566 Advanced Laboratory
3 hrs. Winter
The objectives of this course are to provide the
student with experience in the use of
laboratory equipment and with an
understanding of several important physical
phenomena. The student will perform
experiments from a list covering three areas:
atomic, solid state, and nuclear physics. A
portion of the semester may be devoted to
studying a problem in depth. The course
consists of two-hour laboratory periods
each week. Prerequisites: PHYS 342 and
PHYS 460 (460 may be elected concurrently
with 566.)

PHYS 598 Selected Topics
1–4 hrs.
This course affords an opportunity for
advanced students with good scholastic
records in physics to pursue independently
the study of some subject of interest to them.
Prerequisite: Consent of instructor.

POLITICAL SCIENCE

David G. Houghton, Chair
James M. Butterfield
Paul Clements
J. Kevin Corder
Kenneth A. Dahlberg
Suhashni Datta-Sandhu
Elisabeth Friedman
Emily Hauptmann
Gunther M. Hega
Alan C. Isaak
Peter Kobrak
Ashlyn Kuersten
Carolyn Lewis
Richard L. McAnaw
Neil Pinney
Peter G. Renstrom
William A. Ritchie
Chester B. Rogers
Murray Scott Tanner
Lawrence Ziring

Courses in the department are designed to
prepare a student to: (1) become a functioning
citizen; (2) become a teacher of government
or civics; (3) become a governmental
employee or officer; (4) understand the part
government plays in everyday business or
other activities; (5) develop sound methods of
investigation and reflection as well as the
ability to evaluate political information
critically; (6) understand the role that
individuals and organized groups can play in
the political process; and (7) appreciate the
relationship of the study of government and
public affairs to other social sciences.

Students who wish to major or minor in political
science or public administration should come
to the department office as soon as possible to
complete the appropriate declaration form and
to consult with a departmental advisor.

Programs of study offered by the
department include: (1) a standard major and
minor in political science; (2) a major in
political science with an international and
comparative politics concentration; (3) a major
in political science with a public law
concentration; (4) a major in political science
with a public policy concentration; (5) a major
and minor in public administration; and (6) a
teaching major and minor in political science.

Baccalaureate Writing Requirement

Students who have chosen the Political
Science major (any concentration) or the
Public Administration major will satisfy the
Baccalaureate Writing Requirement by
successfully completing one of the following
courses:

• PSCI 391 Internship Seminar
• PSCI 404 Making of Public Policy in
  the U.S.
• PSCI 405 National Public Policy
• PSCI 450 Seminar in International and
  Comparative Politics
• PSCI 490 Political Science Honors Seminar
• PSCI 494 Seminar in Political Science

Major and Minor in Political
Science

MAJOR

The major consists of a minimum of 33
semester hours of work in the department. It is
expected that transfer students will take at
least one-half of the minimum required 33
hours in the department. The following are
required courses for majors:

• PSCI 200 National Government
• PSCI 250 International Relations
• PSCI 365 Scope and Methods of Political
  Science
• PSCI 395 Quantitative Methods for Political Scientists
• ONE course in foreign and comparative political systems (to be chosen from PSCI 340, 341, 342, 343 or 344)
• ONE course in political theory (to be chosen from PSCI 360, 361, 362, 363 or 562)
• Baccalaureate Writing Requirement (choose one from PSCI 391, 404, 405, 450, 490 or 494)

Students who plan to become majors are encouraged to take PSCI 100, Introduction to Political Science, as their first course in the department during their freshman year.

MINOR
The standard political science minor consists of 20 semester hours in political science. It is expected that transfer students will take at least one-half of the minimum required 20 hours in the department. A political science minor shall complete
• PSCI 200 National Government
• PSCI 260 International Relations
• ONE course in foreign and comparative political systems (to be chosen from PSCI 340, 341, 342, 343 or 344)
• ONE course in political theory (to be chosen from PSCI 360, 361, 362, 363 or 562).

Requirements may be waived with the written permission of the chairperson of the department.

International and Comparative Politics Concentration
This concentration is available within the political science minor for students with particular career and/or advanced degree interests that would require concentrated knowledge of foreign politics and/or international politics. The concentration provides for students completing the program to receive designation of this specialization on their Permanent Record Card.

The concentration in international and comparative politics is aimed at preparing students for careers in international affairs, the foreign service, development assistance, and international business.

Students interested in a major in political science with a concentration in international and comparative politics should see the designated departmental advisor.

To complete the concentration within political science, a student must:

A. Complete the required core for the Major (19 hrs.)
   - PSCI 200 National Government
   - PSCI 240 Introduction to Comparative Politics
   - PSCI 250 International Relations
   - PSCI 366 Scope and Methods of Political Science
   - PSCI 395 Quantitative Methods for Political Scientists

B. Complete THREE of the following courses (12 hrs.)
   - PSCI 340 West European Political Systems
   - PSCI 341 African Political Systems
   - PSCI 342 Asian Political Systems
   - PSCI 343 Latin American Political Systems
   - PSCI 344 Russian and East European Politics
   - PSCI 346 Women in Developing Countries
   - PSCI 350 American Foreign Policy
   - PSCI 362 Contemporary Political Theory
   - PSCI 363 African Political Systems
   - PSCI 364 Women in Developing Countries
   - PSCI 365 Comparative Politics
   - PSCI 366 Contemporary Political Theory

C. Complete EACH of the following courses (6-7 hrs.)
   - PSCI 450 Seminar in International and Comparative Politics (prerequisites: PSCI 250, one of the 340s, and approval of the instructor or advisor required)

D. Complete Cognate courses (9-11 hrs.)
   - Complete at least three additional courses on foreign, international, or cross-national topics (to be chosen from PSCI 340, 341, 342, 343 or 344)

Public Law Concentration
This concentration is available within the political science minor for students with particular career and/or advanced degree interests in this field. The concentration allows students completing the program to receive designation of this specialization on their Permanent Record Card.

Public Law is concerned with judicial and quasi-judicial institutions at the international, national, state, and local levels. The concentration is primarily, though not exclusively, designed for students with career interests in the field of law.

To complete the concentration within political science, a student must:

A. Complete the required core for the Major (23 hrs.)
   - PSCI 200 National Government
   - PSCI 250 International Relations
   - PSCI 366 Scope and Methods of Political Science
   - PSCI 395 Quantitative Methods for Political Scientists

   ONE course in comparative politics (to be chosen from PSCI 340, 341, 342, 343 or 344)

   ONE course in political theory (to be chosen from PSCI 360, 361, 362, 363 or 562)

   Baccalaureate Writing Requirement (choose one from PSCI 391, 404, 405, 450, 490 or 494)

B. Complete PSCI 320 American Judicial Process (4 hrs.)

C. Complete TWO of the following courses (6 hrs.)
   - PSCI 325 Criminal Justice Policy
   - PSCI 420 Constitutional Law
   - PSCI 422 Civil Liberties and Civil Rights

D. Complete TWO of the following courses (6 hrs.)
   - These courses cannot be substituted for any of the requirements in A-C above.
   - FCL 380 Legal Environment
   - FCL 384 Criminal Law and Procedure
   - PHIL 313 Philosophy of Law
   - SOC 362 Criminology
   - SOC 363 Criminal Justice Process

Public Policy Concentration
This concentration is available within the political science major for students with particular career and/or advanced degree interests in this field. The concentration provides for students completing the program to receive designation of this specialization on their Permanent Record Card.

The concentration in public policy is aimed at preparing students for careers in government service at a national, state, and local levels, and in politics.

Students interested in a major in political science with a concentration in public policy should see the designated departmental advisor.

To complete the major, a student must complete the following:

I. Required core (10 hrs.)
   - PSCI 200 National Government
   - PSCI 202 State and Local Government

   ONE theory course to be chosen from:
   - PSCI 362 Contemporary Political Theory
   - PSCI 363 American Political Theory
   - PSCI 562 Modern Democratic Theory

II. Methods (6 hrs.)
   - PSCI 366 Scope and Methods of Political Science
   - PSCI 395 Quantitative Methods for Political Scientists

III. Policy Applications and Institutions (16 hrs.)
   - Required:
     - PSCI 304 Intro. to Public Policy
     - PSCI 405 National Public Policy
     - PSCI 535 Budgeting and Finance
   - One course to be chosen from List A.
     - PSCI 300 Urban Politics
     - PSCI 306 Environmental Politics
     - PSCI 350 American Foreign Policy
     - PSCI 404 Making Public Policy
     - PSCI 526 Administrative Law and Public Reg.
   - One course to be chosen from List B below OR from the courses not already selected from List A above.
     - PSCI 314 The Presidency
     - PSCI 315 Politics of Congress
     - PSCI 320 American Judicial Process

Programs in Public Administration
These programs are designed to prepare students for entrance level positions in public and public-related agencies by equipping them with a knowledge and understanding of the political, social, economic, and legal environment of public agencies, by introducing them to operational and procedural problems of public agencies, and by providing them with an understanding of selected administrative tools.

The major in public administration has an interdisciplinary focus, which includes required courses in accounting, computers, economics, and statistics as well as political science. Internships which permit students to assist public administrators in their work are available. Credit can be obtained for these internships.

All students who elect the public administration programs are to complete a major or minor slip in consultation with a public administration advisor in the Department of Political Science. The student must consult with an advisor upon entering the program.

The political science major program in public administration requires 40 semester credit hours divided between:

1. A 34-semester-hour core of required courses;
2. (6) hours of electives.
The minor in public administration requires 22 contact hours with governmental agencies and the Department of Political Science. The minor also cooperates with the Haworth College of Business in offering a major in public administration, and the political science administration advisor.

The teaching major consists of a minimum of 24 semester hours in political science. It is expected that transfer students will take at least one-half of the minimum required 21 hours in the department. A teaching minor shall complete:

- PSCI 200 National Government
- PSCI 202 State and Local Government
- PSCI 204 Making of Public Policy
- PSCI 304 Introduction to Public Administration
- PSCI 352 Quantitative Methods for Political Scientists

The honors program in political science provides an opportunity for students to earn the bachelor's degree with honors in political science. To be eligible, a student must have at least four years of upper division coursework and an average of at least 3.5. The honors program should consult the departmental honors advisor, Dr. M. Scot Tanner.

Secondary Education Curriculum

MAJOR

The teaching major consists of a minimum of 30 semester hours of work in political science. It is expected that transfer students will take at least one-half of the minimum required 30 hours in the department. The following are required courses for teaching majors:

- PSCI 200 National Government
- PSCI 202 State and Local Government
- PSCI 250 International Relations
- PSCI 352 Quantitative Methods for Political Scientists

Students may become teaching majors are encouraged to take PSCI 100, Introduction to Political Science, as their first course in the department during their freshman year. Students planning to use this major to meet teacher certification requirements are required to complete GEOG 460, Concepts and Strategies in the Teaching of Geography, or HIST 396, Teaching Methods in the Secondary School. Teaching majors must also complete the secondary education minor in group social science.

MINOR

A teaching minor consists of 21 semester hours of work in political science. It is expected that transfer students will take at least one-half of the minimum required 21 hours in the department. A teaching minor shall complete:

- PSCI 200 National Government
- PSCI 202 State and Local Government
- PSCI 250 International Relations

Honors Program

The honors program in political science provides an opportunity for students to earn the bachelor's degree with honors in political science. To be eligible, a student must have at least four years of upper division coursework and an average of at least 3.5. The honors program should consult the departmental honors advisor, Dr. M. Scot Tanner.

Foreign Study

Study abroad is encouraged by the Political Science Department. University funds are available to assist students who would like to spend a semester studying abroad. Credit toward any of the majors in political science can be obtained while studying in other countries. To explore these opportunities, talk with one of the faculty in the Political Science Department or contact Margaret Riley, Foreign Study Coordinator, Office of International Affairs, Ellsworth Hall.

Institute of Government and Politics

The Department of Political Science houses the Institute of Government and Politics (IGP). The mission of IGP is multidimensional. It is organized to serve the professional staff of the Department of Political Science in their varied fields of interest and specialization. It will assist in meeting the needs of the department's student body by extending the educational experiences beyond the confines of the classroom. IGP also reaches out into the larger community, to the university, its immediate environment, the state and national scenes as well as the international arena. In this regard, IGP gives particular emphasis to the practical applications of political science training. It is therefore charged with the development of relationships between the Department of Political Science and the various colleges, departments, and programs comprising the University.

Courses By Topic

PRINCIPLES

1. Introduction to Political Science
2. Political Theory I: Political Theory I
3. Introduction to Contemporary Politics
4. Advanced Political Theory
5. Introduction to Political Science

FOREIGN AND COMPARATIVE POLITICAL SYSTEMS

1. Introduction to Comparative Politics
2. Introduction to Western Political Systems
3. African Political Systems
4. Asian Political Systems
5. Latin American Political Systems
6. Russian and East European Politics
7. Women in Developing Countries
8. Political Change in Russia
9. Problems of Political Systems

INTERNATIONAL RELATIONS

1. Introduction to International Relations
2. American Foreign Policy
3. Seminar in International and Comparative Politics
4. International Relations
5. United Nations
6. International Law

POLITICAL THEORY AND METHODOLOGY

1. Introduction to the Philosophy of Political Theory I: Political Theory I
2. Introduction to Political Theory
3. Theoretical and Ideological Bases of Contemporary Politics
4. American Political Theory
5. Quantitative Methods for Political Scientists
6. Modern Democratic Theory
7. Theories of Revolution

SPECIAL STUDIES

1. Political Topics
2. Issues in Contemporary Politics
3. Field Work in Political Science
4. Internship Seminar
5. Field Work in Foreign Political Systems
6. Special Topics
7. Political Science Honors Research
Political Science Courses (PSCI)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

PSCI 100 Introduction to Political Science 3 hrs.
An introduction to those concepts useful for an understanding of politics. These concepts and their interrelationships will be examined in the context of contemporary political systems.

PSCI 105 Critical Thinking About Politics 3 hrs.
The application of critical thinking to the analysis of politics. The basic components of logical argumentation will be applied to the examination of a variety of political, social, economic and ideological issues. Major topics to be covered include power, authority, political ideology, and the structures and processes of political systems.

PSCI 200 National Government 3 hrs.
An introductory survey of American national government. This course introduces the basic principles and theories of American government, explores the political process, describes the structure, and illustrates its functions. Consideration is given to the relationships of government to the ethnic, religious, and cultural diversity of the American society.

PSCI 202 State and Local Government 4 hrs.
A study of the institutions, the problems and the politics of policy making at the state and local levels in the United States. Consideration is given to the changing relations of state and local government to the total framework of government in the United States.

PSCI 240 Introduction to Comparative Politics 3 hrs.
This course introduces students to the field of comparative politics, its key concepts and major theoretical approaches. The bulk of the course is a broad introduction to the major types of political systems in the modern world (liberal democratic, communist/post-communist, fascist, and developmental authoritarian systems), including their guiding ideologies, historical/social origins, key institutions, and their companion economic systems. Problems of democratization in non-democratic systems, the forces for change and dilemmas of reform, are key themes.

PSCI 250 International Relations 4 hrs.
A study of the nature of the international community and the forces which produce cooperation and conflict. Particular attention is given to analyzing power in terms of its acquisition and uses.

PSCI 270 Political Topics 1–3 hrs.
A specifically focused course dealing with a political topic of general student interest. The course will be primarily substantive rather than theoretical to accommodate students with no previous training in political science. The topic will be announced in advance, and the course may be repeated for credit with a different topic.

PSCI 300 Urban Politics in the United States 3 hrs.
A study of those factors having an impact on the governing of American cities, including social and economic conditions in the cities, the organization of local political systems, and the actions of the state and federal governments. The principal focus will be on the city as a center of economic problems and social tensions that are largely the product of ethnic and cultural diversity.

PSCI 304 Introduction to Public Policy 3 hrs.
An introduction to the U.S. public policy process through the use of general models and case studies. Various inputs of power and influence are analyzed as proposals are considered in policy-making institutions. The roles of public officials, interest groups, lobbyists, opinion leaders, experts and others are analyzed. Evaluations of policies are made with respect to their perceived need, appropriateness and effectiveness. Prerequisite: PSCI 200.

PSCI 306 Environmental Politics 3 hrs.
An examination of the major legal, political, and bureaucratic forces influencing the development and implementation of environmental policy. Interactions between levels and units of government are analyzed. Effective modes of citizen participation and action, especially at the local level, are discussed throughout.

PSCI 310 Political Parties and Elections 3 hrs.
A study of the nature of politics, the organization and function of political parties and elections, and the elective process in the U.S.

PSCI 311 American Politics and the Media 3 hrs.
An examination and analysis of the basic features of the mass media and their relationship to American politics from both a political and historical perspective. Specific topics include the mass media as institutions in the American political system, media influence on politics, regulation of the media, private and concentrated ownership, and the growth of new media technologies such as cable, satellite and Internet.

PSCI 312 Interest Groups and Citizen Politics 3 hrs.
An examination of interest group politics and citizen participation. Topics include interest group roles, formation and growth, resources, techniques of lobbying, and a critical examination of the influence of interest groups on the American political process. The civil society portion of the course focuses largely on the non-electoral forms of political participation including participation through interest group association, activities that use various institutional channels, and those forms of participation which occur outside such channels.

PSCI 314 The Presidency 3 hrs.
A study of the presidency, including the White House staff and cabinet, the institutional and policy leadership of the president, and the politics of presidential selection.

PSCI 315 The Politics of Congress 3 hrs.
Examinations of the internal arrangements and the outside forces that impact upon the operations of the U.S. Congress. Emphasis is placed on explaining why Congress behaves as it does.

PSCI 320 The American Judicial Process 4 hrs.
An introduction to the politics of the American judicial process. The course will examine the judicial function generally with particular attention on the decisional processes, process participants, state and federal court structures, recruitment and selection of judges, bases of judicial behavior, policy making, and impact of judicial decisions.

PSCI 325 Criminal Justice Policy 3 hrs.
An examination of various judicial, legislative and executive policy decisions which govern the criminal justice processes. The course will include extensive discussion of the political dynamics of the policy making processes.

PSCI 330 Introduction to Public Administration 3 hrs.
An introductory course in the administrative process in the public service. Special attention given to the environment and politics of administration, the role of the chief executive and the legislature. Detailed consideration of personnel and financial problems of administration.

PSCI 340 West European Political Systems 4 hrs.
Considerations of the organization, political behavior and decision-making processes of the major countries of West Europe, including Britain, France and Germany. Political trends and forces challenging and reshaping democratic institutions are examined.

PSCI 341 African Political Systems 4 hrs.
A systematic survey of the social, economic and political characteristics of the area. Political culture, institutions and processes, including both traditional and modern forms, are examined in detail. Major political problems dealing with political development are analyzed.

PSCI 342 Asian Political Systems 4 hrs.
A systematic survey of the social, economic and political characteristics of the area. Political culture, institutions and processes, including both traditional and modern forms, are examined in detail. Major political problems, country differences, and various political development theories are analyzed.

PSCI 343 Latin American Political Systems 4 hrs.
A systematic survey of the social, economic, and political characteristics of the area. Political culture, institutions and processes are examined in detail. Intra-regional differences, major political problems and political development theories are analyzed.

PSCI 344 Russian and East European Politics 4 hrs.
An examination of the former Communist countries of the ex-Soviet bloc, covering in detail the political structures and processes of the communist period and the post-communist transitions to widely divergent societies and politics. Social and economic policy and popular attitudes are also examined.

PSCI 346 Women in Developing Countries 4 hrs.
Women's socioeconomic and political role and status will be examined in relation to the impact of colonialism, forces of modernity, and developmental issues.

PSCI 350 American Foreign Policy 4 hrs.
An analysis of the institutions and processes by which the American people and their government determine and seek to achieve the national interest of the United States in the international community.

PSCI 360 Introduction to the History of Political Theory I: Political Theory to Thomas Hobbes 3 hrs.
A survey of political philosophy as it developed in Classical Greece, Rome, Medieval Europe, the Reformation and the Renaissance. Emphasis placed on comparative analysis of political philosophies as they reflect the richly diverse sociocultural conditions of these periods.

PSCI 361 Introduction to the History of Political Theory II: Political Theory from Thomas Hobbes to Karl Marx 3 hrs.
A survey of political philosophy from the seventeenth century to the middle of the nineteenth. Emphasis upon the great individuals that have advanced the field history and the early development of the major ideological systems of the modern period: conservatism, liberalism and socialism.

PSCI 362 Theoretical and Ideological Bases of Contemporary Politics 3 hrs.
A survey of the more significant developments beginning with the confrontation between socialism and liberalism and concluding with an analysis of the theories and ideologies that have emerged in our own times.

PSCI 363 American Political Theory 3 hrs.
An exposition and critical analysis of American political thought from the colonial period to the contemporary period, with primary emphasis on concepts of democracy, liberty, and property, and on varieties of liberalism and conservatism.

PSCI 366 Scope and Methods of Political Science 3 hrs.
An introduction to the discipline of political science, including an examination of the development of political science and the methods and approaches used by contemporary political scientists to describe, explain, predict and evaluate political phenomena. Prerequisite: 9 hours of political science.

PSCI 370 Issues in Contemporary Politics 3-4 hrs.
This course is designed for the study of contemporary political problems. It is intended to provide opportunity for the study of political phenomena normally beyond the scope of regular departmental offerings. Essentially the course relates the theory and principles of political science to practical politics. The course may be applied to the appropriate field distribution requirement. Topics will vary from semester to semester. Students may repeat the course for credit.

PSCI 390 Field Work in Political Science 1-12 hrs.
An opportunity for students of Political Science or Public Administration to test theoretical and practical knowledge in an internship situation under the supervision of a faculty sponsor and a public or public-related official. Students wishing to apply must have a minimum of fifteen hours in Political Science and department approval before registering. Approved application required. Graded on a Credit/No Credit basis.

PSCI 391 Internship Seminar 3 hrs.
An undergraduate seminar in conjunction with Field Work in Political Science (PSCI 390). An emphasis will be placed on readings that analyze the administrative realm and also focus on recent political, economic, and social developments. Interns also will discuss their field experiences. Department approval must be obtained to enroll for this seminar.

PSCI 395 Quantitative Methods for Political Scientists 3 hrs.
This course provides an introduction to the basic computer skills and statistical methods employed by political scientists involved in empirical research; it provides students with the working ability to read, understand and correctly interpret empirical analyses which employ these methods; and it provides a better appreciation for political science as a science, i.e., the limitations and achievements inherent in the attempt to study political phenomena through the process of quantification. Basic univariate and bivariate analyses with computer applications will be covered. Prerequisite: General education math proficiency.

PSCI 404 Making of Public Policy in the U.S. 3 hrs.
A study of the formation of public policy at the local, state, and national levels with emphasis on the impact of decision processes upon policy outcomes.

PSCI 405 National Public Policy 4 hrs.
This seminar places primary attention on emerging trends and issues that will affect the political, economic, and social character of American public life a decade or more ahead, and analyzes potential changes in existing public policies. Significant analysis and writing are required. Prerequisite: PSCI 304 or consent of instructor.

PSCI 410 American Public Opinion 3 hrs.
A study of public opinion in the American context and its potential influence on the governmental process. Topics include measurement of public opinion, the psychology of opinion holding, the role of political ideology and party identification, the formation of political attitudes, trends in public opinion, the group basis of public opinion, the influence of public opinion during elections, and the existence of political linkages between public opinion, elected officials and policy decisions. Prerequisite: PSCI 395.

PSCI 420 Constitutional Law 3 hrs.
Study of leading American constitutional principles as they have evolved through major decisions of the U.S. Supreme Court. Emphasis on judicial review, federalism, separation of powers, commerce and taxation. Prerequisites: Junior status.

PSCI 422 Civil Liberties and Civil Rights 3 hrs.
Course will use selected Supreme Court rulings to examine how individual rights are protected under terms of the U.S. Constitution. The course will focus on those tensions prompted by cultural diversity in the United States. Prerequisite: Junior status.

PSCI 449 Field Work in Foreign Political Systems 3-4 hrs.
Experience and field research in a particular foreign nation or region. Emphasis will be placed upon the observation of political, economic, and social manifestations of the international political economy; local, regional, and national policies and governments in the area visited; and issues of political importance in the area visited. An overview of both general themes of political economy and the political history of the region visited will be included in the course. Prerequisite: 12 hours of social science or approval of the instructor.

PSCI 450 Seminar in International and Comparative Politics 3 hrs.
Designed to be a capstone to the concentration in International and Comparative Politics, this seminar will examine in detail a theme in cross-national or international politics. It is designated as one of the department's writing intensive courses. Prerequisites are PSCI 250, 350, any one of the PSCI 340 series, and approval of the instructor.

PSCI 490 Political Science Honors Seminar 3 hrs.
An undergraduate seminar for honor students and others admitted by consent of the Department Honors Committee. The content of the seminar varies and will be announced in advance. May be repeated. Prerequisite: Admission by permission of the Department Honors committee.

PSCI 492 Political Science Honors Research 2-3 hrs.
Honor students, with the guidance of a faculty advisor, conduct research and write the Honors Paper on a topic of individual interest. Prerequisite: Membership in the Political Science Department Honors Program and approved application to the program.

PSCI 494 Seminar in Political Science 3 hrs.
An undergraduate seminar for Political Science and Public Administration majors seeking to fulfill the baccalaureate-level writing requirement. The topic of the seminar varies and will be announced in advance. At least one-third of the final grade will be determined on the basis of writing performance. Restricted to students majoring in Political Science or Public Administration. Prerequisite: advanced political science/public administration majors.

Undergraduates may enroll in 500-level courses only after (1) attaining junior status and (2) taking PSCI 100 or PSCI 200 and three additional courses in political science or by obtaining prior approval of the department chair.

PSCI 506 Problems of American Government 3-4 hrs.
A critical examination of major problems facing national, state, or local government with emphasis upon contemporary efforts and studies designed to understand or solve such problems. May be repeated for credit when topics vary.

PSCI 526 Administrative Law and Public Regulation 3 hrs.
A study of the requirements for, and the limits on, the exercise of administrative powers by public officials charged with regulating significant aspects of the social and economic life of the nation. Special attention is paid to the extent of governmental regulations and the means of safeguarding individual rights through fair administrative procedures and judicial control over administrative determination. Prerequisite: PSCI 200 or a course in Economics.

PSCI 530 Problems in Public Administration 3 or 4 hrs.
Consideration of issues and problems of current interest in the field of public administration. The course is intended to provide advanced work for undergraduates and to serve as an introduction to the field for graduate students without previous training in public administration.

PSCI 531 Administration in Local and Regional Governments 3 hrs.
The administrative organization, structure, procedure and forms of local units of government are analyzed.
PSCI 532 Administration in Developing Countries 3 hrs. This course compares public administration systems in a development context. It analyzes the role of the administrator in developing countries, notably the administrator's varied responsibilities as a career public official, and as an agent of change. The character of the development administrator as both a generalist and specialist is explored.

PSCI 534 Administrative Theory 3 hrs. A study of descriptive theories of organizational and administrative behavior relevant to governmental administrative agencies. Theories of complex formal organization, decisional theories and systems theories will be analyzed.

PSCI 535 The Politics of Governmental Budgeting and Finance 3 hrs. A survey of the political process of governmental budgeting and finance. Budget systems, including program planning and budgeting systems, are studied. The politics of taxation and other governmental revenues, including intergovernmental transfers, are studied for their impact on public policy choices.

PSCI 544 Political Change in Russia 3 hrs. An examination of processes of political change in Russia in areas of policy and structure. Past reform efforts in the former Soviet Union and Russia are studied, followed by an extensive inquiry into system change. The course relates the Soviet and Russian experience to the literature on political change and theories of comparative politics.

PSCI 549 Problems of Foreign Political Systems 3-4 hrs. Course will consider selected problems of the governments and political systems of Western and Eastern Europe, Asia, Africa, and Latin America. The specific problems, topics, and countries to be studied will be announced each semester. May be repeated for credit when topics vary.

PSCI 552 Studies in International Relations 3 hrs. Examines selected topics within the field of international relations. Topics will vary and will be announced each semester. May be repeated for credit when topics vary.

PSCI 553 United Nations 3 hrs. A study of the United Nations in action. Attention is focused on significant political problems confronting world organization, i.e. functional and dysfunctional aspects of the UN Charter; nationalism vs. internationalism within the UN; conflict resolution and UN peace-keeping efforts; specific UN accomplishments in maintaining a dynamic international equilibrium; UN weakness and the future of world organization.

PSCI 555 International Law 3 hrs. The theory, sources, development, and general principles of international law, and the relationship of law to the dynamics of international politics. Decisions of international and municipal tribunals and the practices of states will be used to demonstrate the basic rights and obligations of states in time of peace and war. Such topics as recognition of states, diplomatic practice, treaties and neutrality will also be discussed.

PSCI 562 Modern Democratic Theory 3 hrs. The course consists of two parts. First, a consideration of traditional democratic theories, and the criticism of these theories emanating from modern elitists such as Mosca, Michels, Pareto and Ostrogorski. Second, an analysis of the attempts by contemporary economists, political scientists, and sociologists to meet these criticisms by revising democratic theory.

PSCI 563 Theories of Revolution 4 hrs. Examines significant classical and contemporary theories of revolution with reference to both their analytical and normative implications.

PSCI 572 Computer Applications for Political Scientists 3 hrs. This course is designed to provide students in Political Science and Public Administration with a foundation in computer concepts and applications. They will learn to use application packages such as SPSS and DPL. The course includes computer exercises and a term project. Prerequisite: CS 105 or equivalent or consent of instructor.

PSCI 598 Studies in Political Science 1-4 hrs. An opportunity for advanced students with good scholastic records to pursue independently the study of some subject of interest to them. Subjects are chosen and arrangements made to suit the needs of individual students. Approved application required.

PSYCHOLOGY

Howard E. Farris, Chair
Galen J. Alessi
John Austin
Lisa E. Baker
Dale M. Brethower
Anna Kay Campbell
Alyce M. Dickinson
Krystal Erhardt
R. Wayne Fuqua
Bradley E. Hultena
Scott H. Kollins
Richard W. Malott
Jack L. Michael
Alan Poling
Malcolm H. Robertson
C. Richard Spates
Roger E. Ulrich
Lester W. Wright Jr.

Pre-Psychology Major (PPY)

ADMISSION REQUIREMENT

Any freshman or transfer student planning to pursue psychology as a major will be admitted as a pre-psychology student (PPY) and will work with a psychology advisor to develop a planned program. Admission as a major requires that the student complete PSY 100, 160, and 250, all with grades of "C" or better. Transfer students who present appropriate psychology courses will be evaluated and may be admitted on an individual basis directly into the program. Transfer students with no psychology courses will be required to take PSY 100, 160, and 250, and receive a grade of "C" or better in each course.

Application forms and additional information can be obtained from the departmental office or from a psychology advisor. Students who do not meet admission requirements will be informed of steps they can take to earn admission. Admission of students on a probationary status to the psychology major will be considered on an individual basis.

Baccalaureate Writing Requirement

Students who have chosen the Psychology major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

- PSY 330 Methodology of Behavior Analysis
- PSY 460 Survey of Behavior Analysis Research

Psychology Major

A minimum of nine (9) hours must be taken from the WMU Psychology Department and obtain a grade of "C" or better in any courses that count toward the major. Majors are required to satisfy College-Level Mathematics or Quantitative Reasoning Proficiency before registering for PSY 300.

34 hours

Introduction Core (9 hrs.)

- PSY 101 General Psychology . . . . . 3
- PSY 160 Child Psychology . . . . . 3
- PSY 250 Abnormal Psychology . . . . 3

Method and Theory Core (13 hrs.)

- PSY 300 Statistics for the Behavioral Sciences . . . . . 3
- PSY 330 Methodology of Behavior Analysis . . . . . 3
- PSY 360 Concepts and Principles of Behavior Analysis . . . . . 4
PSY 460 Survey of Behavior Analysis Research 3

Practicum or Laboratory Experience (3 hrs.)

Take one of the 3 hour practicum or laboratory courses

PSY 347 Practicum: Learning and Self-Management 3
PSY 357 Practicum: Special Populations 3
PSY 367 Practicum: Child Care 3
PSY 368 Laboratory in Experimental Analysis 3
PSY 377 Practicum: Child Psychology 3
PSY 378 Laboratory in Physiological Psychology 3
PSY 387 Practicum: Direct Instruction 3
PSY 397 Special Arranged Practicum in Psychology 3
PSY 578 Research Practicum Developmentally Disabled Population 3

Electives (9 hrs.)

PSY 362 Experimental Analysis of Behavior 3
PSY 372 Physiological Psychology 3
PSY 374 Toward Experimental Living 3
PSY 444 Industrial/Organizational Behavior Analysis 3
PSY 463 Management of Health-Related Behaviors 3
PSY 474 Experimental Social Psychology 3
PSY 513 Animal Behavior 3
PSY 517 Psychology of Learning for Teachers 3
PSY 518 Research in Stimulus Control and Perceptual Processes 3
PSY 524 Human Sexuality 3
PSY 526 Human Drug Use and Abuse 3
PSY 563 Behavioral Medicine 3
PSY 570 A Behavior Analysis Approach to the Area of Developmental Disability 3
PSY 595 History of Psychology 3

Acceptable minors: anthropology, biology, chemistry, communication, economics, English, linguistics, mathematics, philosophy, physics, political science, sociology, social work, and others approved by the department advisor.

Psychology Minor

A minimum of six (6) hours must be taken from the WMU Psychology Department and receive a grade of "C" or better in Psychology minor courses, PSY 100, 160, and 250, and obtain a grade of "C" or better in any courses that count toward the minor.

A minimum of 15 hours

PSY 100 General Psychology 3
PSY 160 Child Psychology 3
PSY 250 Abnormal Psychology 3

Approved electives: 344, 374, 424, 426, 463, 464, 474. 3 hours of practicum (347, 357, 367, 387, 397) can substitute for 3 hours of elective.

Honors Program in Psychology

The honors program is designed to promote an academic atmosphere of undergraduate students, graduate students and faculty in psychology. The requirements for the departmental honors program include:

1. The completion of a major in Psychology
2. A University grade point average of 3.5, and a department grade point average of 3.8.
3. Completion of PSY 499, Honors Project in Psychology (6 credit hours) and the preparation of an Honors Thesis.
4. The successful defense of the Honors Thesis before a departmental committee.
5. Participation in a professional apprenticeship program (2 credit hours).

Psychology Courses (PSY)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

PSY 100 General Psychology 3 hrs. Fall, Winter
An eclectic approach to a social and behavioral survey of major topics in psychology, including learning, motivation, intelligence, personality, mental illness, and social relations. Approved for General Education.

PSY 150 Introduction to Human Behavior 3 hrs.
An introduction to general psychology from the point of view of humanistic behaviorism: the use of the science of behavior to help people achieve their full potential as human beings. Emphasizes how the environment has a major influence on the way we are and how the environment can be changed so that we can become the kind of people we wish. Open to first year students.

PSY 155 Teaching Apprenticeship in Introductory Psychology 2-4 hrs.
A laboratory course in the instructional methods of teaching introductory psychology. Prerequisite: Consent of instructor. May be repeated for credit, but does not fulfill major/minor requirements.

PSY 160 Child Psychology 3 hrs. Fall, Winter
An introduction to behavior principles in the analysis of complex behavior with an emphasis upon early childhood learning and the techniques for enhancing children's development. Topics include mental retardation, behavioral problems in childhood, emotional development and language learning. Prerequisite: PSY 100.

PSY 165 Teaching Apprenticeship in Child Psychology 2-4 hrs.
A laboratory course in the instructional methods of teaching child psychology. Prerequisite: Consent of instructor. May be repeated for credit, but does not fulfill major/minor requirements.

PSY 197 Special Programs in Psychology 1-3 hrs.
The department of psychology offers special programs of study for students at academic risk in the University. The program follows an individualized curriculum which is supervised by advanced students enrolled in a practicum course.

PSY 250 Abnormal Psychology 3 hrs. Fall, Winter
An introduction to the description, classification and interpretation of human behavior labeled by society as "abnormal" with an emphasis on the social variables and environmental conditions related to the acquisition and persistence of such behavior. Prerequisite: PSY 100.

PSY 255 Teaching Apprenticeship in Abnormal and Social Psychology 2-4 hrs.
A laboratory course in the instructional methods of teaching abnormal psychology. May be repeated for credit, but does not fulfill major/minor requirements.

PSY 300 Statistics for the Behavioral Sciences 3 hrs. Fall, Winter
Interpretation and application of descriptive and inferential statistical techniques necessary in the understanding of data presentations in behavioral research. Includes: Measures of central tendency and variability, frequency distributions and graphic presentations, the normal curve, probability theory and the binomial, hypothesis testing, the t-test, chi square and correlation. Prerequisites: PSY 100 and MATH 109 or an equivalent score on the placement test offered by the Mathematics and Statistics department. MATH 109 must be completed with a "C" or better to qualify as a prerequisite for this course. Students must also satisfy the College-Level Mathematics or Quantitative Reasoning Proficiency before registering for PSY 300.

PSY 330 Methodology of Behavior Analysis 3 hrs.
An examination of the problems approached and of the methodologies utilized in applications of behavior analysis. Extensive readings in the recent literature of applied behavior analysis introduce the student to current issues in the field.

PSY 344 Organizational Psychology 3 hrs.
This course focuses on performance management and improvement techniques that are based on the principles of behavior psychology. Environmental change strategies are emphasized. While the course focuses on behavioral applications in the workplace, other theoretical orientations are surveyed. Topics covered include personnel management, employee motivation, job satisfaction, the effects of compensation practices on employee behavior, and leadership. Prerequisite: PSY 100.

PSY 345 Employee Assistance Program Organization and Change 3 hrs.
This course reviews strategies for organization management and change as relates to Employee Assistance Programs (EAPs). Emphasis is placed on methods of creating organization support systems and ways of customizing EAPs into existing organization structures. Topics include leadership, organization design, data analysis, and strategies for change and growth. Open only to Employee Assistance Academic Program majors. Prerequisite: PSY 100.

PSY 347 Practicum: Learning and Self-Management 3 hrs.
Supervised experience in the application of principles of behavior analysis to college learning and academic self-management. The site of this practicum is The Center for Research in Learning and Self-Management (Psychology Department). Prerequisites: PSY 100, PSY 160, PSY 250.

PSY 355 Teaching Apprenticeship in Statistics 2-4 hrs.
A laboratory course in the instructional methods of teaching elementary statistics. May be repeated for credit, but does not fulfill major/minor requirements.

PSY 357 Practicum with Special Populations 3 hrs.
Supervised experience in the application of principles of behavior analysis to special populations. The Croyden Avenue School, which is the site of this practicum, provides an educational program for the developmentally-disabled and the
multiply-handicapped. Students serve as tutors in behavior change and training programs. Prerequisite: PSY 160, PSY 250.

PSY 360 Concepts and Principles of Behavior Analysis
4 hrs.
Concepts and principles of behavior analysis are derived from basic human and non-human research. Empirical and theoretical issues related to habituation, respondent conditioning, operant conditioning, and the control of operant behavior by motivational and emotional variables. An introductory laboratory accompanying the lecture portion of the course.
Prerequisites: PSY 100, PSY 160, PSY 250.

PSY 362 Experimental Analysis of Behavior
3 hrs.
An advanced level coverage of respondent and operant behavior. There is an emphasis upon research design, the theoretical interpretation of data, experimental methodology and the techniques of response measurement. Prerequisite: PSY 300. Concurrent enrollment in PSY 368 is required.

PSY 368 Laboratory in Experimental Analysis
3 hrs.
An advanced laboratory emphasizing the variations in response measurement and experimental methodology in research areas within operant conditioning. Research design, data analysis and description, as well as professional writing are stressed. Concurrent enrollment in PSY 362 is required.

PSY 372 Physiological Psychology
3 hrs.
An introduction to physiology and its relationship to behavior, including brain behavior interactions, behaviorally induced chemical changes, and behavioral changes induced by chemical alterations. Lecture only. May be taken concurrently with PSY 378. A previous course in biology or chemistry is helpful but not required. Prerequisites: PSY 360.

PSY 374 Toward Experimental Living
3 hrs.
A comparison of complex social structures with an emphasis upon social ethics and the design of communities. Visits to experimental communities may be included. Prerequisite: 6 hours of psychology or permission of instructor.

PSY 377 Practicum in Child Psychology
3 hrs. Fall, Winter
Supervised experience in the application of the principles of behavior analysis to early childhood learning. The Child Development Center is the site of this practicum. The Center provides accelerated education, nutrition, health and physical education programs. Students learn the techniques of direct instruction and other programs while serving as apprentice teachers. Prerequisite: PSY 330.

PSY 378 Laboratory in Physiological Psychology
3 hrs.
An intermediate laboratory and companion to PSY 372 emphasizing the acquisition of laboratory techniques, surgical skills and research methodology in physiological psychology and brain behavior interactions. Laboratory procedures, research methodology, data analysis and professional writing are stressed. Concurrent enrollment in PSY 372 is required.

PSY 379 Practicum in Behavior Analysis in Education
3 hrs.
Supervised experience in the application of the techniques of behavior analysis to remedial education. Project HELP which is the site of this practicum, is designed to provide remedial education to school-age children in math and reading using the techniques of direct instruction. This course teaches the techniques of direct instruction and provides tutorial experience. Prerequisites: PSY 100, PSY 160, PSY 250.

PSY 396 Topical Studies in Psychology
1–3 hrs.
A course on selected topics in psychology. Topics may include basic science and applied aspects of the discipline. Permission of the instructor is required and may be repeated for credit. Course does not count on Psychology Major.

PSY 397 Practicum in Psychology
3 hrs.
Supervised experience at a community based mental health site as announced in the schedule of classes or as approved by the undergraduate advisor. Corresponding seminar sessions provide structure and integration of the experience with other practicum experience. This course may be repeated for credit with different experiences. Prerequisites: PSY 100, PSY 160, PSY 250.

PSY 398 Independent Study
1–5 hrs.
This course provides the undergraduate student with the opportunity for independent reading and/or research under the direction of a Department staff member. Written permission must be obtained on forms available in the Department office. May be repeated for credit up to 12 hours.

PSY 424 The Psychology of Human Sexuality
3 hrs.
This is a course for non-majors and for minors in Psychology only. It cannot be applied towards the requirements for the Psychology major. The course provides a topical survey of the area of human sexual functioning. Lectures are supplemented by directed discussions, invited guest presenters, and exercises designed to prompt students to explore their own assumptions and experiences with this aspect of human behavior. Topics include sex, sexuality, and reproduction. Prerequisite: PSY 100.

PSY 426 Introduction to Human Drug Use and Abuse
3 hrs.
This is a course for non-majors and for minors in Psychology only. It cannot be applied towards the requirements for the Psychology major. The course introduces the student to the action of several classes of recreational and medical drugs and provides an overview of the factors that influence drug use. Human drug use and abuse will be the primary focus, although non-human research findings will be discussed as well. Prerequisite: PSY 100.

PSY 444 Industrial/Organizational Behavior Analysis
3 hrs.
The course emphasizes employee performance management and analyses of work behavior that are based on the principles of behavioral psychology. Environmental and other change strategies will be emphasized. Topics include the measurement of work, personnel management techniques, how compensation practices influence employee behavior, work satisfaction, personnel selection, and the ethics of personnel management. This course is for majors only. Prerequisite: PSY 360.

PSY 460 Survey of Behavior Analysis Research
3 hrs.
An overview of diverse topics of behavioral analysis research and applications. Topics include, clinical psychology, child psychology, behavioral management, functional quality, environmental quality, disability, education and geriatrics. Prerequisite: PSY 330 and 360.

PSY 462 Individual, Group, and Family Treatment
3 hrs.
This course provides an overview of individual, group and family treatment modalities. Concepts, intervention strategies, and specific methods of current treatment models are presented through lecture, assigned reading, hand-outs, and film. Included also are three sessions on demonstration and practice of micro-counseling skills. Treatment focus is the employed adult whose job performance is adversely affected by mental health and/or substance abuse problems. Open only to Employee Assistance Academic Program majors. Prerequisite: PSY 250.

PSY 463 Management of Health-Related Behaviors
3 hrs.
A behavior analysis approach to the management of behaviors directly and indirectly affecting health. Emphasis will be placed on out-patient, public health applications and preventive approaches in health maintenance. Prerequisites: PSY 100.

PSY 464 Systems and Theories in Psychology
3 hrs.
A critical examination of the assumptions, methods and problems of several major schools of psychology: Structuralism, Functionalism, Associationism, Behaviorism, Gestalt Psychology and Psychoanalysis. Prerequisite: 3 hours of psychology.

PSY 474 Experimental Social Psychology
3 hrs.
Methodology of research with groups of animals and humans with emphasis upon design, application and ethical considerations. Prerequisites: PSY 100, PSY 160, PSY 260.

PSY 499 Honors Projects in Psychology
1–5 hrs.
Independent study and research projects completed under the supervision of a faculty member and coordinated with the Department Honors Program. Prerequisite: Permission of instructor.

All 500 level courses in the Department of Psychology have a prerequisite of junior level status and of PSY 360 (Concepts of Principles of Behavior Analysis) and PSY 330 (Methodology of Behavior Analysis). Exceptions to this requirement must be approved by the course instructor on a case-by-case basis.

PSY 510 Advanced General Psychology
3 hrs.
Readings, lecture and discussion designed to introduce non-majors in psychology to modern behavior theory. Emphasis will be upon human behavior, both normal and abnormal, with a significant portion of the course devoted to the higher cognitive processes. Prerequisite: Permission of instructor.

PSY 513 Research in Animal Behavior
3 hrs.
Research in various areas of animal behavior. An individual research project is required with emphasis on animal learning processes. Research design, data collection, analysis and reporting are included.

PSY 517 Psychology of Learning for Teachers
3 hrs. Fall, Winter
Designed to teach the principles of behavior and the application of these principles to teaching. Topics include the use of behavior principles in the development of objectives, selection and preparation of instructional material, classroom management and incentive motivation, behavior change, performance contracting and program evaluation. Practical application is stressed.
PSY 518 Stimulus Control and Perceptual Processes
3 hrs.
An examination of the literature surveying sensory and perceptual processes with an emphasis upon the research methodology in, and theoretical interpretation of data from studies of stimulus control and discrimination in non-human organisms. Prerequisite: 9 hours of psychology or permission of instructor.

PSY 519 Corrective and Remedial Teaching
3 hrs.
An introduction to and survey of various content skills, curriculum approaches and special teaching techniques used in elementary school reading and mathematics instruction. Designed primarily for prospective school psychologists. Focus is on academic skill content, sequencing of skill hierarchies, devising short term educational plans to teach specific skills and evaluating the effectiveness of such plans. Prerequisite: Graduate standing in psychology, education or permission of instructor.

PSY 524 Human Sexuality
3 hrs. Fall
Discussion of those human behaviors concerned with sex, sexuality and reproduction. Consideration is given to the anatomical and psychological properties of sexual functioning in male and female. Emphasis is placed upon the sexual response cycle as described by Masters and Johnson. The course is not intended to provide therapy training.

PSY 526 Human Drug Use and Abuse
3 hrs.
The course provides a general overview of basic pharmacological principles, discusses the behavioral and physiological mechanisms of action of several classes of medicinal and recreational drugs, and surveys the factors thought to contribute to responsible and irresponsible drug intake. Although human drug use and abuse will be the primary focus of the course, non-human research findings will be emphasized where appropriate.

PSY 535 Instrumentation and Computer Use in Psychology
3 hrs.
A survey of problems of response measurement in experimentation. Lecture and laboratory. May be repeated for credit.

PSY 560 Behavioral Medicine
3 hrs.
Application of behavioral technology to medical patients with emphasis on in-patient treatment. Sample topics include bio-feedback, pain control, compliance with medical regimen and issues of work in a medical setting.

PSY 570 A Behavior Analysis Approach to the Area of Developmental Disability
3 hrs.
Topics will include: Historical background, assessment, training and legal implications of treatment.

PSY 578 Research Practicum: Developmentally Disabled Population
3 hrs.
Supervised experience at the Croyden Avenue School which offers an educational program for the developmentally disabled. This course involves a variety of problems in behavior change and learning which can be studied at the school. The research problems are carefully selected to be beneficial to the client and provide appropriate experience for the student. Data collection and report writing are stressed. Prerequisite: PSY 570 or concurrent enrollment.

PSY 595 History of Psychology
3 hrs.
The historical and philosophical foundations of contemporary American psychology.

PSY 597 Topical Studies in Psychology
2–4 hrs.
A survey and discussion of selected research topics of current interest. Topics may include both basic science and applied aspects of the discipline. Permission of instructor. Courses may be repeated for credit although the total number of credits may be limited by the degree program. Students should consult the program advisor. Courses may include the following:

Parent Training
Studies in Industrial Psychology
Computer Assisted Instruction
Theory of Direct Instruction

PSY 598 Special Projects in Psychology
1–5 hrs.
This course provides the graduate student with the opportunity for independent reading and/or research under the direction of a faculty member. Graduate standing and permission of instructor. May be repeated for credit, although the total number of hours in a degree program may not exceed 5 hours.

PSY 599 Practicum in Psychology
2–4 hrs.
In-depth training in the application of the principles of behavior to a specific and restricted problem area in the discipline. The practical application is often identified by the location of the research site or professional service agency published in the Schedule of Classes. Each hour of credit requires 100 clock hours. May be repeated for credit although number of credits may be limited by program requirements. Written permission must be obtained from the department.

PUBLIC AFFAIRS AND ADMINISTRATION

Ralph C. Chandler, Director
Todd Dicker
Susan B. Hannah
Peter Kobrak
Robert A. Peters
Kathleen M. Reding
James A. Visser

The School of Public Affairs and Administration offers courses, seminars, and workshops designed to prepare Master of Public Administration (MPA) and Doctor of Public Administration (DPA) degree candidates for leadership positions with public and independent sector agencies.

Public Affairs and Administration (PADM)

Undergraduates with senior status in appropriate major fields, may enroll in 500-level courses with prior approval of the student's advisor or have the consent of the program director.

PADM 532 Program Planning and Proposal Writing
3 hrs.
This course seeks to build skill in program planning, program management, and proposal writing. The first part of this course will be devoted to the grantsmanship process, including how to: formulate and promote a project concept; prepare the project proposal; submit the project proposal; and follow-up after acceptance or rejection of the proposal. Emphasis will be placed upon the project proposal as an integral component of agency planning, program management, and assessment activities, from both grantor and grantee perspectives. In the second part of this course each participant will prepare a project proposal.

PADM 572 Computer Applications in Administration
3 hrs.
Administrators at all levels increasingly rely upon computers to perform the tasks for which they are responsible. Whether to prepare reports, access data, or communicate with others, administrators at all levels of the organizational hierarchy are expected to possess a certain minimum facility with this technology. In this introductory technical core course, MPA degree candidates will become proficient in the administrative uses of computers.

PADM 598 Readings in Public Administration
1–3 hrs.
A program of independent study to provide the well qualified MPA candidate with an opportunity to explore in-depth a topic or problem of interest under the guidance of a faculty member. The end product of this effort may be an annotated bibliography, a bibliographic essay, or a major paper. Planning a topic for investigation is a joint responsibility of the candidate and supervising faculty. Approval is contingent upon the merits of the proposal. Prerequisite: Consent of both instructor and School Director.

PADM 599 Topics in Public Administration
1–4 hrs.
A variable topic course dealing with particular issues of interest and concern to students of public affairs and administration. Since content varies, students are advised to read course descriptions distributed by the School. The course may vary in the number of credit hours awarded and may last more or less than a semester's length.
SCIENCE STUDIES

Larry Oppliger, Chair
Janice Gobert
Robert S. Halfner
David Hargrave
Robert H. Poel
Kamlesh Sharma
Visho Sharma
Michael D. Swords

The Department of Science Studies has three components: environmental studies, science education, and interdisciplinary studies. Each one of these has a separate mission, but they share a common goal: the study of science and the impact of science on the human condition. Faculty in the three components, thus, try to:

1. assist students in developing the ability to think critically, seek knowledge, and apply knowledge in decision making;
2. help students develop confidence in their ability to make judgements while acquiring a willingness to reconsider their judgements in the light of new insights, information, and values;
3. expose students to the scientific mode of inquiry and encourage them to develop an interdisciplinary perspective; and
4. help students develop a responsible awareness of themselves as human beings living in a variety of social and physical environments, and an awareness that each set of those social-physical environments is interrelated in an increasingly interdependent world.

The faculty of the department has developed:

1. graduate programs in science education leading to Master of Arts and Doctor of Philosophy degrees; and
2. individual courses in meeting the University General Education and Liberal Education requirements.
3. undergraduate programs in environmental studies leading to an EVS Major, a Teaching Minor, and a Non-Teaching Minor;

Science Education

The graduate programs in science education are described in the Graduate Catalog. In addition, the department offers science courses for General Education, Liberal Education, and for those students majoring in education.

The department houses the Center for Science Education, which offers many in-service workshops and educational opportunities for area teachers, and Science and Mathematics Program Improvement (SAMP), which conducts client centered, user friendly evaluations, program development projects, and technical assistance.

Interdisciplinary Studies

The department offers interdisciplinary courses most of which are designed to contribute to the general education of the University students.

Environmental Studies

ADVISING

Given the interdisciplinary nature of the program, it is very important that students work with one of the program advisors on an ongoing basis. Enrollment in ENVS courses is controlled by the advisors and is inaccessible to students using the Touchtone registration system. Program advisors are also available to help students clarify their career goals and assist them in their choice of a second, disciplinary major. Information about internships, international experiences, summer jobs, graduate programs, and career opportunities is also available in the program office.

ACADEMIC STANDARDS

Students in all options of the Environmental Studies Program must earn at least a grade of "C" in all courses counted for their major/minor.

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen an Environmental Studies major will satisfy the Baccalaureate Writing Requirement by successfully completing ENVS 320 Major Environmental Writings.

LIBERAL EDUCATION/GENERAL EDUCATION REQUIREMENTS

Beginning Fall 1996, students who successfully complete the Environmental Studies program will be deemed to have satisfied the criteria for Areas V, VI and VII of the new General Education requirements (limited to 10 hours effective Fall 1996).

MAJOR

Since the Environmental Studies Program is broadly interdisciplinary in scope, students opting for a major in the program are required to take a second major, chosen from any college of the University at the student’s discretion, to provide requisite depth in a particular discipline.

Those choosing their disciplinary major from within the College of Arts and Sciences have the option of selecting either major as their first or degree major. If the Environmental Studies major is selected as the degree major, the student will be required to either have a Bachelor of Science or Bachelor of Arts degree in Environmental Studies depending on whether their other major is in one of the sciences or not. Students opting to have the disciplinary major be their first or degree major will graduate with a Bachelor’s degree in that discipline.

Those choosing a disciplinary major from outside the College of Arts and Sciences must consider that disciplinary major to be their first degree major, with the EVS major being their second major.

In all instances the student must fulfill the following program requirements:

1. Successful completion of a minimum of 35 semester hours of approved course work in ENVS courses as listed below.
2. Selection of a second, disciplinary major, appropriate to the student’s career goals.

In addition to these program requirements, students selecting the EVS major as their first major must satisfy the College of Arts and Sciences curriculum requirements as well as all University degree requirements. Those selecting the disciplinary major as their first major must satisfy the curriculum requirements identified by the disciplinary major as well as all University degree requirements.

ENVIRONMENTAL STUDIES MAJOR

35–36 hrs. plus cognates

1. PROGRAM INTRODUCTION

ENVS 110 Introduction to Environmental Studies 3

2. CONCEPTUAL FOUNDATIONS

Prerequisites for the courses below is ENVS 110 or approval of a program advisor.

Environmental Studies 3

Sustainability 3

Science 3

Change 3

Projects 1–4

ENV 210 Environmental Ecology 3

ENV 220 Environmental Physical Science 4

ENV 230 Environmental Earth Science 3

ENV 240 Cultures and Global Change 3

ENV 250 Political Economy of the Environment 3

3. SKILLS AND VISION

Prerequisites for all courses below are ENVS 110 and all 200-level courses listed above or approval of a program advisor.

ENV 320 Major Environmental Writings (should be taken before ENVS 360) 2

ENV 350 Environmental Problem Solving 4

ENV 360 Values and Sustainable Society 4

4. APPLICATIONS

A minimum of four semester hours required from the 400-level courses listed below. Courses taken from any college of the University at the student’s discretion, to provide requisite depth in a particular discipline.

Prerequisites for the courses below are ENVS 350 and ENVS 360 or approval of a program advisor.

ENV 401 Selected Environmental Topics 3

ENV 410 Appropriate Technology and Sustainability 3

ENV 420 Internship 1–3

ENV 430 Environmental Projects 1–4

ENV 440 Field Experience 1–4

5. CAPSTONE

Prerequisites are ENVS 350 and ENVS 360 or approval of a program advisor.

ENV 450 Senior Seminar in Environmental Studies 3

6. COGNATES

In addition to the core courses listed above, each student opting to take an Environmental Studies major will be required to take a minimum of one cognate course from a list of departmental courses identified as potential cognates for specific dual-major packages. The course chosen must be approved by a program advisor.

MINORS

The Environmental Studies Program offers both a non-teaching and a teaching minor. These minors are offered for students who are unable to pursue a major but still seek some insights into the nature of environmental concerns.

THE NON-TEACHING MINOR

22–23 hrs.

Those electing a non-teaching minor in Environmental Studies must successfully complete a minimum of 22 semester hours of approved course work within the program.

1. PROGRAM INTRODUCTION

ENVS 110 Introduction to Environmental Studies 3

2. CONCEPTUAL FOUNDATIONS

Prerequisite for all five courses below is ENVS 110 or approval of a program advisor. Students whose disciplinary major is in Cultural Anthropology, Biology, Chemistry, Environmental Resource Management, or Political Science may, with the approval of a program advisor, replace the appropriate course from the five listed below with either ENVS 401 or ENVS 410.

ENV 210 Environmental Ecology 3

ENV 220 Environmental Physical Science 4

ENV 230 Environmental Earth Science 3

ENV 240 Cultures and Global Change 3

ENV 250 Political Economy of the Environment 3
ENVS 250 Political Economy of the Environment 3 hrs.

3. SKILLS AND VISION
Prerequisites are ENVS 110 and all 200-level courses listed above or approval of a program advisor.
ENVS 360 Values and Sustainable Society 4 hrs.

THE TEACHING MINOR
24 hrs. minimum

This option is available only to those enrolled in the secondary education curriculum and having a major in an approved science discipline. Those electing a teaching minor in Environmental Studies must successfully complete all of the requirements of the non-teaching minor (see above) plus the following:

1. PROGRAM INTRODUCTION
ENVS 110 Introduction to Environmental Studies 3 hrs.

2. CONCEPTUAL FOUNDATIONS
Prerequisite for all five courses below is ENVS 110 or approval of a program advisor. Students may, with the approval of a program advisor, substitute ENVS 401 AND ENVS 410 for the science course below that is in their major discipline.
ENVS 210 Environmental Ecology 3 hrs.
ENVS 220 Environmental Physical Science 4 hrs.
ENVS 230 Environmental Earth Science 4 hrs.
ENVS 240 Cultures and Global Change 3 hrs.
ENVS 250 Political Economy of the Environment 3 hrs.

3. SKILLS AND VISION
Prerequisite for all courses below is ENVS 110 or approval of a program advisor; substitute ENVS 300 for ENVS 110 or approval of a program advisor:
ENVS 360 Values and Sustainable Society 4 hrs.

An approved environmental/outdoor education course chosen in consultation with a program advisor 2-4 hrs.

Environmental Studies Courses (ENVS)

ENVS 110 Introduction to Environmental Studies 3 hrs.

This course is an interdisciplinary introduction to the study of environmental problems open only to those enrolled as minors in the Environmental Studies Program. Through the use of case studies and other means, students will be introduced to the broad array of local, regional and global environmental problems confronting humankind. They will learn to identify the many scientific, technological, social/cultural, economic, political, ethical and other elements in those problems.

ENVS 210 Environmental Ecology 3 hrs.

This course focuses upon the study of living systems. It will be open only to those enrolled as minors or majors in the Environmental Studies Program. Through the use of case studies and other means, students will be introduced to the broad array of local, regional and global environmental problems confronting humankind. They will learn to identify the many scientific, technological, social/cultural, economic, political, ethical and other elements in those problems.

ENVS 220 Environmental Physical Science 4 hrs.

This course develops a foundation of physical and chemical principles sufficient to appreciate how these principles affect environmental issues. Emphasis is on nuclear, atomic and molecular properties of matter which determine whether a substance is considered to be a significant pollutant. The concept is developed that the laws of physics and chemistry constrain our capability to fashion a sustainable modern society. Prerequisites: ENVS 110 or approval of a program advisor; MATH 111 or equivalent.
ENVS 230 Environmental Earth Science 3 hrs.

This course will cover the major concepts of the earth sciences and stress the importance of understanding these concepts when addressing environmental issues. The topics covered include planetary science, the atmosphere, the oceans, land masses, and important surface and subsurface processes. Prerequisite: ENVS 110 or approval of a program advisor.

ENVS 240 Cultures and Global Change 3 hrs.

This course reviews the political and economic assumptions underlying twentieth century political and economic systems. It analyzes the political economy of environmental policy-making and regulation in the United States. It discusses emerging alternatives that are based upon principles of sustainability and the challenges involved in institutionalizing them. Prerequisite: ENVS 110 or approval of a program advisor.
ENVS 250 Political Economy of the Environment 3 hrs.

This course explores the political and economic assumptions underlying twentieth century political and economic systems. It analyzes the political economy of environmental policy-making and regulation in the United States. It discusses emerging alternatives that are based upon principles of sustainability and the challenges involved in institutionalizing them. Prerequisite: ENVS 110 or approval of a program advisor.
ENVS 300 Environment, Technology, and Values 4 hrs.

An introduction to the physical and biological bases of the environment and the historical, anthropological relation of Homo Sapiens within those contexts. The impacts of the rise of modern industrial societies and human populations with an examination of the driving values causing and caused by these developments, the Environmental movement and the alternative projected futures. ENVS 300 will not count toward an environmental studies major or minor. Students may not enroll in ENVS 300 after successfully completing ENVS 110.
ENVS 320 Major Environmental Writings 2 hrs.

This course uses selected readings of classical works in the environmental field, together with current works of significant importance, to introduce students to understanding the environment and environmentally responsible courses of human action. Course satisfies the baccalaureate level writing requirement. Prerequisite: Required conceptual foundations courses or approval of a program advisor.
ENVS 350 Environmental Problem Solving 4 hrs.

This course develops an approach to solving complex problems, together with specific skills for analyzing problem situations and making decisions. It introduces students to the structure and behavior of complex systems and to the elementary techniques for systems analysis. It also explores the elements of, and problems surrounding, risk/benefit analysis utilized in decision making. Prerequisite: Required conceptual foundations courses or approval of a program advisor.
ENVS 360 Values and Sustainable Society 4 hrs.

This course explores and seeks to clarify individual, group, and social values as they relate to the decisions that we make and to determine the impact of those decisions on the sustainability of our natural and social systems. It pursues the examination of historical and literary concepts of sustainable societies, and examines varying definitions and models of sustainability and the underlying values and elements which may favor sustainable futures. Prerequisite: Required conceptual foundations courses or approval of a program advisor.
ENVS 401 Selected Environmental Topics 3 hrs.

An intensive, focused study of an environmental topic such as solid waste management and resource recovery, energy management, environmental law, or environmental communications. Topic to be announced in the Schedule of Classes. This course may be repeated for credit with a second topic. Prerequisite: Required conceptual foundations courses or approval of a program advisor.
ENVS 410 Appropriate Technologies and Sustainability 3 hrs.

In the light of the debates on sustainability, the course analyzes how technologies and technological systems have interacted with and influenced social change in both industrial countries and the Third World. Criteria for assessing the appropriateness and sustainability of various technologies and technological systems in different settings will be discussed and mini-assessments will be conducted. Prerequisite: Required conceptual foundations courses or approval of a program advisor.
ENVS 420 Internship 1-3 hrs.

The environmental internship gives students the opportunity to gain practical experience in a particular area of environmental activity, and to work with professional staff who will gain "hands on" knowledge and add an important non-academic dimension to their resumes. Prerequisite: Approval of program advisor.
ENVS 430 Environmental Projects 1-4 hrs.

This course is designed for students who wish to carry on advanced interdisciplinary work in Environmental Studies under the direction of a faculty member. Work will be geared to a single project in which there is outside investigation, research, and/or workshop experience. Students selecting this course will work on projects especially designed for their programs. They will be asked to identify a problem, outline an investigatory approach, and consider paths to solving the problem. Prerequisite: Consent of instructor and approval of program advisor.
ENVS 440 Field Experience 1-4 hrs.

This course is a vehicle to provide academic credit for students participating in legitimate off-campus environmental field programs and foreign exchange programs. The course is repeatable for up to eight hours of academic credit. Prerequisite: Approval of a program advisor.
Science Courses (SCI)

A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

SCI 132 Aims and Achievements of Science 4 hrs.

This course is designed as a broad philosophical and historical view about science as a human endeavor. It examines the aims or goals of science and compares these to the achievements of the scientific enterprise, as well as demonstrating the methods of science and other methods of obtaining reliable information. The course, designed for the non-scientist, is a non-mathematical examination of science and the way it affects and is affected by culture. The interrelationships between science and other disciplines and some of the important issues of our day are discussed.

SCI 133 Issues in Social Biology 4 hrs.

This course involves a study of some recent advances in biology and medicine, their social and ethical implications, and the public-policy problems raised by such questions as organ transplantation, drugs, population control and size, genetic engineering, pollution, and the ethical and moral concerns implicit in these.

SCI 170 Life Science for Elementary Educators I 3 hrs.

This is a laboratory-based course specifically designed for prospective elementary teachers. The objectives of the course are to aid students in developing meaningful and fundamental understanding of key biological concepts and their interrelations; to provide students with open-ended problem solving environments that facilitate insight in the nature of science as an intellectual activity; to explore alternate conceptions of scientific phenomena; to help students develop more positive attitudes about science and increase their confidence in their ability to do science.

SCI 180 Physical Science for Elementary Educators I 3 hrs.

This is a laboratory-based course specifically designed for prospective elementary teachers. The objectives of the course are to aid students in developing meaningful and functional understanding of key physical concepts and their interrelations; to provide students with open-ended problem solving environments that facilitate insight in the nature of science as an intellectual activity; to explore alternate conceptions of scientific phenomena; to help students develop more positive attitudes about science and increase their confidence in their ability to do science.

SCI 190 Earth Science for Elementary Educators I 3 hrs.

This is a laboratory-based course specifically designed for prospective elementary teachers. The objectives of the course are to aid students in developing meaningful and functional understanding of key earth science concepts and their interrelations; to provide students with open-ended problem solving environments that facilitate insight in the nature of science as an intellectual activity; to explore alternate conceptions of scientific phenomena; to help students develop more positive attitudes about science and increase their confidence in their ability to do science.

SCI 270 Life Science for Elementary Educators II 3 hrs.

This laboratory-based course is a continuation of SCI 170 and is specifically designed for prospective elementary teachers. The objectives of the course are to aid students in developing meaningful and functional understanding of key biological concepts and their interrelations; to provide students with open-ended problem solving environments that facilitate insight in the nature of science as an intellectual activity; to explore alternate conceptions of scientific phenomena; to help students develop more positive attitudes about science and increase their confidence in their ability to do science. Prerequisite: SCI 170.

SCI 280 Physical Science for Elementary Educators II 3 hrs.

This laboratory-based course is a continuation of SCI 180 and is specifically designed for prospective elementary teachers. The objectives of the course are to aid students in developing meaningful and functional understanding of key physics concepts and their interrelations; to provide students with open-ended problem solving environments that facilitate insight in the nature of science as an intellectual activity; to explore alternate conceptions of scientific phenomena; to help students develop more positive attitudes about science and increase their confidence in their ability to do science. Prerequisite: SCI 180.

SCI 290 Earth Science for Elementary Educators II 3 hrs.

This laboratory-based course is a continuation of SCI 190 and is specifically designed for prospective elementary teachers. The objectives of the course are to aid students in developing meaningful and functional understanding of key earth science concepts and their interrelations; to provide students with open-ended problem solving environments that facilitate insight in the nature of science as an intellectual activity; to explore alternate conceptions of scientific phenomena; to help students develop more positive attitudes about science and increase their confidence in their ability to do science. Prerequisite: SCI 190.

SCI 404 Teaching of Secondary Science 3 hrs.

This course addresses the topics of teaching and learning of science at the secondary level. It is designed for those in secondary education who intend to be certified to teach the earth, life, or physical sciences (physics and chemistry) and focuses on the issue of how students learn science concepts and problem-solving skills in meaningful ways. The course develops models of effective instructional strategies, is designed to promote student learning and understanding of key scientific concepts and processes. Practical methods for demonstrating, using models, planning laboratory experiences, managing science equipment, and safety concerns are developed and discussed. Students also work in discipline-specific groups to address issues unique to that area of science and the science classroom. Prerequisites: 15 hours of science in a certifiable science discipline and ED 302 which may be taken concurrently with this course. Cross listed with BIOS 404, CHEM 404, GEOI 404, and PHYS 404.

SCI 570 Life Science Workshop for Teachers 1-3 hrs.

This course will involve participants in several activities especially designed to help them achieve an understanding of some of the important concepts of biology. The course is designed and taught to address the needs of K-12 teachers. It is a variable topics course and may be repeated for credit if different topics are involved. Intended for delivery in one-to-two-week workshop format. Prerequisites: Teacher certification or baccalaureate plus work toward certification.

SCI 580 Chemistry Workshop for Teachers 1-3 hrs.

This course will involve participants in several activities especially designed to help them achieve an understanding of some of the important concepts of chemistry. The course is designed and taught to address the needs of K-12 teachers. It is a variable topics course and may be repeated for credit if different topics are involved. Intended for delivery in one-to-two-week workshop format. Prerequisites: Teacher certification or baccalaureate plus work toward certification.

SCI 585 Physics Workshop for Teachers 1-3 hrs.

This course will involve participants in several activities especially designed to help them achieve an understanding of some of the important concepts of physics. The course is designed and taught to address the needs of K-12 teachers. It is a variable topics course and may be repeated for credit if different topics are involved. Intended for delivery in one-to-two-week workshop format. Prerequisites: Teacher certification or baccalaureate plus work toward certification.

SCI 590 Earth Science Workshop for Teachers 1-3 hrs.

This course will involve participants in several activities especially designed to help them achieve an understanding of some of the important concepts of earth science. The course is designed and taught to address the needs of K-12 teachers. It is a variable topics course and may be repeated for credit if different topics are involved. Intended for delivery in one-to-two-week workshop format. Prerequisites: Teacher certification or baccalaureate plus work toward certification.

SCI 598 Readings in Science 1-4 hrs.

To be used by students seeking work in topics not otherwise available. The student is limited to no more than four hours in all Reading courses and work must be completed under a member of the graduate faculty. Prerequisites: 415.
SOCIAL SCIENCE TEACHING MINORS

See “Interdisciplinary Programs” in the College of Arts and Sciences.

SOCIOLOGY

Lewis Walker, Chair
Paula Brush
Susan Caringella-MacDonald
Susan M. Carlson
Susan L. Caulfield
Neale R. Chumbler
Charles E. Crawford
Douglas V. Davidson
Thomas E. Ford
David J. Hartmann
Ronald C. Kramer
Richard R. MacDonald
Gerald Markle
Ellen Page-Robin
Herbert L. Smith
Zoann Snyder-Joy
Subhash R. Sonnad
Lawrence L. Tyler
Thomas L. Van Valey
Morton O. Wagenfeld
Robert Wair
Paul Wienir

Courses are designed to give students a better understanding of the significant factors and processes of modern life, to provide study useful for particular applied fields, such as social work, criminal justice, market research, opinion polling, city, state, and federal governmental service, and social research, to meet the needs of students preparing to teach in the social science field, and to prepare students for graduate work in sociology or criminal justice.

The Kercher Center for Social Research, as the research arm of the department, provides facilities and services available to students as well as faculty for instructional and research purposes. The center maintains computer and other research facilities that are used in research course instruction. Research conducted through the center has dealt with subjects such as: criminal justice, marital roles, race relations, voting behavior, alcoholism, mental health, demography, and education.

Honors Program

Students in sociology and criminal justice may participate in the department honors program in three ways:
1. Membership in Alpha Kappa Delta, the national sociology honorary society. AKD is open to all students who have completed at least ten hours in sociology with a grade point average of 3.0 or better, and whose overall average is at least 3.0.
2. Leonard C. Kercher Fund Awards are made each year for outstanding student achievement. Dr. Kercher was head of the department from 1940 to 1972.
3. Membership in Alpha Phi Sigma, the national criminal justice honor society. Alpha Phi Sigma is open to all criminal justice students who have completed at least one third of the credit hours required for graduation with an overall grade point average of 3.0 or better, and whose criminal justice average is at least 3.2.

Further information and application forms may be obtained at the Sociology Office, 2420 Sangren Hall.

Advising

DEPARTMENT ADVISOR
2407 Sangren Hall, 387–5286. Students must consult the department advisor for major/minor slips in Sociology, Criminal Justice, and the Social Psychology Concentration and for the evaluation of transfer credits, or for any other questions involving majors or minors.

Undergraduate Assistantships

Students interested in becoming more involved in the department's activities and projects may wish to apply for undergraduate assistantships which are available fall and winter semesters. Department assistants receive a moderate stipend and are assigned to work for a faculty member or department project. Applicants for these awards are also considered for the Kercher Award. For further information and application forms, see the department advisor.

Baccalaureate Writing Requirement

Students who have chosen the Sociology major will satisfy the Baccalaureate Writing Requirement by successfully completing SOC 456 Social Stratification.

Students who have chosen the Criminal Justice major will satisfy the Baccalaureate Writing Requirement by successfully completing SOC 466 Advanced Criminology.

Sociology Major

A major in sociology consists of a minimum of 30 hours of coursework in sociology. SOC 200, 300, 320, 382, 383, and 456 are required. Students may choose their electives from the many offerings in the Department. At least two of the elective courses must be 300–500 level. Only one 100-level course may be used (SOC 182 is not an allowable elective). Limitations include: (1) A maximum of 12 hours transferred from a two-year institution may be included; (2) at least 9 hours must be taken at Western Michigan University; (3) no more than one course at the 100-level may be included. Any variance of the above requirements must be approved by the Undergraduate Advisor, 2407 Sangren Hall.

Transfer students should see the department advisor, since any transfer credit in sociology without a stated equivalent must be evaluated by the department if it is to apply toward a sociology major or minor.

Sociology Major, Accelerated BA/MA Program

This program is intended for the exceptional sociology major who intends to pursue a disciplinary masters degree in sociology at Western Michigan University. It is designed to accelerate progress toward the attainment of the disciplinary masters degree in sociology.

Prerequisites include:
1. application during the second semester of junior standing;
2. declared sociology major; and
3. recommended 3.4 GPA overall, based on at least 30 hours at WMU.

The program requires completion of all requirements of the Sociology major with this difference: SOC 607 and one 500-level sociology course be taken during the junior year and SOC 602, or SOC 603, or SOC 651 and one additional 600-level sociology course be taken during the senior year as part of the thirty-hour minimum requirement for the Sociology Major.

Applicants will be considered for this program by evaluation by the Department of Sociology. Upon completion of the BA the participant will apply for admission to the MA program in Sociology through standard procedures.
SOCIOLOGY MINOR

A minor in sociology consists of 18 hours of course work. SOC 200 and 210 are required. The balance of the required courses may be selected by the student, with the following limitations: (1) A maximum of 9 hours transferred from a two-year institution may be included; (2) at least 6 hours must be at the 300 level or above; (3) no more than one 100-level course may be included. Minor slips are required.

CRIMINAL JUSTICE MAJOR (33 hours)

Required Prerequisites

The following courses are required before taking any of the core courses. These hours are not included in the 33 hour requirement for the major.

SOC 200 Principles of Sociology (3 hrs.)
SOC 210 Modern Social Problems (3 hrs.)

Writing Expectation

Students should have completed ENGL 105 or equivalent and write at the college level before enrolling in the following advanced courses.

Core Courses

All of the following courses (22 hours) are required. It is important to check with the advisor so courses are taken in proper sequence.

SOC 362 Criminology (3 hrs.)
SOC 363 Criminal Justice Process (3 hrs.)
SOC 364 Sociology of Law Enforcement (3 hrs.)
SOC 365 Correctional Process (3 hrs.)
SOC 384 Criminal Law and Procedure (4 hrs.)
SOC 384 Juvenile Delinquency (3 hrs.)
SOC 466 Advanced Criminology (3 hrs.)

Research Methods Requirement

The following is required:

SOC 382 Methods of Sociological Inquiry (3 hrs.)

Electives

To complete the required total of 33 hours, students may take any of the following courses.

CONTEMPORARY ISSUES IN SOCIOLOGY AND CRIMINOLOGY

SOC 314 Crime and Relations (3 hrs.)
SOC 320 Introduction to Social Psychology (3 hrs.)
SOC 412 Child Abuse (3 hrs.)
SOC 456 Social Stratification (3 hrs.)
SOC 485 Special Topics in Sociology and Criminal Justice (when applicable) (3 hrs.)
SOC 560 Corporate and Governmental Crime (3 hrs.)
SOC 561 Violence and the U.S. Society (3 hrs.)
SOC 562 Victimology (3 hrs.)
SOC 563 Gender and Justice (3 hrs.)
SOC 568 Race, Ethnicity, and Justice (3 hrs.)

BAS 300 Black Experience (3 hrs.)
CORRECTIONS
SOC 465 Non-Institutional Corrections (3 hrs.)

CRIMINAL JUSTICE INTERNSHIP AND DIRECTED STUDY
SOC 496 Criminal Justice Internship (1-6 hrs.)
SOC 598 Directed Individual Study (1-6 hrs.)

SPECIAL LAW ENFORCEMENT CERTIFICATION OPTION

Students have the option to enroll in the Law Enforcement Certification Program in cooperation with the Kent Valley Community College (KVCC). Application and preliminary screening are required. Students are required to track in the program during the last two semesters at WMU. (See advisor for further information.)

Required courses in the Tracking Program include:

SOC 261 Law Enforcement Certification Topics include: Criminal Investigation (4 hrs.)
Criminal Law and Procedure (4 hrs.)
Emergency Vehicle Operation (2 hrs.)
Firearms (3 hrs.)
Fundamentals of Marksmanship (2 hrs.)
First Responders for Law Enforcement (3 hrs.)
Patrol Procedures (4 hrs.)
Police Physical Skills (4 hrs.)

Practical Problems (4 hrs.)
Police Physical Skills (4 hrs.)

Social Psychology

Social Psychology is the study of the impact of group life on individual behavior, thought, and personality development. Training in social psychology provides a valuable background for a variety of positions in human service organizations and can provide an excellent theoretical foundation for graduate work in more applied fields such as social work, counseling, public administration and criminology. Since this is a concentration, students cannot major/minor in this concentration and a sociology major/minor.

MAJOR REQUIREMENTS

SOC 200, 300, 320, 382, 383, and 456 are required. Three (3) of the following electives are required:
SOC 412, 421, 422, 479, and 520. Students must take at least three (3) hours of other electives within the sociology department.

MINOR REQUIREMENTS

SOC 200, 210, and 320. Two (2) of the following electives are required:
SOC 412, 421, 422, 479, and 520. Students may include any other sociology course to complete the required eighteen (18) hours.

SOCIOLOGY COURSES (SOC)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

SOC 100 American Society

3 hrs.

An analysis of contemporary American society, including change and stability and change in society’s reactions to it, the organization and operation of the criminal justice system, and the correctional process, as well as causes of crime and delinquency and other current issues. While the goal of the program is to provide knowledge and skills necessary for students interested in careers in criminal justice, it will support a number of related areas. In addition, students will be well prepared to pursue professional or graduate work in law, criminology, or other areas.

SOC 122 Death, Dying, and Bereavement

3 hrs.

An analysis of contemporary American society, including death and bereavement in contemporary American society as well as in other societies and other time periods will be considered. Medical, legal, religious, and psychological issues in relation to death, dying, and bereavement will be discussed.

Not recommended for persons recently bereaved.

SOC 171 Social Impacts of Science and Technology

3 hrs.

An analysis of social consequences of major scientific and technological changes, including the actual and potential impact of advances in the physical and natural sciences.

SOC 182 Computer Usage in the Social Sciences

3 hrs.

An introduction to BASIC programming language. This course reviews advances in the physical and natural sciences.

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SOC 260 Introduction to Criminal Justice 3 hrs.
An overview of the criminal justice system as it currently operates in its three major components: police, courts, corrections. A broad-based interdisciplinary perspective is employed to introduce the beginning student to the processes of criminal justice in modern America. Particular attention is placed in the discretionary authority of officials who are engaged in the decision-making roles required to process suspects from arrest to release.

SOC 261 Law Enforcement Certification—Variable Topics 3 hrs.
The following topics allow Criminal Justice majors to become certified as police officers: safety and the police physical skills; criminal investigation; firearms; traffic; patrol procedures; precision driving; and police practical problems. Prerequisite: Permission of Criminal Justice Program advisor.

SOC 300 Sociological Theory 3 hrs.
A study of major theoretical viewpoints in contemporary sociology. The course is oriented toward the understanding, application, and extension of these major perspectives. Prerequisite: SOC 200.

SOC 304 Nonwestern World 4 hrs.
This course uses the evolution of modes of production as a key to gaining meaningful understanding of the cultures of Africa and Asia. Its conceptual framework is the ageless struggle of humankind to (1) come to terms with nature (cultural evolution), (2) come to terms with one another (social evolution), and (3) raise consciousness (the evolution of "universalizing" values). This enables the student to compare and contrast African, Asian, and "Western" cultures; to analyze the impact of these cultures on one another; and to understand the "indivisible nature of the human condition."

SOC 314 Ethnic Relations 3 hrs.
A study of race and ethnic relations, stressing a global perspective on social relations among varied peoples at different levels of development, and in different parts of the world.

SOC 320 Introduction to Social Psychology 3 hrs.
An introduction to social psychological theory and research, covering the interaction of individuals and the relationships of individuals to groups. Includes such topics as social influence, attitudes, socialization, and personality.

SOC 334 Pacific Rim—Asian Societies 3 hrs.
A sociological analysis of Asian Pacific Rim societies (such as China, Japan, Taiwan, South Korea, and Singapore) in various stages of industrialization and modernization, with consideration of their influence on American society.

SOC 335 Modern Latin American Societies 3 hrs.
An introduction to contemporary Latin American societies focusing on their developmental problems and processes. Topics may include rural-urban migration, land reform, and governmental development policies in the urban industrial sector.

SOC 336 Modern Japanese Society 3 hrs.
An introduction to Japanese society, focusing upon current developments in the process of industrialization and urbanization. Examines the impact of these processes on Japanese population, family life, village organization, urban community, class structure, and personality.

SOC 352 Introduction to Social Gerontology 3 hrs.
An exploration of the social, psychological, economic, and physical aspects of aging. Consideration will be given to institutional programming for older people in the United States and other societies.

SOC 353 The City and Society 3 hrs.
An examination of the city and the process of urbanization from earliest times to the present. Focusing upon the United States, emphasis will be placed on the characteristics, problems, and consequences of urban growth and development.

SOC 354 Population and Society 3 hrs.
A sociological investigation into the dynamics and consequences of the world-wide population explosion, and U.S. population problems such as family planning, the baby boom, zero population growth, and ecological issues. Prerequisite: SOC 200.

SOC 362 Criminology 3 hrs.
An overview of the field of criminology. The areas considered range from the definitions, origins, and extent of crime and law, to causal theories of criminal behavior, types of crimes and victims. Particularly stressed is an analysis of the relationship between law and society and social structure to crime.

SOC 363 Criminal Justice Process 3 hrs.
This course describes and explains the criminal justice process from a sociological perspective. An analysis of the substantive and procedural criminal law as it relates to criminal justice is presented. The major focus is on the explanation of discretionary criminal justice decision making from arrest to sentencing. Prerequisite: SOC 362.

SOC 364 Sociology of Law Enforcement 3 hrs.
A sociological analysis of the process of law enforcement as it involves municipal, state, and federal agencies. Includes analysis of the police "working personality," social roles, isolation from other social groups, vulnerability to corruption through politics and/or organized crime, and abuses of authority. The development and comparison of the police role will be traced from its roots in England to the present American position. Prerequisite: SOC 362.

SOC 365 Correctional Process 3 hrs.
An overview of the correctional process as a function of the criminal justice system in contemporary society. A broad perspective is employed based on existing criminological theory and accumulated knowledge of the social, political, and economic influences on the phenomenon of crime and delinquency. The uses of institutional placements, intermediate sanctions, and community-based programming to fulfill the formal and informal goals of corrections are critically assessed. Prerequisite: SOC 362.

SOC 373 Sociology of Health and Illness 3 hrs.
Introduction to the concepts of health and illness in our society: ways of measuring disease; the impact of social class, race, religion, and ethnicity on the perception and distribution of income, attention will also be paid to the social structure of the health care delivery system and of alternative systems of medical care. Prerequisite: SOC 200.

SOC 375 Sociology of Work 3 hrs.
An introduction to the problems arising from employment, such as worker morale and productivity, and the interaction of workers, the impact of job, and the role of union and collective bargaining. Includes the relationships of workers to government manpower programs and other employment policies.

SOC 382 Methods of Sociological Inquiry I 3 hrs.
An introduction to the quantitative and qualitative methods of empirical research in the social sciences. Major topics include the logic of scientific inquiry, ethics, design, measurement, and an introduction to univariate and bivariate descriptive statistics. Computer-assisted projects and exercises are conducted in laboratory sessions. Sociology majors are urged to take this course following SOC 200 and to develop the ability to evaluate research findings in subsequent content courses. Prerequisite: SOC 200 and SOC 182 or Computer Literacy Requirement.

SOC 383 Methods of Sociological Inquiry II 3 hrs.
A further consideration of the quantitative and qualitative methods of empirical research in the social sciences. Topics include experimental and survey designs, utilization of available data, field studies, evaluation procedures, statistical inference, association and non-parametric statistics, and an introduction to multivariate analysis. Computer-assisted projects and exercises are conducted in laboratory sessions. A continuation of SOC 382. Prerequisite: SOC 382.

SOC 390 Marriage and Family Relations 3 hrs.
A sociological analysis of the structural and interpersonal aspects of marriage and family groups in contemporary society, with emphasis on the American middle class. Consideration is given to change and diversity in family patterns, norms, and values, and to factors contributing to family unity or disorganization. Prerequisite: SOC 200.

SOC 412 Child Abuse 3 hrs.
This course is an examination of child abuse in American society. Medical, psychological, educational, ethical, psychiatric, and legal perspectives are combined in a social analysis. The origins, family context, nature, extent, and social consequences of child abuse are discussed. Currently practiced social and legal solutions are presented, as well as possible social change required to respond to this phenomenon.

SOC 421 Childhood Socialization 3 hrs.
An investigation of social development of the child from birth to adolescence. The course will focus on the child's interactions with parents and peers as these influence processes of learning, language acquisition, role playing, the organization of knowledge, and development of self. Prerequisite: SOC 320.

SOC 422 Adolescent Socialization 3 hrs.
An investigation of social learning and personality development in adolescence. This course examines the effects of interaction patterns and group affiliations, social class membership, biological, social roles and self-awareness on adolescent behavior, personality development, and orientation toward the adult world and adulthood. Prerequisite: SOC 320.
SOC 454 Juvenile Delinquency
3 hrs.
A study of juvenile delinquency as a social problem. Extent, causative factors, methods of treatment, and programs of prevention and control are covered. When feasible, students visit community programs. Prerequisite: SOC 200.

SOC 456 Social Stratification
3 hrs.
An analysis of the nature, causes and consequence of class and status differences within societies. Stress is placed upon such concepts as mobility, class, status and differential power. Conflict and functional theories of stratification are treated. This class satisfies the Baccalaureate Writing Requirement for Sociology majors. Prerequisite: SOC 200.

SOC 458 Juvenile Justice Casework
3 hrs.
This course is a seminar/practicum in the area of non-formal treatment of juvenile offenders and their families. The course focuses on the holistic assessment, decision making and treatment of juveniles brought to the attention of the court for delinquent behavior. Each student is expected to provide a wide range of casework services for a minimum of one hour per week. These services include home visits, interaction with schools and numerous other community agencies. Prerequisite: SOC 454.

SOC 459 Juvenile Justice
3 hrs.
This course deals with the processing of offenders through the juvenile justice system with concentration on both philosophy and function of juvenile courts. Personal and organizational factors that are associated with, or that determine offenders’ passage through the juvenile court are examined. Prerequisite: SOC 454.

SOC 465 Non-Institutional Corrections
3 hrs.
This course examines correctional alternatives to incarceration. Specific attention is directed at probation, parole, community correction centers, substance abuse treatment programs, electronic monitoring, and community service projects. The rationales for using intermediate sanctions are critically assessed and policy implementation are addressed. Prerequisite: SOC 365.

SOC 466 Advanced Criminology
3 hrs.
This is the capstone course for the criminal justice major. The course examines the intersection of criminological theory, public policies on crime, and political ideology. A number of important crime control policies are analyzed. Students are asked to examine the political philosophy and theoretical ideas which underlie these policies, the research evidence on their effectiveness, and their political implications. This class satisfies the Baccalaureate Writing Requirement for Criminal Justice Majors. Prerequisites: SOC 362, SOC 363, SOC 364, and SOC 365.

SOC 467 The Police and Community Dynamics
3 hrs.
Study of the role of the police in the community by looking at the public’s perceptions, knowledge, and expectations, and the police’s responsibilities in community relations. This course stresses the practical application of knowledge to contemporary issues facing police such as the use of deadly force, police performance, neighborhood patrols, politics of law enforcement, minority relations, victimless crime, and the resolution of police/community differences. Prerequisite: SOC 364.

SOC 468 The Police and Crime Prevention
3 hrs.
This course provides an intensive examination of the important issue of crime prevention. Crime prevention is viewed within the larger political process and is related to the etiology of criminal behavior. The utility of general and specific prevention is discussed. Looking at techniques and programs of both the police and community including target hardening and methods of decreasing the opportunity for victimization. The security business and various security techniques will also be analyzed. Prerequisite: SOC 364.

SOC 479 Female/Male Interaction
3 hrs.
Examines the variable of gender as it influences interaction between women and men. Topics include female/male stereotypes, differences in female/male verbal and non-verbal codes, and female/male interaction on the job. (Cross-listed with COM 479.)

SOC 482 The Family as a Social Institution
3 hrs.
The family viewed in historical and cross-cultural perspectives. A structural-functional analysis of the family institution and the relationship between the social structure of society and the family system. Emphasis is placed on change and comparative analysis. Prerequisite: SOC 200 or equivalent.

SOC 490 Social Context of Sexual Behavior
3 hrs.
This course focuses on a systematic analysis of contemporary sexual codes and behavior in American society. Present-day beliefs and practices are viewed in historical context (especially from 1900 to the present) to gain insight into what is today, with the purpose of projecting what may be in the future. The sociological, historical, social psychological analysis examines current patterns of beliefs and behavior in terms of their immediate and potential effects and consequences both for individuals and couples, and also for society. Prerequisite: SOC 200.

SOC 495 Special Topics in Sociology or Criminal Justice: Variable Topics
1–3 hrs.
A specialized course dealing, each time it is scheduled, with some particular aspect of sociology or criminal justice not usually included in other course offerings. May be repeated for credit with a different topic. Prerequisite: SOC 200.

SOC 496 Criminal Justice Internship
2–8 hrs.
Opportunity is provided through the Criminal Justice Program for supervised experiences in state and local criminal justice agencies. Approved application is required. Prerequisite: Approved application.

SOC 498 Sociology Internship
2–8 hrs.
Structured as part of a specific departmental program and identified as such in the printed schedule when offered. Opportunity is provided for supervised experiences in local organizations or activities in such areas as criminal justice, gerontology, and urban studies. Approved application required. Prerequisite: SOC 200.

SOC 499 Honors Seminar
2–6 hrs.
Investigation of selected topics in seminar sessions by advanced undergraduates. May be repeated for credit with a different topic.

500-level courses in the Department of Sociology are designed for a graduate student audience. Advanced undergraduates with at least 12 hours of prerequisites and junior class status will be allowed to enroll. Prerequisites must include SOC 200 or its equivalent in another related social science discipline; and two 300- or 400-level courses (i.e., one of each, or two of one). Exemptions to these may be granted on a case by case basis.

SOC 500 Computer Application in Social Research
3 hrs.
An introduction to computer applications for graduate students in the social sciences. Since they all have utility in the research process, the full range of applications will be covered, including: word processing, spreadsheets, graphics, data base management, communications, and statistical processing. A hands-on course, it includes individual assignments relating to each of the application areas. Special attention will be paid to the use of SPSS (The Statistical package for the Social Sciences) in the analysis of quantitative data. Several assignments will relate to the use of this software package. Primarily for graduate students in the social and behavioral sciences with no special mathematical or computer experience. Undergraduates admitted only with the permission of instructor.

SOC 501 Social Systems Theory and Analysis
3 hrs.
An investigation and critique of social systems theory, general systems analysis, and specific systems analyst techniques which have been used in social organizations. Each student will be required to conduct a systems analysis during the course. Prerequisite: SOC 200.

SOC 510 Studies in Social Problems: Variable Topics
3 hrs.
An examination of a selected area of concern in social problems not intensively covered in other courses. The focus of this course will be substantive, as well as theoretical and methodological. Topics may include such areas as poverty, mental illness, narcotic addiction, alcoholism, aging, and international tensions. May be repeated for credit with a different topic. Prerequisite: SOC 200 or 210.

SOC 515 Sociology of Mental Disorder
3 hrs.
This course will be concerned with examining the historical evolution and contemporary meaning of concepts of mental health and mental disorder. The course will also consider the amount and kind of mental disorder in society, the structure of the mental health care delivery system, the nature of help-seeking for mental disorder, and sociological analysis of psychotherapy. Prerequisite: SOC 200.

SOC 520 Studies in Social Psychology: Variable Topics
3 hrs.
Further analysis of selected topics in social psychology not intensively covered in other courses. Specific topic will be designated in the course title when scheduled. May be repeated for credit with a different topic. Prerequisite: SOC 320.

SOC 531 Studies in Social Change: Designated Areas
3 hrs.
Analysis of social change in specific geographic or national areas designated in the course title as scheduled. Change is examined through perspectives from history, anthropology, and sociology. May be repeated for credit with a different area. Prerequisite: SOC 200.

SOC 540 Sociology of Medicine
3 hrs.
A comprehensive survey of concepts and research findings in the field of the sociology of medicine. Topics to be covered include: the distribution of illness in society, relationships
between social stress and disease, illness as a social process, health care professionals, the sociology of health care delivery. Prerequisite: SOC 373.

SOC 552 Sociology of Aging 3 hrs.
An examination of the process of aging in American society, with particular emphasis on the periods of late maturity and old age. Consideration will be given to theories of aging and the social implications of age grading, the meaning of work and retirement, and the status and roles of the aged. Prerequisite: 6 hours of sociology including SOC 200.

SOC 560 Corporate and Governmental Crime 3 hrs.
An examination of the crimes committed by business corporations and government agencies. The course describes the nature, extent, and costs of these organizational crimes, explains the structural and organizational force which give rise to such crimes and analyzes the problem of controlling organizational offenders. The course also examines the political process whereby corporations and governments come to be defined as deviant or criminal. Prerequisites: SOC 200 or 210, SOC 260, and SOC 362, and one upper level (300- or 400-level) course.

SOC 561 Violence and U.S. Society 3 hrs.
This course analyzes the nature, extent and causes of violence associated with the United States. The forms of violence to be analyzed include interpersonal, institutional, and structural violence; recent theory and research on violence will be reviewed and various prevention and control policies will be discussed. Prerequisites: SOC 200 or 210, SOC 260, and SOC 362, and one other upper level (300- or 400-level) course.

SOC 562 Victimology 3 hrs.
The study of crime victims, the probabilities of victimization, victim-offender relationships, the treatment of victims by the criminal justice system, and the economic, social, and psychological impact of victimization. An analysis of coping strategies is discussed and the role of the victim in the criminal justice system is analyzed. Prerequisite: SOC 200 or 210, SOC 260, and SOC 362, and one other upper level (300- or 400-level) course.

SOC 563 Gender and Justice 3 hrs.
This course provides an overview of the relatively recent field of women, crime and justice, with particular direction guided by an issues approach. A wide variety of current research and theory in this realm are critically examined. The specific subtopics covered in this course encompass gender and discrimination in society at large, within the sociological/criminological academy, and within the criminal justice system. Broad feminist theoretical and methodological perspectives are drawn upon to contour the examination of women as criminal offenders, as victims of crimes such as rape and intimate violence, and as professional workers within the criminal justice system. Prerequisites: SOC 200 or 210, SOC 261, and SOC 362, and one upper level (300-400) course.

SOC 568 Race, Ethnicity, and Justice 3 hrs.
This course addresses the multicultural dynamics that effect the definition(s) and distribution of justice in the United States. The primary focus is the differential treatment of African Americans, American Indians, Latinos, and Asian Americans throughout the major institutions of society, particularly the legal institution. A critical analysis of the social, political, and economic forces that support the current social structure will direct the inquiry. Prerequisites: SOC 200 or 210, SOC 260, and SOC 362, and one upper level (300-400) course. SOC 314 is encouraged.

SOC 570 Studies in Social Institutions: Variable Topics 1-4 hrs.
An examination of a selected topic in the area of social organization or institutions. The focus of the course will be substantive, but theoretical and methodological concerns will also be covered. Possible topics could include work and leisure, occupations and professions, sociology of science, mass society, macro-sociology, arts, and others. May be repeated for credit with a different topic. Prerequisite: SOC 200 or equivalent.

SOC 573 Sociology of Political Behavior 3 hrs.
Systematic sociological theory and research applied to the study of political organizations and behavior in the United States and in selected countries abroad. Such topics as political parties, voting, bureaucracy, and political ideology will be considered. Prerequisite: SOC 200.

SOC 578 Sociology of Law 3 hrs.
An examination of legal organizations, the legal profession, and legal norms in the United States and other Western societies. Emphasis will be placed upon the relationship between the legal system and the society in which it functions. Prerequisite: SOC 200 or equivalent.

SOC 585 Research Methodology: Variable Topics 1-4 hrs.
This course concentrates on specialized research techniques and topics such as sampling and survey design, interviewing, and the use of sociological computer software. It may be repeated for credit with a different topic. Prerequisite: Consent of department.

SOC 592 Family Life Education and Counseling 3 hrs.
Provides the student with working knowledge of the methods and materials appropriate in the school, the church and other social situations, for working with individuals and small groups who desire preparation for marriage and parenthood. Some attention will be given to the techniques for handling counseling opportunities arising out of these teaching situations. Prerequisite: SOC 200.

SOC 598 Directed Individual Study 2-6 hrs.
A program of independent study (reading or research) to provide the unusually qualified sociology student with the opportunity to explore a topic or problem of interest, under the guidance of one of the faculty of the department. The initiative for planning the topic for investigation must come from the student. Approval is contingent upon the merit of the proposal. Two or three hours credit per semester, cumulative to six hours. Enrollment beyond the first semester may be either for the same topic or for a new topic. Prerequisite: Consent of instructor and the department chairperson.
John E. Fetzer Business Development Center

The John E. Fetzer Business Development Center provides a wide variety of services for business, industry, governmental, charitable, and educational organizations. Programs range from management and executive development seminars presented in the Center by Western’s Haworth College of Business faculty and outside consultants through in-house tailored sessions for specific organizations. Programs are also offered in locations throughout the region. In addition, the Fetzer Center provides an array of meeting, conference, training, and special event facilities for local, regional, and state organizations. The building features a 250-seat United Nations-style auditorium, a large comfortable lecture hall, numerous seminar rooms, a computer simulation laboratory, and banquet facilities. The opening of the Fetzer Center building in 1983 has enabled the Haworth College of Business to interact more effectively with regional business organizations.

Service Quality Institute

The Service Quality Institute is an interdisciplinary center that focuses on service quality issues in the service sector of the economy. It was formed to (1) provide for exchange of service quality ideas and information between University faculty and service industries on both a formal and informal basis, (2) conduct and facilitate research in the field of service quality by providing resources necessary to investigate problems in the services environment, (3) assist individuals, firms, and organizations in solving service quality problems, (4) distribute this information in scholarly publications and practitioner seminars and workshops, and (5) foster and build interdisciplinary work among faculty and between colleges at the University.

Business Administration Curriculum (BBA Degree)

I. Pre-Business Curriculum

Any student planning to pursue business administration as a curriculum will be admitted to a pre-business curriculum and will work with a business advisor in the development of a planned program.

The pre-business curriculum requirements are:

1. Completion of a minimum of 60 semester hours.
2. An acceptable overall grade point average (minimum of 2.50).
3. Minimum grade of “C” in the following pre-business courses or approved alternatives:
   A. BIS 142, Informational Writing... 3 hrs.
   B. One of the following . . . . 3 hrs.
PSY 100, General Psychology; PSY 344, Organizational Psychology; SOC 200, Principles of Sociology
C. MATH 115, 116, 122 or 200 ........... 6 hrs.
D. BIS 102, Intro. to Information Processing .............................................. 3 hrs.
E. ECON 201 and 202, Principles of Economics ........................................... 6 hrs.
F. ACTY 210 and 211, Principles of Accounting .............................................. 6 hrs.
G. MATH 216, Business Statistics .... 3 hrs.

4. Additional hours will be taken in the following areas during the 60 semester hours:
A. General Education Program from Areas 1, 2, 3, 6, 7, 8 .................................. 18 hrs.
B. Non-business electives

After completion of not less than 45 semester hours work, application for admission to the professional business administration curriculum must be made by native students. Actual admission will not be approved until the completion of the pre-business curriculum. Upper level transfer students will apply for admission to the professional business administration curriculum prior to their first semester of enrollment.
Admission of transfer students from accredited two- and four-year institutions will be made on an individual basis. The same criteria for admission listed above will apply. Equivalent transfer work must be credited to the same areas listed above.

Students not meeting admission requirements will be informed of steps they can take to earn admission. Admission of students on a probationary basis to the professional business administration curriculum will be considered on an individual basis and include an examination of ACT test results in addition to a personal interview.

All students will receive academic advising from the Haworth College of Business during their first two years on an appointment basis. After admission to the Haworth College, students will be assigned to a specific advisor in the Academic Advising Office. After a choice of major has been made, students will also be assigned an advisor in that particular area.

Students following non-business curricula within the University beyond their sophomore year must realize that they could have difficulty upon graduation with a BBA degree in a four-year span.

II. Professional BBA Curriculum

In order to graduate from the professional BBA curriculum, a student must have a minimum of 122 non-repeated semester hours. In addition to the University requirements of general education, physical education and the first two years of study as outlined in the pre-business curriculum, students must complete the following:

1. Upper Class Requirements:
   A. BIS 340 Principles of Business Communication ............................................. 3 hrs.
   B. BIS 350 Management Information Systems ................................................... 3 hrs.
   C. FCL 320 Business Finance ................................................................................. 3 hrs.
   D. FCL 380 Legal Environment ............................................................................. 3 hrs.
   E. MGMT 300 Fundamentals of Management ...................................................... 3 hrs.
   F. MGMT 463 Production and Operations Management ........................................ 3 hrs.
   G. MKTG 250 Marketing .......................................................................................... 3 hrs.
   H. Advanced Quantitative ..................................................................................... 3 hrs. (choose one: BIS 464, FCL 344, ECON 400, MGMT 360, MKTG 471)
   I. Advanced ECON ................................................................................................ 3 hrs. (choose one: 304, 310, 319, 320, 324, 345, 380, 400, 403, 406)

   J. MGMT 499 Strategic Management ..................................................................... 3 hrs. (This capstone course must be taken during a student’s final semester/session).

   A “C” average grade point is required in the upper-level core courses outlined above.

   2. Major courses (minimum) .......................................................... 21 hrs.
   A “C” average grade point is required in all courses applied toward a major.

   3. General Education/Electives
   A. General Education Distribution Program: General Education 300+, Area 4 and one area to complete a minimum of 37 hours.
   B. I-V ................................................................................................................... 8 hrs.
   E. Electives ........................................................................................................... 3-6 hrs.

   4. Transfer work towards upper division courses must meet the following criteria:
   A. Approval by the Office of Academic Advising and the department.
   B. Minimum grade of “C”

Baccalaureate Writing Requirement

Students who have chosen to major in any area of business will satisfy the Baccalaureate Writing Requirement by successfully completing BIS 340 Principles of Business Communication.

Advising

For questions regarding BBA curriculum requirements and transfer credit equivalencies, contact the Haworth College of Business Advising Office.

Special Notes

1. A further requirement is that a minimum of 40 percent of the coursework must be taken from areas other than business and upper division economics.

2. The last 30 hours of work for those in the B.B.A. curriculum must be taken on campus. Exceptions may be granted only by approval of the department head and the Dean of the Haworth College of Business. CLEP examinations may not be used to fulfill the last 30-hour requirement.

3. Students at two-year community colleges who plan to continue at WMU are urged to take courses equivalent to the ones listed in the pre-business curriculum, as this will facilitate entrance into the upper-level program of the college. Community college students should also be aware of coursework acceptable by transfer on the basis of the university’s MACRAO agreement and acceptable validation procedures.

4. Regarding the Mathematics 116 requirement, a 3-hour college algebra course based on a prerequisite of three years of college preparatory mathematics is acceptable as a transfer course.

5. With departmental approval, transfer courses from four-year schools (and appropriate departmental courses from community colleges) may be included in majors and minors. However, a minimum of 12 semester hours for a major and 9 for a minor must be taken at WMU.

6. To declare a minor in any business area, the student must meet with a College of Business advisor. The requirements for declaration of a minor are:
   a. Junior status (56 completed hours)
   b. A 2.5 overall grade point average
   c. The student must then meet with a department advisor for specific prerequisite and course requirements of the minor

Areas of Concentration In Business Administration

To graduate with any major from the Haworth College of Business, it is necessary to be enrolled in the Bachelor of Business Administration curriculum.

Accountancy (ACTY)

MAJOR REQUIREMENTS

The accountancy program has a core of courses to be taken by all majors. The core consists of the following required courses:

ACTY 210, 211, Principles of Accounting ................................................... 6 hrs.
ACTY 310, 311, Financial Accounting ................................................... 6 hrs.
ACTY 313 Accounting Information Systems .................................................. 3 hrs.
ACTY 322 Managerial Accounting ................................................................. 3 hrs.
ACTY 324 Income Tax Accounting ............................................................... 3 hrs.
ACTY 516 Auditing .......................................................................................... 3 hrs.

Accountancy majors must complete a minimum of 30 credit hours of accountancy courses. Two additional courses to complete the accountancy major are to be selected from those described below. Courses may be selected as the student chooses within the guidelines of the University and the Haworth College of Business.

ACTY 511 Advanced Accounting ................................................................. 3 hrs.
ACTY 513 Advanced Accounting Systems ................................................... 3 hrs.
ACTY 514 Institutional Accounting ................................................................. 3 hrs.
ACTY 518 Accounting Theory and Problems ................................................ 3 hrs.
ACTY 522 Cost Accounting—Theory and Practice ..................................... 3 hrs.
ACTY 524 Studies in Tax Accounting ............................................................ 3 hrs.

Accountancy majors must complete at least 90 hours in courses outside the accounting discipline.

Minor Requirements: Students wishing to minor in accountancy are required to take a minimum of 12 hours. Fifteen of these hours must be in accountancy: ACTY 210, ACTY 211 are required plus 9 additional accountancy hours for which the student meets the prerequisites to be selected with the student’s professional objectives in mind. The remaining 6 hours must be selected from the following courses: FCL 320 and 380, MGMT 300, and MKTG 370.

Qualifications for Accounting Certification Exams: A graduate from the Haworth College of Business with a major in Accountancy will be qualified to take many of the professional certification exams. Since the qualifying rules differ by state, and are subject to change, the student is responsible for determining if additional criteria need to be met for a specific exam or state.

Advisors: Report to the Department of Accountancy, 3190 Schneider Hall for assignment to an advisor.

Transfer Credits: Up to 6 hours of elementary accounting may be accepted from other than a four-year accredited school. All majors must take a minimum of 12 hours of accounting courses at WMU. xcdasqawertyhgfdsaqw

Business Information Systems (BIS)

The Department of Business Information Systems offers undergraduate areas of concentration as shown below. The courses are to be taken in the sequence indicated, following prerequisites as listed after the catalog course descriptions.
1. ADMINISTRATIVE SYSTEMS (ADS)  
27 hours  
BIS 102 Introduction to Information Processing ........................................... 3  
BIS 260 Microcomputer Business Applications .............................................. 3  
BIS 386 Advanced Office Systems ........................................................... 3  
BIS 388 Records Management ................................................................. 3  
Plus 6 hours, as advised, from ................................................................. 6  
BIS 392 Information Systems Analysis and Design  
BIS 456 Office Management  
BIS 484 Micrographics and Reprographics  
BIS 486 Corporate Records Centers  
Plus 9 hours, as advised, from ................................................................. 9  
BIS 261 COBOL Programming  
BIS 264 Report Program Generator  
BIS 342 Organizational Communication  
BIS 343 Report Writing  
BIS 410 Internship in Administrative Systems  
BIS 458 Topics in Administrative Systems  
BIS 596 Independent Study in Administrative Systems  
BIS 598 Independent Readings in Administrative Systems  

2. BUSINESS COMMUNICATION MINOR (BCM)  
Requirements (21 hours)  
BIS 242 Organizational Communication ..................................................... 3  
BIS 343 Report Writing ................................................................. 3  
BIS 442 Senior Seminar in Business Communication ..................................... 3  
BIS 454 Professional Business Communication ........................................... 3  
One technical course from:  
BIS 386 Advanced Office Systems  
BIS 400 Topics in Business Communication .............................................. 3  
BIS 456 Office Management  
BIS 480 Business Communication Technology ............................................. 3  
BIS 483 Business Publications and Presentations ........................................ 3  
Plus 9 hours electives, as advised from ..................................................... 9  
BIS 386 Advanced Office Systems  
BIS 400 Topics in Business Communication .............................................. 3  
BIS 456 Office Management  
BIS 480 Business Communication Technology ............................................. 3  
BIS 483 Business Publications and Presentations ........................................ 3  
BIS 410 Internship in Business Communication  
BIS 596 Independent Study in Business Communication .................................. 3  
BIS 598 Independent Readings in Business Communication  
May also include 6 credit hours from:  
ACTY 210, BIS 350, FCL 380, MGMT 300, MKTG 250  
Non-business majors must include ACTY 210.  

ACTY 210 Principles of Accountancy I  
BIS 350 Management Information Systems ............................................... 3  
FCL 380 Legal Environment  
MGMT 300 Fundamentals of Management  
MKTG 370 Marketing  

3. COMPUTER INFORMATION SYSTEMS (CIS)  
30 hours  
BIS 260 Microcomputer Business Applications .............................................. 3  
BIS 261 COBOL Programming ................................................................. 3  
BIS 360 Information Systems Analysis and Design ........................................ 3  
BIS 362 Advanced COBOL ................................................................. 3  
BIS 462 CIS Development Project ........................................................... 3  
CS 111 Computer Programming ............................................................... 3  

CS 443 Data Base Management Systems .................................................... 3  
Plus 9 hours, as advised, from ................................................................. 9  
CS 223 Computer Organization  
BIS 264 Report Program Generator  
BIS 386 Advanced Office Systems  
BIS 410 Internship in CIS  
BIS 464 Decision Support and Expert Systems  
BIS 465 Trends in Information Systems  
BIS 466 Distributed Data Processing  
BIS 474 Information Resource Management  
BIS 555 Topics in Computer Information Systems  
BIS 596 Independent Study in Computer Information Systems  
BIS 598 Independent Readings in Computer Information Systems  

Finance and Commercial Law (FCL)  
The Finance and Commercial Law Department offers majors in finance, general business, insurance, and real estate and minors in finance, general business, insurance, law, and real estate.  

1. FINANCE AND COMMERCIAL LAW MAJORS  
A: Finance Major (FIN)  
Advisors: Report to department office, 3290 Schneider Hall, for assignment to an advisor.  
In addition to the completion of the curriculum requirements for all students pursuing the Bachelor of Business Administration degree, for which FCL 320 is required, all finance majors must complete FCL 344, as their upper class advanced quantitative course, plus 21 hours of finance and commercial law courses including:  
FCL 330 Real Estate Fundamentals ..................................................... 3  
FCL 331 Real Estate Development ....................................................... 3  
FCL 332 Real Estate Investments ......................................................... 3  
The remaining 12 hours are to be at the 300 level or above and are to be selected, in consultation with an advisor from the Department of Finance and Commercial Law.  

B: General Business Major (GBS)  
Advisors: Finance and Commercial Law  
With the exception of general business majors, any student who has completed the BBA curriculum requirements will automatically receive a general business minor. Students pursuing a degree other than a BBA degree may minor in general business by completing the following 21 hours or substitute business courses approved by a general business advisor (3290 Schneider Hall):  
ACTY 210 and 211 Principles of Accounting ........................................... 3  
FCL 310 Introduction to Financial Markets ............................................. 3  
FCL 320 Business Finance ................................................................. 3  
FCL 351 Investment Analysis ............................................................... 3  
Nine (9) additional hours from available finance courses at the 300-level or above must be selected in consultation with the advisor and with the student's professional objectives in mind.  

C: Insurance Major (INS)  
Advisor: Kennedy  
In addition to completion of the curriculum requirements for all students pursuing the Bachelor of Business Administration degree, for which FCL 320 is required, all insurance majors must complete FCL 344, as their upper class advanced quantitative course, plus 21 hours of Insurance, Finance, and Law courses including:  
FCL 360 Risk and Insurance ............................................................... 3  
FCL 361 Life and Health Insurance ...................................................... 3  
FCL 362 Property and Liability Insurance ............................................... 3  
FCL 480 Tort Law and Liability ............................................................ 3  
The additional nine hours are to be selected in consultation with an advisor from the Department of Finance and Commercial Law.  

D: Real Estate Major (REA)  
Advisor: Scheu  
In addition to the completion of the curriculum requirements for all students pursuing the Bachelor of Business Administration degree, for which FCL 320 is required, all real estate majors must complete FCL 344, as their upper class advanced quantitative course, plus 21 hours of finance and commercial law courses including:  
FCL 330 Real Estate Fundamentals ..................................................... 3  
FCL 331 Real Estate Development ....................................................... 3  
FCL 332 Real Estate Investments ......................................................... 3  
The remaining 12 hours are to be at the 300 level or above and are to be selected, in consultation with an advisor from the Department of Finance and Commercial Law.  

2. FINANCE AND COMMERCIAL LAW MINORS  
A: Finance Minor (FIN)  
Advisors: Finance Area Faculty  
Students wishing to minor in finance are required to take 21 hours. Of the 21 hours, 12 hours are required (3 in accounting and 9 in finance) and 9 are elective finance courses as shown below:  
ACTY 210 Principles of Accounting ..................................................... 3  
FCL 310 Introduction to Financial Markets ............................................. 3  
FCL 320 Business Finance ................................................................. 3  
FCL 351 Investment Analysis ............................................................... 3  

B: General Business Minor (GBS)  
Advisors: Finance and Commercial Law  
With the exception of general business majors, any student who has completed the BBA curriculum requirements will automatically receive a general business minor. Students pursuing a degree other than a BBA degree may minor in general business by completing the following 21 hours or substitute business courses approved by a general business advisor (3290 Schneider Hall):  
ACTY 210 and 211 Principles of Accounting ........................................... 3  
BIS 340 Business Communications ....................................................... 3  
FCL 320 Business Finance ................................................................. 3  
FCL 380 Legal Environment ................................................................. 3  
MGMT 300 Fundamentals of Management .............................................. 3  
MKTG 370 Marketing ................................................................. 3  

C: Insurance Minor (INS)  
Advisor: Kennedy  
In addition to completion of the curriculum requirements for all students pursuing the Bachelor of Business Administration degree, for which FCL 320 is required, all insurance majors must complete FCL 344, as their upper class advanced quantitative course, plus 21 hours of Insurance, Finance, and Law courses including:  
FCL 360 Risk and Insurance ............................................................... 3  
FCL 361 Life and Health Insurance ...................................................... 3  
FCL 362 Property and Liability Insurance ............................................... 3  
FCL 480 Tort Law and Liability ............................................................ 3  
The additional nine hours are to be selected in consultation with an advisor from the Department of Finance and Commercial Law.
BIS 102 Introduction to Information Processing 3
MGMT 300 Fundamentals of Management 3

D: Law Minor (LAW)
Advisors: Law Area Faculty
Students wishing to minor in law are required to take a minimum of 21 hours. The law minor consists of:
FCL 380 Legal Environment of Business 3
FCL 382 Business Law II 3
Comprehensive Law 3
Nine (9) additional semester hours in law 9
The remaining six (6) hours must be selected from the following courses:
ACTY 210 Principles of Accounting 3
ACTY 211 Principles of Accounting 3
MGMT 300 Fundamentals of Management 3
MGMT 370 Marketing 3

E: Real Estate Minor (REA)
Advisor: Scheu
Students wishing to minor in real estate are required to take 21 hours. Sixteen of these hours are in Finance and Commercial Law courses and six are from other disciplines in the Haworth College of Business. The real estate minor consists of:
Six (6) hours in the following Haworth College of Business courses:
ACTY 210 Principles of Accounting 3
MGMT 300 Fundamentals of Management 3
MGMT 370 Marketing 3

Management (MGMT)
Advisors: Report to the Department of Management, 3390 Schneider Hall, for assignment to an advisor.

MAJOR IN MANAGEMENT (24 hours)
A major in three of four concentrations in management consists of the three courses listed below, together with 12 additional hours.
Management concentration does not require concentrations 1, 2, or 3. Students may be drawn from all Department of Management offerings above 302, except 360, 463, and 499. A student who needs to build a special program is required to do so in consultation with a departmental advisor.

MGMT 300 Fundamentals of Management 3
MGMT 301 Management Analysis and Behavior (I) 3
MGMT 302 Management Analysis and Behavior (II) 3
Plus completion of one of the following concentrations 15

Concentration in General Management
In addition to the requirements of the management major, the student must complete 15 hours of departmental electives.

Concentration in Entrepreneurship
In addition to the requirements of the management major, the student must complete MGMT 314 Business Ownership and Management, MGMT 414 Entrepreneurship, and MGMT 352 Human Resource Management, and two electives from management courses approved by a departmental advisor.

Concentration in Human Resource Management
In addition to the requirements of the management major, the student must complete MGMT 352 Human Resource Management, MGMT 453 Organizational Behavior, MGMT 454 Employee Relations, and one elective from management courses approved by a departmental advisor.

Concentration in Production/Operations Management
MGMT 300 Fundamentals of Management 3
MGMT 460 Decision Analysis 3
MGMT 463 Production and Operations Management 3
MGMT 464 Production Management and Control 3
MGMT 470 Production/Operations Simulation 3
MGMT 480 Materials Management-Strategic Behavior 3
Two electives from the Management Department approved by a Departmental advisor 6

MINOR IN MANAGEMENT (21 hours)
The minor in management requires twenty-four and one-half credit hours of the following courses:
MGMT 300 Fundamentals of Management 3
MGMT 301 Management Analysis and Behavior (I) 3
MGMT 302 Management Analysis and Behavior (II) 3
Electives from the Management Department approved by a Departmental advisor 6

Two additional courses selected from among the following:
ACTY 210 Principles of Accounting (required of Non-BBA majors) 3
FCL 320 Business Finance 3
FCL 330 Real Estate Fundamentals 3
FCL 331 Real Estate Finance 3
FCL 332 Real Estate Investments 3
FCL 333 Real Estate Appraisal 3
FCL 437 Real Estate Management 3

Marketing (MGMT)
Advisors: Chairperson, HAWORTH COLLEGE OF BUSINESS 167
MGMT 352 Human Resource Management, and two electives from management courses approved by a departmental advisor.

Concentration in Human Resource Management
In addition to the requirements of the management major, the student must complete MGMT 352 Human Resource Management, MGMT 453 Organizational Behavior, MGMT 454 Employee Relations, and one elective from management courses approved by a departmental advisor.

Concentration in Production/Operations Management
MGMT 300 Fundamentals of Management 3
MGMT 460 Decision Analysis 3
MGMT 463 Production and Operations Management 3
MGMT 464 Production Management and Control 3
MGMT 470 Production/Operations Simulation 3
MGMT 480 Materials Management-Strategic Behavior 3
Two electives from the Management Department approved by a Departmental advisor 6

MINOR IN MANAGEMENT (21 hours)
The minor in management requires twenty-one credit hours consisting of the following courses:
MGMT 300 Fundamentals of Management 3
MGMT 301 Management Analysis and Behavior (I) 3
MGMT 302 Management Analysis and Behavior (II) 3
Electives from the Management Department approved by a Departmental advisor 6

Two additional courses selected from among the following:
ACTY 210 Principles of Accounting (required of Non-BBA majors) 3
FCL 320 Business Finance 3
FCL 330 Real Estate Fundamentals 3
FCL 331 Real Estate Finance 3
FCL 332 Real Estate Investments 3
FCL 333 Real Estate Appraisal 3
FCL 437 Real Estate Management 3

Marketing (MGMT)
Advisors: Chairperson, HAWORTH COLLEGE OF BUSINESS 167

Marketing involves the development, pricing, promotion, and distribution of goods and services to satisfy customer needs and achieve organizational goals. Because marketing applies to all industries and encompasses many different activities, it offers a wide variety of career opportunities in fields such as advertising, brand and product management, customer service, distribution and logistics management, international marketing, marketing research, purchasing management, retail management, sales and sales management, and sport marketing. A growing number of nonprofit organizations, such as arts councils, educational institutions, government agencies, hospitals, and museums, also employ marketers.

The Department of Marketing offers students a choice of five majors: Marketing, Advertising and Promotion, Retailing, and Business Administration, Industrial Marketing, and Consumer Behavior. The Department also offers minors in Advertising and Promotion, or direct marketing departments.

Students are encouraged to pursue a related minor in Art, Communication, English (Writing Emphasis), or Graphic Arts to enhance their creative skills.

The Food Marketing (FMK) major prepares students for sales and marketing positions with food manufacturers and wholesalers. Western Michigan University is nationally recognized as one of the leading universities offering a specialized major in food marketing to prepare students for food industry careers.

The Industrial Marketing (IDM) major prepares students for sales and marketing careers with firms that emphasize business-to-business marketing. It is strongly recommended that Industrial Marketing majors complete a minor in Biomedical Sciences, Computer Science, Manufacturing Technology, or Physics to enhance their career opportunities with technology-oriented employers.

The Retailing (RET) major prepares students for careers in retail management with independent retailers and retail chains. Retailing majors are encouraged to pursue a related minor in an area such as Textile and Apparel Merchandising, Travel and Tourism (Geography), or Management.

Program Requirements
Course requirements for each of the five majors and two minors are listed below. Course prerequisites are listed after the Marketing course descriptions later in this section. Any deviations from these course requirements and prerequisites must have the written approval of the department chairperson.

All Marketing major/minor programs must be approved in writing by the department chairperson. Students should report to the Department of Marketing, 3210 Schneider Hall, for a list of faculty advisors and their office hours. BBA students wishing to declare a marketing major must bring with them an approved Curriculum Guide issued by the College of Business Advising Office in 2130 Schneider Hall. Students not enrolled in the BBA curriculum who wish to declare a marketing minor should first meet with a College of Business advisor in 2130 Schneider Hall to obtain a written permission slip before reporting to the Department of Marketing.

1. MARKETING MAJOR (MKTG) 27 hours
Required courses (18 hours):
MKTG 250 Marketing Principles 3
MKTG 371 Marketing Research 3
MKTG 374 Advertising 3
MKTG 471 Quantitative Marketing Applicators 3
MKTG 475 International Marketing 3
MKTG 486 Marketing Strategy 3
Select three courses from the following (9 hours):
MKTG 290 Food Marketing Systems 3
MKTG 360 Professional Selling 3
MKTG 372 Purchasing Management 3
MKTG 373 Introduction to Direct Marketing 3
MKTG 375 Principles of Retailing 3
MKTG 376 Sales Management 3
MKTG 377 Sales Promotion 3
MKTG 470 Industrial Marketing 3
MKTG 477 Consumer Behavior .......................... 3
MKTG 478 Special Topics in Marketing .................... 3
MKTG 480 Franchising ..................................... 3
MKTG 484 Business Logistics ........................... 3
MKTG 487 Marketing Ethics ............................... 3

2. ADVERTISING AND PROMOTION MAJOR (ADV) 27 hours

Required Courses (18 hours):
MKTG 250 Marketing Principles .......................... 3
MKTG 371 Marketing Research ............................ 3
MKTG 374 Advertising ...................................... 3
MKTG 471 Quantitative Marketing and Applications ... 3
MKTG 477 Consumer Behavior ............................ 3
MKTG 486 Marketing Strategy ............................. 3

Select three courses (9 hours) from the following:
MKTG 360 Professional Selling ............................ 3
MKTG 377 Sales Promotion ................................ 3
MKTG 472 Media Planning .................................. 3
MKTG 473 Direct Marketing Strategy ....................... 3
MKTG 474 Advertising Copy and Layout .................. 3
MKTG 475 International Marketing ....................... 3
MKTG 487 Marketing Ethics ............................... 3

3. FOOD MARKETING MAJOR (FMK) 29-31 hours

Required Courses (26-28 hours):
MKTG 250 Marketing Principles .......................... 3
MKTG 290 Food Marketing Systems ........................ 3
MKTG 371 Marketing Research ............................ 3
MKTG 391 Food Merchandising ............................ 3
MKTG 397 Food Marketing Field Experience ............... 2-4
MKTG 471 Quantitative Marketing Applications .......... 3
MKTG 484 Business Logistics ............................ 3
MKTG 492 Marketing Information Technology .......... 3
MKTG 494 Food Marketing Issues and Strategies ......... 3

Select one of the following courses (3 hours):
MKTG 360 Professional Selling ............................ 3
MKTG 375 Principles of Retailing ........................ 3
MKTG 396 Food Industry Survey .......................... 3
MKTG 493 Readings in Food Marketing ..................... 1-3
MGMT 352 Human Resource Management ................ 3

4. INDUSTRIAL MARKETING MAJOR (IDM) 27 hours

Required courses (24 hours):
MKTG 250 Marketing Principles .......................... 3
MKTG 360 Professional Selling ............................ 3
MKTG 371 Marketing Research ............................ 3
MKTG 372 Purchasing Management ........................ 3
MKTG 376 Sales Administration ........................... 3
MKTG 470 Industrial Marketing ........................... 3
MKTG 471 Quantitative Marketing Applications .......... 3
MKTG 484 Business Logistics ............................ 3

Select one of the following courses (3 hours):
MKTG 373 Introduction to Direct Marketing .............. 3
MKTG 374 Advertising ...................................... 3
MKTG 377 Sales Promotion ................................ 3
MKTG 475 International Marketing ....................... 3
MKTG 487 Marketing Ethics ............................... 3

5. RETAILING MAJOR (RET) 27 hours

Required courses (18 hours):
MKTG 250 Marketing Principles .......................... 3
MKTG 371 Marketing Research ............................ 3
MKTG 475 Principles of Retailing ........................ 3
MKTG 471 Quantitative Marketing Applications .......... 3
MKTG 486 Marketing Strategy ............................. 3
MKTG 492 Marketing Information Technology .......... 3

Select one course from the following (3 hours):
MKTG 373 Introduction to Direct Marketing .............. 3
MKTG 374 Advertising ...................................... 3
MKTG 377 Sales Promotion ................................ 3

Select two courses from the following (6 hours):
MKTG 476 Retail Management ............................. 3
MKTG 477 Consumer Behavior ............................ 3
MKTG 480 Franchising ..................................... 3
MKTG 484 Business Logistics ............................ 3

6. ADVERTISING AND PROMOTION MINOR (ADV) 24 hours

Required Courses (12 hours):
MKTG 250 Marketing Principles .......................... 3
MKTG 371 Marketing Research ............................ 3
MKTG 374 Advertising ...................................... 3
MKTG 477 Consumer Behavior ............................ 3

Select two courses (6 hours) from the following:
MKTG 377 Sales Promotion ................................ 3
MKTG 472 Media Planning .................................. 3
MKTG 473 Direct Marketing Strategy ....................... 3
MKTG 474 Advertising Copy and Layout .................. 3

Select two courses (6 hours) from the following:
ACTY 210 Principles of Accounting ....................... 3
ACTY 211 Principles of Accounting ....................... 3
FCL 320 Business Finance .................................. 3
MATH 216 Business Statistics ............................ 3

7. MARKETING MINOR (MKT) 21 hours

Required courses (6 hours):
MKTG 250 Marketing Principles .......................... 3
MKTG 371 Marketing Research ............................ 3

Select one course from the following (3 hours):
MKTG 374 Advertising ...................................... 3
MKTG 376 Sales Administration ........................... 3
MKTG 470 Industrial Marketing ........................... 3
MKTG 477 Consumer Behavior ............................ 3

Select two additional courses from the following (6 hours):
MKTG 290 Food Marketing Systems ........................ 3
MKTG 360 Professional Selling ............................ 3
MKTG 372 Purchasing Management ........................ 3
MKTG 373 Introduction to Direct Marketing .............. 3
MKTG 374 Advertising ...................................... 3
MKTG 375 Principles of Retailing ........................ 3
MKTG 376 Sales Administration ........................... 3
MKTG 377 Sales Promotion ................................ 3
MKTG 470 Industrial Marketing ........................... 3
MKTG 471 Quantitative Marketing Applications .......... 3
MKTG 475 International Marketing ....................... 3
MKTG 476 Retail Management ............................. 3
MKTG 477 Consumer Behavior ............................ 3
MKTG 480 Franchising ..................................... 3
MKTG 484 Business Logistics ............................ 3
MKTG 486 Marketing Strategy ............................. 3
MKTG 487 Marketing Ethics ............................... 3

Related Majors

Students who complete the B.B.A. curriculum requirements may major in any of the following four areas and receive the B.B.A. degree. All students electing a "related major" option must meet the minimum requirement of 40 percent of their coursework in business and upper division economics courses, in addition to the 40 percent in non-business requirement.

1. ECONOMICS (ECO)

Advisor: Caruso

Elect in conjunction with an Economics advisor an additional 21 semester hours of advanced courses (300-500 level) to include ECON 402, 403, 406, and 409.

2. INTEGRATED SUPPLY MANAGEMENT (ISM) 37 hours

In addition to the curriculum requirements for all students pursing the Bachelor of Business Administration Degree, complete the following:

One of the following: ECE 101, ECE 103, IME 315, IME 508, CS 104 or CS 111..

FCL 486 Marketing and Sales Law ....................... 3
IME 142 Engineering Graphics ........................... 3
IME 487 Manufacturing Productivity Techniques ....... 3
IME 328 Quality Assurance and Control .................. 3
ME 220 Manufacturing Productivity ...................... 4
MGMT 464 Production Management and Control ........ 3
MGMT 480 Materials Management Strategies .......... 3
MGMT 481 Integrated Materials Systems ............... 3
MKTG 372 Purchasing Management ....................... 3
MKTG 484 Business Logistics ............................ 3
MKTG 485 Materials Systems Analysis ................... 3

3. PUBLIC ADMINISTRATION (PAB)

Advisor: Gossman, McCarty

Major Requirements: 24 hours

In addition to the curriculum requirements for all students pursuing the Bachelor of Business Administration Degree, complete 24 hours from the following courses:

Required Course—Select one of the following courses:
FCL 380 Legal Environment .............................. 3
FCL 320 Business Finance ................................. 3

Elective Courses—Select seven (7) courses (21 hours) from the following list of courses:

ACTY 322 Managerial Accounting ........................ 3
ACTY 324 Income Tax Accounting ........................ 3
ACTY 514 Institutional Accounting ....................... 3
BIS 343 Report Writing .................................... 3
BIS 388 Records Management ............................ 3
BIS 456 Office Management ............................... 3
FCL 330 Real Estate Fundamentals ....................... 3
FCL 331 Real Estate Finance .............................. 3
FCL 482 Management and Labor Relations Law ........ 3
FCL 483 Real Estate Law .................................... 3
FCL 485 Government Regulation of Business .......... 3
MGMT 352 Personnel Management ....................... 3
MKTG 372 Purchasing Management ....................... 3

Minor Requirements: 21 hours

PSCI 200 National Government ........................... 3
PSCI 202 State and Local Government .................. 4
PSCI 330 Introduction to Public Administration .......... 3
PSCI 526 Administrative Law and Ethics ................ 3
PSCI 533 Public Personnel Administration ............... 3
PSCI 535 The Politics of Governmental Budget and Finance 3

Plus one of the following:
PSCI 404 Making of Public Policy in U.S. ................. 3
PSCI 531 Administration in Local and National Governments 3
PSCI 534 Administrative Theory .......................... 3
PSCI 591 Statistics for Political Science .................. 3
4. STATISTICS (STB)
40-41 hours
Advisor: Sievers

The following courses from the Department of Mathematics plus one business elective comprise the major in statistics. All students electing the statistics option must make sure they meet the minimum requirement of 40 percent of their coursework in business and upper division economics courses.

CS 306 Introductory Programming/FORTRAN 2
MATH 122 Calculus I 4
MATH 123 Calculus II 4
MATH 230 Elementary Linear Algebra 4
MATH 272 Vector and Multivariate Calculus 4
MATH 362 Probability 3
MATH 364 Statistical Methods 3
MATH 460 Introduction to Mathematical Statistics 3
MATH 506 Scientific Programming 3

Two of MATH:
MATH 563 Sample Survey Methods 3
MATH 566 Nonparametric Statistical Methods 3
MATH 567 Statistical Design and Analysis of Experiments 4
MATH 568 Regression Analysis 4

Elective (one upper-level business course emphasizing statistical applications) 3

Related Minors

1. INTEGRATED SUPPLY MANAGEMENT
15 hours This program was originally developed in 1989 to integrate business and technological concepts for a successful career in supply management. The program offers a major for students in the Haworth College of Business and a minor geared toward students in the College of Engineering and Applied Sciences.

Core Classes—9 hours (take all of the following):
IME 326 Operations Planning and Control 3
IME 416 Operations Control in Industry 3
MKTG 372 Purchasing Management 3
MKTG 464 Business Logistics 3

Capstone class—3 hours (take one of the following):
MKTG 455 Material Systems Analysis 3
MGMT 480 Materials Management Strategy 3
MGMT 481 Integrated Materials Systems 3

Elective—3 hours (one of the following):
IME 328 Quality Assurance and Control 3
IME 318 Statistical Quality Control 3
FCL 466 Marketing and Sales Law 3
MKTG 485 Material Systems Analysis 3
MGMT 480 Materials Management Strategy 3
MGMT 481 Integrated Materials Systems 3

2. INTERNATIONAL BUSINESS MINOR (INT)
21 hours
Two courses from the following list 6
FCL 320 Business Finance (Prereq. MATH 218 and ACTV 210)
FCL 380 Legal Environment
BIS 340 Principles of Business Communications (Prereq. BIS 142)
MGMT 300 Fundamentals of Management
MKTG 250 Marketing (Prereq. ECON 201)

Four courses from the following list 12
BIS 454 Intercultural Business Communications
BIS 466 Global Information Systems

FCL 442 International Finance (Prereq. FCL 320)
FCL 484 International Business Law (Prereq. FCL 380)
FCL 494 International Business Seminar (Prereq. FCL 380)
MGMT 410 Multinational Management
MGMT 411 Managing in Latin America
MKTG 475 International Marketing (Prereq. MKTG 250)
ECON 360 International Economics (Prereq. ECON 201-202)

One course from one of the following areas chosen in consultation with minor advisor 3
1. Foreign language course: must be at second semester of first year or higher.
2. Cultural and regional study: available only for students otherwise meeting foreign language requirement.
3. Skill specialization: available only for students otherwise meeting foreign language and cultural/regiona study requirement.

Haworth College of Business Courses (BUS)

BUS 170 Introduction to Business 3 hrs.
This course will provide students with an introduction to business and the business environment, both domestic and international. Students will study various business functions and how they are interrelated. Students will gain an understanding of how the various environments (political, legal, economic, and cultural) influence and are influenced by business. Course may not be used for business major or minor credit. Students in the BAD curriculum may not enroll in this course.

BUS 220 Introduction to Global Business 3 hrs.
An introduction to global business and its complex environment. Factors having an impact on global business including cultural differences, management theories, marketing activities and various legal and financial institutions are examined. Students will gain knowledge of how the various environments (political, legal, economic, and cultural) influence and are influenced by business. Course may not be used for business major or minor credit. Students in the BAD curriculum may not enroll in this course.

BUS 399 Field Experience (Community Participation) 2–8 hrs.
A program of independent study combining academic work with social, environmental, civic or political field work. Prerequisites: A written outline of the student's project, approved by a faculty supervisor, and approval from the office of the dean.

BUS 594 International Business Seminar 1–6 hrs.
A foreign study seminar designed for qualified and capable undergraduate students, graduate students, teachers and business executives. The seminar introduces participants to a firsthand knowledge of business operations abroad through on-site inspection of foreign manufacturing, marketing, financial, and governmental organizations, supplemented by coordinated faculty lectures and assigned reading. Students completing such a seminar may receive credit in the Department of Accountancy Business Information Systems, Finance and Commercial Law, Management, or Marketing, if approved by the head of the department prior to registration for the seminar. Students may receive six hours credit in any combination of departments as described, provided the seminar is planned with that combination in mind. No student will receive credit under the course plan indicated here for work done in seminars planned and conducted by other institutions or for work done in independent seminars unless expressly approved by the Haworth College of Business.
ACCOUNTANCY

Jack M. Ruhl, Chair
Alan I. Blankley
Hans J. Dykstra
J. Patrick Forrest
Charles E. Hines, Jr.
David N. Hurt
Jerry G. Kreuze
Sheidoon A. Langsang
Lisa H. Martin
William C. Morris
Gale E. Newell
David Rozelle
Kathleen E. Sinning
David Rozelle
Roger Y. W. Tang
William R. Welke

The Department of Accountancy prepares its majors for positions as accountants in industrial, governmental, and public accounting enterprises. Accountancy majors must complete the business administration curriculum.

Accountancy Courses (ACTY)

ACTY 201 Accounting Concepts and Applications
3 hrs. A study of the fundamental concepts and applications of accounting. Especially designed for the non-business student. This course does not serve as a prerequisite for any other accounting course and cannot be used for a major or minor in business. Not open to students with credit in accounting.

ACTY 210 Principles of Accounting
3 hrs. An introductory course in accounting which includes the recording and reporting of business transactions, and the measuring, planning and controlling of business income, assets and equities.

ACTY 211 Principles of Accounting
3 hrs. A continuation of course 210 with emphasis on managerial/cost accounting concepts. Prerequisite: 210.

ACTY 310 Financial Accounting I
3 hrs. This course reviews the accounting cycle, related accounting records and theory. Accounting principles and reporting requirements for current assets, plant and equipment, intangibles, and other assets are also studied. Prerequisite: 211.

ACTY 311 Financial Accounting II
3 hrs. This course is a continuation of Accounting 310. Accounting principles and reporting requirements for liabilities, long-term investments, and stockholders' equity are studied. Other topics generally included are the study of the Statement of Changes in Financial Position, the recording and reporting of accounting changes, the analysis of financial statements, and the study of statements adjusted for inflation. Prerequisite: 310.

ACTY 313 Accounting Information Systems
3 hrs. A study of concepts, organization, technology, and control of an accounting information system. Includes a study of specific application (payroll, accounts receivable, etc.), with particular emphasis on data input, processing, and output utilizing the computer. Prerequisites: ACTY 211, BUS 102.

ACTY 322 Managerial Accounting—Concepts and Practices
3 hrs. A study of the accounting methodology and concepts that have been developed to serve managers in decision-making for planning and control. Includes budgeting, standard costing, variance analysis, incremental analysis, cost and profit analysis, relevant costing, and product costing concepts and practices. Prerequisite: 211.

ACTY 324 Income Tax Accounting
3 hrs. A study of the federal tax laws as they apply to individuals, partnerships, and corporations. While the course is primarily organized around the individual taxpayer, particular emphasis is given to the concepts that apply to all reporting entities. Prerequisite: 211.

ACTY 410 Internship in Accounting
1–4 hrs. Under the direction of a faculty coordinator, students obtain full-time accounting related employment experience. Participation is limited to available internships and competitive selection by the faculty coordinator and potential employers. Students are required to write a final report. Each employer will provide an evaluation of the student. The course must be taken on a credit/no credit basis and does not count toward the accounting major. Prerequisite: Written consent of the faculty coordinator.

ACTY 411 Advanced Accounting
3 hrs. The study of entities and special transactions not covered in Financial Accounting I and II. Particular emphasis is given to partnership equity accounting, fund accounting, accounting by agencies and branches, business combinations, reporting by parent-subsidary consolidated entities (including foreign subsidiaries). Prerequisite: ACTY 311.

ACTY 414 Institutional Accounting
3 hrs. A comprehensive study of the recording of transactions by government units and the preparation of financial statements by fund entities. City government is the basic unit of study; however, school districts, universities, and hospitals are given brief coverage to illustrate the similarity in accounting for all not-for-profit entities. Prerequisite: 211.

ACTY 416 Auditing
3 hrs. The theory and practice of auditing business enterprises and government agencies. Topics include a review of professional pronouncements, internal control concepts, ethics, and a discussion of audit objectives. Prerequisites: ACTY 311, ACTY 313 or their equivalents.

ACTY 512 Accounting System and Practice
3 hrs. A study of financial accounting theory and practice. The course is organized around pronouncements of the Financial Accounting Standards Board and other authoritative bodies. Case studies are used to illustrate application of the concepts of such pronouncements. Prerequisite: Senior standing and accounting major.

ACTY 522 Cost Accounting—Theory and Practice
3 hrs. A study of the accounting methodology and concepts that have been developed to account for both products and period costs of a business enterprise. Includes product costing for job order and continuous process situations with related systems concepts, cost allocations among departments of an enterprise, joint and by-product costing, and standard costing as it relates to inventory pricing. Prerequisite: ACTY 312.

ACTY 423 Studies in Tax Accounting
3 hrs. Special studies related to tax problems of individuals, partnerships, and corporations. Emphasis is on federal taxation of corporations, trusts and estates. Prerequisite: ACTY 324.

Open to Underclass and Graduate Students

ACTY 511 Advanced Accounting
3 hrs. The study of entities and special transactions not covered in Financial Accounting I and II. Particular emphasis is given to partnership equity accounting, fund accounting, accounting by agencies and branches, business combinations, reporting by parent-subsidary consolidated entities (including foreign subsidiaries). Prerequisite: ACTY 311 or equivalent.

ACTY 513 Advanced Accounting Systems
3 hrs. Special studies related to computerized accounting packages currently used in practice. A case-study approach involving typical business transactions, internal accounting control review, flowcharting, financial statement preparation, special reports, and decision making processes using specific software packages. Prerequisite: ACTY 416.

ACTY 514 Institutional Accounting
3 hrs. A comprehensive study of the recording of transactions by government units and the preparation of financial statements by fund entities. City government is the basic unit of study; however, school districts, universities, and hospitals are given brief coverage to illustrate the similarity in accounting for all not-for-profit entities. Prerequisite: 211 or written consent of instructor.

ACTY 516 Auditing
3 hrs. The theory and practice of auditing business enterprises and government agencies. Topics include a review of professional pronouncements, internal control concepts, ethics, and a discussion of audit objectives. Prerequisites: ACTY 311, ACTY 313 or their equivalents.

ACTY 518 Accounting Theory and Problems
3 hrs. A study of financial accounting theory and practice. The course is organized around pronouncements of the Financial Accounting Standards Board and other authoritative bodies. Case studies are used to illustrate application of the concepts of such pronouncements. Prerequisite: Senior standing and accounting major.

ACTY 522 Cost Accounting—Theory and Practice
3 hrs. A study of the accounting methodology and concepts that have been developed to account for both products and period costs of a business enterprise. Includes product costing for job order and continuous process situations with related systems concepts, cost allocations among departments of an enterprise, joint and by-product costing, and standard costing as it relates to inventory pricing. Prerequisite: ACTY 322.
BUSINESS INFORMATION SYSTEMS

Joel P. Bowman, Chair
Robert A. Allen
Kuriakose A. Thanopilly
Olga M. Bonfiglio
Earl E. Halvas
Marcia M. Zeppolino
Pamela S. Rooney
Alan I. Rea
Nancy M. Schullery
Hung-Lian Tang
Andrew S. Targowski
Douglas E. White
Judy A. Yeager

The Department of Business Information Systems offers three undergraduate programs of study: (1) Administrative Systems (ADS), (2) Business Communication (BCM), and (3) Computer Information Systems (CIS).

Business Information Systems Courses (BIS)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

BIS 100 Introduction to Business Writing 3 hrs.
A course dealing with those areas of written communication necessary for the development of basic business writing skills. Designed as a foundation for subsequent business writing/communication courses. Credit for this course will not apply toward the number of credits needed for graduation. (Credit/No Credit)

BIS 102 Introduction to Information Processing 3 hrs.
An introductory course in Computer Literacy that will prepare students to be relatively sophisticated computer users. Emphasis is on microcomputer applications. A student may not receive credit for both BIS 102 and CS 105, SOC 182, or FCS 225.

BIS 142 Informational Writing 3 hrs.
Development of the basic composition skills required of the competent writer in business and professions. Through continued directed practice in writing, students develop competence in the organization and presentation of facts and information in writing. This course fulfills the University college-level writing requirement.

BIS 182 Keyboarding 2 hrs.
To provide basic touch keyboarding skill to input to typewriters and computers efficiently. To develop speed and accuracy on the alphabetic, numeric, and symbol keys.

BIS 183 Formatting 2 hrs.
An opportunity to build keyboarding speed and to learn to format common business information such as letters, memos, reports, and tabular material. Prerequisite: BIS 182.

BIS 242 Organizational Communication 3 hrs.
A study of communication in modern organizations and the application of communication theory to information systems and current business practices. Group decision-making is emphasized.

BIS 260 Microcomputer Business Applications 3 hrs.
A study of the role of microcomputers in business. Through hands-on exposure to small systems, students learn about microcomputer hardware configurations, business software application packages, and advanced BASIC programming techniques, especially file creation and manipulation, applicable to micros. Prerequisite: BIS 102 or equivalent.

BIS 261 COBOL Programming 3 hrs.
Computer programming in the most widely used language for business type application. Programming will be done in timesharing and/or batch sequential mode. Current computer developments are discussed. Prerequisite: BIS 102 or equivalent.

BIS 264 Report Program Generator 3 hrs.
Study of feasibility and applicability of RPG (Report Program Generator) computer programming to business problems. Included are the design, coding, compiling and execution of programs in RPG, RPG II, and RPG III. Prerequisite: BIS 102.

BIS 340 Principles of Business Communication 3 hrs.
This course focuses on written communication in modern organizations. Students will apply communication strategies in formulating objectives, structuring messages, and choosing appropriate communication channels to solve business problems. Assignments will center on writing appropriate to the business disciplines. Fulfills University Baccalaureate Writing Requirement for BBA students. Prerequisite: BIS 142 or equivalent; junior standing.

BIS 343 Report Writing 3 hrs.
Intensive discussion and practice of the commonly used report-writing techniques. The study includes various formats and graphics of reports. In addition to writing several brief reports, students prepare a complete research report, give oral reports. Prerequisite: BIS 340.

BIS 344 Business Communication Problems and Practices 3 hrs.
An in-depth analysis of communication problems and practices as they occur in modern business. Special emphasis is given to development of business writing skills as they apply to decision making, report writing, and business communication systems. Prerequisite: BIS 340.

BIS 350 Management Information Systems 3 hrs.
Provides an understanding of and experience in the integration of the computer and information systems into the management process. Incorporates the tools, techniques, and applications for managing and using computerized information systems in business environments for improved productivity. Prerequisites: BIS 102 and MGMT 300.

BIS 360 Information Systems Analysis and Design 3 hrs.
A study of the total systems analysis and design process including data collection, problem definition, systems analysis and design, systems implementation, and application of the tools and techniques of the systems professional. Prerequisite: BIS 260 and BIS 350.

BIS 362 Advanced Programming 3 hrs.
Continuation of BIS 261, including advanced treatment of sequential access, plus index sequential and random access, report writer, library routines, precompilers, documentation, efficiency, and data-base management systems. Prerequisite: BIS 261.
BIS 386 Advanced Office Systems
3 hrs.
A study of the trends and impacts of automated office systems on the work process, human resources, workstations and environments, and productivity. An examination of planning, integration, and management technology and ergonomics in the information (white-collar) environment.

BIS 388 Records Management
3 hrs.
The study of efficient methods, procedures, and systems for processing, controlling, and disposing of organizational records. Includes records inventory and classification, information retention and retrieval, and the administration of office information systems.

BIS 400 Topics in Business Communication
3 hrs.
An intensive study of a topic in business communication such as a communication system, business media, business publicity and other. The topic will be announced in advance. May be repeated for credit.

BIS 410 Internship
1-4 hrs.
Under the direction of a faculty advisor, qualified students may engage in a variety of professional experiences. Scheduled meetings with advisor and written experience reports required. May be repeated for a maximum of 4 hours credit. Prerequisite: Approved application required.

BIS 442 Senior Seminar in Business Communication
3 hrs.
The senior seminar in business communication is a capstone course designed to teach participants how to analyze communication in modern business organizations. Focus of the course will be on evaluating and improving organizational communication. Seminar emphasis will vary depending upon semester and instructor.

BIS 454 Intercultural Business Communication
3 hrs.
Intercultural Business Communication is designed to develop the effectiveness of students’ communication skills with culturally diverse audiences, both at home and abroad. Prerequisite: BIS 340.

BIS 456 Office Management
3 hrs.
Procedures of office administration with attention to supervisory patterns in development, appraisal, and management of human resources.

BIS 458 Topics in Administrative Systems
3 hrs.
Includes an intensive study of a selected topic in administrative systems such as communication audits, consumer relations, office systems, work measurement and simplification, forms control and design, and others. The topic will be announced in advance. May be repeated for credit.

BIS 462 Applied CIS Development Project
3 hrs.
Application of computer programming and system development concepts, principles, and practices to a comprehensive system development project. A team approach is used to analyze, design, and document realistic systems of moderate complexity. Use of project management methodologies, project scheduling and control techniques, formal presentations, and group dynamics in the solution of information system problems. Development of a database to support the system. Prerequisite: BIS 360.

BIS 464 Quantitative Methods for Information Systems
3 hrs.
Students learn how quantitative models, in conjunction with databases internal and external to the organization, can be used to develop information systems to assist on decision making. Students apply these concepts by developing actual decision support systems/expert systems as part of their course work. Prerequisite: BIS 380.

BIS 465 Trends in Information Systems
3 hrs.
This course is designed to familiarize students with “leading edge” issues of computer information systems. Because the computer field continues to evolve at a rapid rate, the specific content of the course will change from year to year. Prerequisite: BIS 350.

BIS 466 Global Information Infrastructure
3 hrs.
Examines the features of local, metropolitan, wide area, and value-added networks. Evolving standards, protocols, interfaces, and networking strategies will be studied. Prerequisite: Any BIS 300-level course.

BIS 474 Information Resource Management
3 hrs.
This seminar course provides an overview of the management of information systems resources. The student will gain an insight and understanding of the subject through study of the fundamentals of organizing, planning, controlling, and other significant management tasks that relate to management of information resources. Prerequisite: BIS 462.

BIS 480 Business Communication Technology
3 hrs.
Business Communication Technology reviews the changes in communication strategies and procedures being brought about by modern technology, especially the computer. The course provides a theoretical framework for understanding the application of communication technology in modern business organizations and affords hands-on experience with word processing, electronic mail, electronic conferencing systems, electronic databases, computer graphics, FAX, voice mail, and desktop publishing procedures. Prerequisites: BIS 102 or CS 105; and a 300-level or 400-level writing class.

BIS 483 Business Publications and Presentations
3 hrs.
Business Publications and Presentations provides students actual experience in developing numerous types of publications and presentations—from conception through camera-ready production. The course provides a working understanding of the processes involved in determining page layout and design and the psychology used in various components of the document production and presentations. While working on collaborative projects, students will benefit from extensive interaction with community professionals involved in the designing, typesetting, printing, and distributing of business documentation. Hands-on experience is also provided through training in advanced word processing, graphics generation, scanning techniques, file transfers, and page layout techniques. Prerequisites: BIS 102, BIS 340.

BIS 484 Micrographics and Reprographics
3 hrs.
Fundamentals of micrographics and reprographics, including basic components of technology, legal implications, systems applications and trends, feasibility, and industry standards.

BIS 486 Corporate Records Centers
3 hrs.
An examination of commercial and corporate records centers. Includes services, equipment, systems, and technology, addresses functions of planning, staffing, operating, and managing records centers. Prerequisite: BIS 388 or permission.

BIS 555 Topics in Computer Information Systems
3 hrs.
Special topics appropriate to business applications such as data base management systems, structured concepts, networking, programming documentation and efficiency, planning, organizing and directing management information systems. May be repeated for credit.

BIS 560 Office Systems and Procedures
3 hrs.
A study of paperwork systems and procedures. Emphasis is placed on office systems and the techniques of systems development including fact gathering and recording, work analysis, and office work simplification and measurement.

BIS 596 Independent Study
1-4 hrs.
A directed independent project in an area of Administrative Systems, Business Communication, or Computer Information Systems. Prerequisite: Approved application required.

BIS 598 Readings
1-4 hrs.
A series of direct readings in an area of Administrative Systems, Business Communication, or Computer Information Systems. Prerequisite: Approved application required.
FINANCE AND COMMERCIAL LAW

Christopher M. Korth, Chair
Robert Balk
Nicholas C. Batch
David Bunnie
James DeMello
Adrian Edwards
Thomas Gossman
Norman Hawker
A. D. Issa
Robert Jones
Kenneth Kennedy
C. R. Krishna-Swamy
Inayat Mangla
F. William McCarty
Ali Metwalli
Christos Pantzalis
Craig Peterson
Ajay Samant
Tim F. Scheu
Leo Stevenson
Carol VanAuker-Haught

Majors may be obtained in finance, general business, insurance, and real estate. Minors are available in finance, general business, insurance, and real estate, as well as law. The general business major and minor require students to select a logical combination of courses from the several departments within the Haworth College of Business. All majors and minors (except the general business minor when completed by a student having a business major) in this department must be approved by the assigned advisor.

Finance and Commercial Law Courses (FCL)

FINANCE AREA

FCL 310 Introduction to Financial Markets 3 hrs.
A survey of financial markets and intermediaries with emphasis on their structure, social justification, and current status. This course provides additional background and advanced study in finance and a practical foundation for those students interested in an exposure to the financial system. Prerequisite: ACTY 210.

FCL 320 Business Finance 3 hrs.
Presents a basis for understanding the financial management function of the business enterprise. Considers financial principles and techniques essential for planning and controlling profitability and liquidity of assets, planning capital structure and cost of capital, and utilizing financial instruments and institutions for capital raising. Prerequisites: MATH 216 and ACTY 210.

FCL 330 Real Estate Fundamentals 3 hrs.
Supplies the basis for comprehension of the basic economic characteristics and the organization and techniques used in the real estate business. Treats real estate resources, marketing, financing, valuation, and trends.

FCL 331 Real Estate Finance 3 hrs.
Considers the field of real estate finance from the viewpoint of sources of funds, various real estate contracts, valuation techniques, appraisals of residential and income properties and the various aspects of risk analysis in real estate. Prerequisite: FCL 320 and FCL 330, or consent of instructor.

FCL 344 Quantitative Applications in Finance 3 hrs.
The applications of quantitative analysis to finance. Emphasis will be placed on the techniques available in financial decision making, determination of financial relationships, and financial forecasting. Applications in corporate financial management, investment analysis, and financial institutions. Prerequisite: FCL 320.

FCL 351 Investment Analysis 3 hrs.
A survey of the securities markets from the viewpoint of the novice investor. This course includes a study of market operations, trading techniques, special investment vehicles such as options and warrants, and a consideration of the investment objectives and practices of institutional investors. Prerequisite: FCL 320 or consent of instructor.

FCL 360 Risk and Insurance 3 hrs.
A comprehensive course which considers the nature and orientation of insurance risks and their management. Major business and personal risks are analyzed and their insurance treatment evaluated; all the functional aspects of insurer operations. The impact of insurance on public policy is also considered. Prerequisite: FCL 320.

FCL 361 Life and Health Insurance 3 hrs.
This course combines a discussion of the economic aspects of life and health insurance with basic analysis of life insurance and annuity contracts. It also includes investigation of the major functional aspects of life and health insurance companies. Prerequisites: FCL 320, and FCL 360.

FCL 362 Property and Liability Insurance 3 hrs.
This course includes analytical study of the major property and liability contracts, together with discussion of the principal functional aspects of property and liability company operations. Prerequisite: FCL 360.

FCL 412 Global Financial Markets 3 hrs.
This course covers the functions and operations of global financial markets. Securities markets, along with commercial and investment banking, will be studied. Consideration will be given to issues in international debt, equity, and derivative securities markets. Policy implications for investors as well as corporations and governments are included. Prerequisites: FCL 310 and FCL 320.

FCL 414 Management of Financial Institutions 3 hrs.
This course is devoted to in-depth analysis of the operations of selected financial institutions with emphasis on management decision-making processes. Case analysis and analytical problems are included in the course content. Prerequisite: FCL 310.

FCL 425 Asset Management: Theory and Practice 3 hrs.
An analytical approach to the study of the concepts and theories underlying asset valuation and management. Department from this theoretical framework, the course includes cases covering financial decision-making processes in the areas of financial analysis and forecasting, asset valuation and working capital management. Prerequisite: FCL 320.

FCL 426 Corporate Financing: Theory and Practice 3 hrs.
An analytical approach to the study of the concepts and theories underlying the financing decisions of business enterprises.
The topics studied by means of case studies in this course include multiple-line insurance operations, special problems in functional areas of industry operations and personal and commercial risk surveys and analysis. Prerequisite: FCL 362.

**LAW AREA**

**FCL 380 Legal Environment**
3 hrs.
An introduction to the legal environment in society. An examination of the role of law in society, the structure of the American legal system and the basic legal principles governing individual conduct.

**FCL 381 Ecology and the Law**
3 hrs.
The study of law as it relates to people’s efforts to protect the environment. Included will be an examination of traditional common law principles and federal and state statutes relating to environmental protection. Analysis of recent cases, and discussion of techniques for the effective use of administrative procedures of the various environmental protection agencies.

**FCL 382 Business Law**
3 hrs.
The study of law affecting common business transactions. The course examines the formation and performance of contracts, basic types of property interests, and key aspects of laws affecting commercial paper. Sales law, creditor-debtor relationships, and estate planning laws are briefly discussed. Prerequisite: FCL 380.

**FCL 383 Commercial Law**
3 hrs.
The study of law affecting the organization and operation of business firms. Organizational concerns focus on partnership and corporation laws and regulations affecting the issuing and sale of corporate securities. The agency relationship and related laws that affect the operation of business activities are also examined. Prerequisite: FCL 380.

**FCL 384 Criminal Law and Procedure**
4 hrs.
This course surveys the laws and procedures underlying the American criminal justice system. After an introduction to the philosophy and sources of criminal law, the course investigates the legal definition of particular crimes and studies their elements. Legal procedures from arrest, through pre-trial and trial phases, to sentencing, probation and parole are also considered, together with relevant evidentiary topics. Prerequisite: SOC 462 or PSCL 325 or FCL 380 or consent of Instructor.

**FCL 480 Tort Law and Liability**
3 hrs.
The study of individual and business rights and liabilities with respect to negligence, intentional wrongs, libel, misrepresentation, and insurance aspects thereof. Prerequisite: FCL 380.

**FCL 482 Management and Labor Relations Law**
3 hrs.
A survey of laws affecting management-labor relations. The course examines general employer-employee relationships, emphasizing the hiring and firing of employees, employee benefit programs, workman’s compensation laws, and civil rights rules and regulations. Prerequisite: FCL 380.

**FCL 483 Real Estate Law**
3 hrs.
The study of land ownership, sales agreements, mortgages, land contracts, leases, zoning, condemnation and urban land development problems. Prerequisite: FCL 380.

**FCL 484 International Business Law**
3 hrs.
A study of national, regional and international laws which affect the conduct of international business. An examination of the legal regulations which promote or restrain trade or investment by international business firms. Prerequisite: FCL 380.

**FCL 485 Governmental Regulations of Business**
3 hrs.
Examines the laws, rules and regulations that affect most business enterprises. Substantive laws affecting the firm’s obligation to employees, stockholders and the general public including securities regulation and insider trading, employment discrimination, and consumer protection are emphasized. Prerequisite: FCL 380.

**FCL 486 Marketing and Sales Law**
3 hrs.
The course examines the law as it applies to the sale of goods, warranties affecting such sales and the methods of financing those sales. Legal obligations imposed upon and risks assumed by the seller are emphasized. Prerequisite: FCL 380.

**FCL 583 Real Estate Law**
3 hrs.
The study of land ownership, sales agreements, mortgages, land contracts, leases, zoning, condemnation and urban land development problems. Prerequisite: FCL 380 or consent.

**FCL 585 Governmental Regulations of Business**
3 hrs.
Examines the laws, rules and regulations at the federal, state and local level which affect most business enterprises. Substantive laws affecting the firm’s obligation to employees, stockholders and the general public are examined as are procedural laws affecting the regulation of the firm by public institutions. Prerequisite: FCL 380 or consent.

**FCL 586 Marketing and Sales Law**
3 hrs.
The course examines the law as it applies to the sale of goods, warranties affecting such sales and the methods of financing those sales. Legal obligations imposed upon and risks assumed by the seller are emphasized. Prerequisite: FCL 380 or consent.

**GENERAL AREA**

**FCL 494 International Business Seminar**
1-6 hrs.
A foreign study seminar designed for qualified and capable undergraduate students, graduate students, teachers and business executives. The seminar introduces participants to a firsthand knowledge of business operations abroad through on-site inspection of foreign manufacturing, marketing, financial, and governmental organizations, supplemented by coordinated faculty lectures and assigned reading. Students completing such a seminar may receive credit in the Departments of Accountability, Business Information Systems, Finance and Commercial Law, Marketing, if approved by the head of the department prior to registration for the seminar. Students may receive six hours credit in any combination of departments as described, provided the seminar is planned with that combination in mind. No student will receive credit under the course plan indicated here except for work done in seminars planned and conducted or approved by the Haworth College of Business.

**FCL 498 Readings and Research in Finance and Commercial Law**
1-3 hrs.
Directed individual study of finance or legal problems which are not treated in departmental course offerings. Prerequisite: Written consent of instructor and department chair is required.
MANAGEMENT

Sanjay Ahire
Raymond E. Allie
Henry H. Bearn
Thomas A. Carey
Satish Deshpande
Dan Farrell
David Flanagan
Elizabeth George
Damodor Gohar
J. Michael Keenan
Robert Landeros
Claudio Milman
K.C. O'Shaughnessy
Trudy G. Verser

Management Courses (MGMT)

(Courses described in italics are approved for General Education.)

MGMT 210 Small Business Management
3 hrs.
A study of the fundamental principles involved in the operation of a small business enterprise. The structure, functions, and basic operating principles will be discussed and developed. Prerequisite: Non-BBA students only.

MGMT 300 Fundamentals of Management
3 hrs.
An introduction to the concepts, theories, models, and techniques central to the practice of management. Historical and contemporary thought are presented in the context of the behavioral, structural, functional, quantitative, and ethical aspects of managing organizations. Cross-cultural aspects of management are also explored. Expected outcomes for the student are: a general familiarity with the management process, and limited situational application of course content. Prerequisite: Junior standing.

MGMT 301 Management Analysis and Behavior (I)
3 hrs.
Management analysis and behavior will be presented and practiced by the students in small task-oriented groups working on real problems. Group decision making, problem solving, and business presentations are emphasized. In addition, the student will learn the costs and benefits of assuming different group roles. Prerequisites: MGMT 300.

MGMT 302 Management Analysis and Behavior (II)
3 hrs.
An extension of MGMT 301.

MGMT 310 Survey of Management
3 hrs.
An introduction for non-business students to the key concepts and issues underlying management. The course includes a survey of management history and theory, management organization, and the process of management. Not open to PBA students or business majors or minors.

MGMT 314 Business Ownership and Management
3 hrs.
This course is designed to supply the specific knowledge and skills a business-trained individual needs after founding or buying an independent firm. Specific applications of business areas such as finance, advertising, accounting and tax law for the owner/operator of a small business will be addressed. It is assumed that students have a basic knowledge of business fundamentals before taking this course. Prerequisites: MGMT 300, MKTG 250.

MGMT 350 Managing Diversity in Organizations
3 hrs.
Knowledge and skills needed to manage an increasingly diverse work force are explored. The impact of gender, race, ethnicity, culture, and other dimensions of a diverse work force on organizations are examined.

MGMT 352 Human Resource Management
3 hrs.
This course covers various HRM functions including work force needs; staffing and development; organization and individual appraisal; employee compensation and benefits; safety and health; approaches to employee problems; and labor relations. Open also to Employee Assistance Academic Program majors. Prerequisite: MGMT 300.

MGMT 360 Quantitative Methods for Business Decisions
3 hrs.
Introduction to quantitative methods and their application to the functional areas of business. Topics covered will include system modeling, probability theory, forecasting methods, decision making under conditions of certainty, risk and uncertainty, inventory models, linear programming, elementary queuing theory, and introduction to techniques of mathematical simulation. Prerequisite: MATH 216 or equivalent.

MGMT 400 Topics in Management
3 hrs.
An examination of advanced topical problems in management. (Repeatably)

MGMT 404 Business and Society
3 hrs.
A systematic analysis and evaluation of the institutions and other external and internal factors which shape the role of business in the United States. Illustrative topics: pluralism, values, ethics, social responsibility, the business/government relationship, productivity, corporate governance and social responsiveness.

MGMT 410 Multinational Management
3 hrs.
An examination of management strategy, controls, environmental influences of the multinational corporation with consideration of geographic factors. The management function abroad will be examined in light of the cultural assumptions underlying U.S. management and will deal with the necessary modification for effective operations in a cross-cultural environment.

MGMT 411 Managing in Latin America
3 hrs.
This course introduces students to the Latin American business environment. Cultural differences in Latin America and how they affect business operations will be addressed. By examining cultural and business factors, students will identify the critical strategic issues and operating challenges of managing operations in Latin America.

MGMT 412 Management Internship
1–4 hrs.
Students may engage in a variety of professional experiences under the direction of a faculty advisor. Each internship is supervised by a faculty member, requires written term reports by the intern, and requires a written evaluation of the intern's performance by the firm hosting the internship. Repeatable for a maximum of 4 hours credit. Graded credit/no credit. Does not count toward the major.

MGMT 414 Entrepreneurship
3 hrs.
An elective for students interested in entrepreneurial careers. Primary attention given to managing a new or rapidly growing business. Alternative sources of capital are examined. Various growth strategies considered along with personal requirements for entrepreneurial success. Prerequisite: MGMT 300, FCL 320, FCL 380, MKTG 250 or department consent.

MGMT 432 Compensation Administration
3 hrs.
This course is an advanced introduction to compensation management. The course covers four general topics: wages and salary administration, performance appraisal, incentive systems, and employee benefits. Intended to emphasize application, the course assumes a knowledge of motivation and reinforcement theory. Prerequisites: MGMT 300, MGMT 352, and MGMT 360.

MGMT 453 Organizational Behavior
3 hrs.
A study of current theory, research, and practice regarding variables that influence human behavior in complex organizations. Emphasis is placed on models relevant to human productivity, satisfaction, retention, and learning in organizational settings.

MGMT 454 Employment Relations
3 hrs.
This course is designed to present methods and concepts of managing employment relations. How labor unions operate and how businesses avoid or become involved with labor unions are investigated. Negotiation, conflict resolution, and contract administration processes and their operation are covered. The goals, purposes and history of organized labor are examined. Maintenance of the quality of relationships between employees and organizations is explored. Prerequisites: MGMT 300, MGMT 352.

MGMT 460 Decision Analysis
3 hrs.
This course is designed to present methods and concepts of decision making in uncertain business environments. It will address both the philosophy and the methodology of scientific decision processes to supplement intuitive decision making. The objective of the course is to provide a clear understanding of both the limitations and potential benefits of formal analysis and information gathering. Some of the topics covered include: utility functions, values of perfect and imperfect information, and preference assessment. Prerequisite: MGMT 360.

MGMT 463 Production and Operations Management
3 hrs.
Economic and socio-technical characteristics of the major types of production systems. Managerial aspects of workplace and facility design. Simple models for controlling operations in purposeful organizations. Prerequisites: MGMT 360 or equivalent (BIS 464, FCL 420, ECON 400, MKTG 471).

MGMT 464 Production Management and Control
3 hrs.
Quantitative and computer-based methods of planning and controlling operations in manufacturing industries and service organizations. Areas covered in depth include scheduling, aggregate planning, and inventory control. This course is intended for students interested in quantitative applications in business as well as management majors concentrating in production and operations management. Prerequisite: MGMT 360.

MGMT 465 Managing for Quality
3 hrs.
The course will examine the total quality management (TQM) philosophy. The topics include benchmarking, continuous improvement, employee participation, statistical control charts and quality tools.
detailed discussion of the Deming, Juran and Crosby principles is undertaken. Also, Malcolm Baldridge Award and ISO 9000 certification are examined. To further enhance understanding about the TQM philosophy, the principles are applied in the classroom. Prerequisites: MGMT 300 and MKTG 250.

MGMT 470 Operations Simulation 3 hrs.
Simulation is a managerial technique that imitates the operations of a real or planned system. It is applied in the analysis and improvement of system operations involving uncertainty and interactions between system components. It has been widely used by both manufacturing and service firms to evaluate effectiveness of operations strategies. This course introduces students to development, validation, and use of computer-based simulation models using software such as General Purpose Simulation language (GPSS/H). Students will use simulation approach to evaluate improvements in production/service systems. Prerequisites: MGMT 360 or equivalent.

MGMT 480 Materials Management Strategy 3 hrs.
Introduces students to a framework for making longer-term decisions in operations management, and stresses the importance of developing and executing a production/operations management strategy which is consistent with the business strategy of the organization. An emphasis will also be placed on production/operations capability as a competitive weapon. This course functions as the capstone experience in the Production/Operations Management concentration and students are expected to have specialized knowledge for analyzing the operating characteristics of organizations. Prerequisites: MGMT 463, MGMT 464, or equivalent.

MGMT 481 Integrated Materials Systems 3 hrs.
This course examines the interrelationships and coordination among the various activities necessary for the development and operations of materials and technology systems. Emphasis will be placed on engineering purchasing, logistics, and production systems. Students will have the opportunity to synthesize the concepts and concerns of team building, problem solving, communication, and organizational management. Prerequisites: MGMT 464, MGMT 372, MGMT 484, ME 220.

MGMT 482 Technology Management 3 hrs.
The management of technology in various sectors of the economy and its linkage with a firm's competitive strategy. Topics will include technology and competitive position, management of existing technology (technical requirements and human resource management issues in low technology versus high technology contexts), planning for a new technology (technology audit, technological forecasting, evaluations of new technologies), new technology implementation (R&D, project management, managing technical change, managing change of organizational culture), and factors affecting a firm's ability to innovate. Prerequisite: MGMT 300 or equivalent.

MGMT 495 Independent Study 1-4 hrs.
Independent research on specialized management topics. Prerequisite: Consent of instructor. (Repeatable)

MGMT 499 Strategic Management 3 hrs.
An integrative capstone course focusing on the formulation and implementation of organizational policy and strategy from the perspective of the general manager. Prerequisite: Senior standing and successful completion of all course courses.

MGMT 512 Women in Management: Male, Female, and Organizational Perspectives 3 hrs.
A seminar dealing with the changing roles of women in business. Emphasis is given to the unique needs of women aspiring to managerial and professional ranks. Changes in attitudes and behaviors of women, men and organizations and the implications of change for traditional male-female relationships and organizational operations are explored.

MARKETING

Andrew A. Brogowicz, Chair
Joseph J. Belonax
Lowell E. Crow
Linda M. Deliere
Frank Gambino
Geralyn Heystek
Paul Lane
Hanjoon Lee
Jay D. Lindquist
Mushfaq Luqmani
Edward J. Mayo
Bette Parker
Richard E. Pank
Zahir A. Quareshi
Robert Reck
Judith M. Whipple

Marketing Courses (MKTG)

MKTG 250 Marketing Principles 3 hrs.
Introduction to the role of marketing in the U.S. and global economy. Emphasis on how organizations create customer value through marketing strategy planning. Topics covered include buyer behavior, market segmentation, product planning, service quality, promotion, pricing, and managing channel relationships. Prerequisite: ECON 201 and sophomore standing.

MKTG 290 Food Marketing Systems 3 hrs.
An introductory course designed to provide an overview of food marketing systems. The marketing functions performed by producers, manufacturers, wholesalers, and retailers are examined, along with consumer shopping, purchasing, and consumption behavior. Prerequisite: Sophomore standing.

MKTG 360 Professional Selling 3 hrs.
An introduction to the principles of selling. Includes study of selling in our present economy, analysis of the steps in a sales presentation, and a classroom demonstration. Prerequisite: MKTG 250 or departmental approval.

MKTG 371 Marketing Research 3 hrs.
An introduction to the research process as it aids decision making in marketing management. The focus is on the stages of research process from the planning of the research to gathering, analysis, and interpretation of data as it relates to marketing management. Prerequisites: MKTG 250, MATH 216.

MKTG 372 Purchasing Management 3 hrs.
The organization and operation of the purchasing function, responsibilities and policies; problems confronting the purchasing department; relationships with other departments and suppliers. Prerequisite: MKTG 250.

MKTG 373 Introduction to Direct Marketing 3 hrs.
A survey course in direct marketing intended for majors and minors other than Advertising. Introduction to the marketing of goods and services to consumers and businesses using direct mail, catalog, telemarketing, and electronic media. Prerequisite: MKTG 250.
MKTG 374 Advertising 3 hrs.
A comprehensive survey of basic principles and practices of advertising and their relationship to the economy, society, and the system of mass communication. Prerequisite: MKTG 250.

MKTG 375 Principles of Retailing 3 hrs.
An introductory course designed to identify the fundamentals, challenges, and responsibilities of today's retailers. The topics covered include human resources and store operations which help successful retailers anticipate, interpret, adapt, and react to the changing environment. Prerequisite: MKTG 250.

MKTG 376 Sales Administration 3 hrs.
Topics include the role of personal selling in the firm, determination of market and sales potential, recruiting, training, sales compensation, territories and quotas, motivation, measuring selling effectiveness. Prerequisite: MKTG 250.

MKTG 377 Sales Promotion 3 hrs.
The course is designed to introduce the student to the principles of advertising and sales promotion. Included will be topics related to the development and implementation of direct inducement or incentive programs offered to members of the sales force, distributors, or consumers with the primary objective of effectuating an immediate sale. Prerequisite: MKTG 250.

MKTG 391 Food Merchandising 3 hrs.
A course designed to acquaint students with merchandising principles and applications related to the marketing of food and other consumer products. Emphasis will focus on product and category management, advertising, sales promotion, pricing, purchasing and inventory control, and changing retail formats. The impact of consumer demographics and lifestyles will be related to store design, product mix, and promotion methods used by retailers, manufacturers, and wholesalers. Prerequisite: MKTG 250, MKTG 290.

MKTG 396 Food Industry Survey 3 hrs.
A two-week intensive survey and tour of midwestern food processors, wholesalers, and retailers, including presentations by industry executives. Students observe industry practices related to marketing, production, packaging, distribution, research, and technology development. Written reports are required. Bus travel and overnight stays are necessary. A fee for transportation and housing is required. Prerequisite: MKTG 290.

MKTG 397 Food Marketing Field Experience 1–4 hrs.
Students are employed full-time in professional food industry work experiences under the supervision of participating employers. An application form, signed by the student's food marketing faculty advisor, is required for employment. Scheduled meetings with an advisor and written reports are required. A performance appraisal of the trainee must be submitted by the employer. May be repeated for a maximum of 4 credit hours. Graded on a credit/no credit basis to be included in the major for Food Marketing Majors only. Prerequisite: Food Marketing major.

MKTG 470 Industrial Marketing 3 hrs.
An advanced course in planning and implementing business-to-business marketing strategies with an emphasis on segmenting markets, managing channel relationships, and creating customer value through continuous improvement and re-engineering. Prerequisites: MKTG 371, MKTG 372, and senior standing.

MKTG 471 Quantitative Marketing Applications 3 hrs.
Provides marketing student with a basic understanding of fundamental quantitative techniques and shows how these techniques will assist the decision maker in solving marketing problems. A term project applying the research process, concepts, and quantitative methods is required. Prerequisites: MKTG 250, MKTG 371.

MKTG 472 Media Planning 3 hrs.
A practical course in media planning intended for advertising majors and minors. Computerized allocation software is employed to develop complete media plans for advertising goods and services. A number of research sources are covered. Prerequisite: MKTG 374 and MKTG 477. Advertising majors and minors only.

MKTG 473 Direct Marketing Strategy 3 hrs.
An applied course in direct marketing intended for advertising majors and minors only. Covers principles, methods, and applications of telemarketing, and electronic media to the selling of goods and services to consumers and businesses. Student teams develop a complete direct marketing plan involving research, marketing strategy, media plan, and budget for current case situation. Prerequisite: MKTG 374, MKTG 474, and MKTG 477. Advertising majors and minors only.

MKTG 474 Advertising Copy and Layout 3 hrs.
A practical course for advertising majors and minors only. Covers the writing of targeted copy for both print and broadcast media. Includes computerized methods of print layout and fundamentals of radio and television scripting and production. Prerequisite: MKTG 374 and MKTG 477. Advertising majors and minors only.

MKTG 475 International Marketing 3 hrs.
An examination of the theories and principles of international marketing. Attention directed to marketing fundamentals, international marketing, and the study of foreign markets. Emphasis on research sources are covered. Prerequisite: MKTG 374 and MKTG 477. Advertising majors and minors only.

MKTG 476 Retail Management 3 hrs.
This course focuses on professional management of retail companies. It addresses all levels of management responsibility (strategies, administrative, and operating) within retail merchandising and store operations divisions. Attention is also given to other functions and research as they relate to merchandising and operations. Prerequisite: MKTG 375.

MKTG 477 Consumer Behavior 3 hrs.
Investigate, analyze and interpret the extensive body of research information on consumer behavior considering both the theoretical and practical implications. Prerequisites: MKTG 250 and MKTG 371.

MKTG 478 Special Topics in Marketing 3 hrs.
Study of advanced topics within the marketing discipline. The course topic will be indicated in the student record. Repeatable for different topics. Prerequisite: MKTG 250 and permission of instructor.

MKTG 479 Marketing Internship 1–3 hrs.
Marketing internship experience under the supervision of participating employers. Variable credit at the rate of approximately 100 hours of approved internship experience per credit hour. May be repeated for a maximum of 6 hours. Term reports required. Employer must submit a written performance appraisal. Graded on a credit/no credit basis. Cannot be counted toward major requirements. MKTG, IDM, RET, ADV majors only. Prerequisite: MKTG 250, MKTG 371, and permission of instructor.

MKTG 480 Franchising 3 hrs.
This is an introductory course designed to study franchising operations from both franchisor and franchisee viewpoints. The topics examine the nature of franchise development, operation of a franchise system, evaluation of franchise opportunities, and the relationships between franchisors and franchisees. Prerequisite: MKTG 250.

MKTG 484 Business Logistics 3 hrs.
An analysis of the movement, handling, and storage of products and materials, including work-in-progress and finished goods. Emphasis on customer requirements and customer satisfaction, total quality management, and optimization of total distribution costs. Prerequisite: MKTG 250.

MKTG 485 Material Systems Analysis 3 hrs.
This course examines the application of analytical and judgment techniques for integrated decision-making in marketing, logistic, and technological systems. Prerequisites: MKTG 372 and MKTG 484.

MKTG 486 Marketing Strategy 3 hrs.
Identification of marketing problem situations and cause diagnosis with development of appropriate marketing strategies. Stress placed on application of marketing fundamentals to factual case situations and on decisions in a simulated dynamic environment. Emphasis on customer requirements and customer satisfaction, total quality management, and optimization of total distribution costs. Prerequisite: MKTG 250.

MKTG 487 Marketing Ethics 3 hrs.
Critical examination of the ethical implications of responsibilities involved in the marketing discipline. Ethical and effective marketing managers have concern and respect for the welfare of those affected by their decisions. A framework is presented that will help evaluate the ethics of marketing activities. Student interests are developed through research projects. Prerequisite: MKTG 250.

MKTG 492 Marketing Information Technology 3 hrs.
Applications of information technologies utilized in the marketing of food and other consumer products. Emphasis will be on the use of computer technology to analyze price and cost controls, make merchandising, shelf management, and category decisions; develop sales forecasts; and interpret various operating performance ratios. Prerequisites: MKTG 391 or MKTG 375. Food Marketing or Retailing Majors only.

MKTG 493 Readings in Food Marketing 1–3 hrs.
This course is for students interested in independent study and is designed to familiarize students with the relevant literature and research in the field of Food Marketing.
Topics chosen must be approved by the instructor and the chair of the Marketing Department. Prerequisite: Senior standing, MKTG 391, and consent of instructor. Food Marketing majors only.

MKTG 494 Food Marketing Issues and Strategies
3 hrs.
A study of current issues which impact the agricultural, manufacturing, wholesaling, transportation, and retail segments of the food industry. Students apply decision-making techniques to analyze food marketing issues and plan effective strategies. Course uses case studies, computer simulations, and/or company projects to focus on issues and strategies for the food industry. Prerequisites: MKTG 371, MKTG 391. Food Marketing Majors only.

MKTG 498 Readings in Marketing
1–3 hrs. Arranged
Directed individual study of bodies of knowledge not otherwise treated in departmental offerings. Prerequisite: Written permission of instructor.
Frank Rapley  
Dean  
Alonzo Hannaford  
Associate Dean  
Director of Teacher Education

Departments:  
Counselor Education and Counseling Psychology  
Education and Professional Development  
Educational Leadership  
Family and Consumer Sciences  
Health, Physical Education and Recreation  
Special Education

Centers and Offices:  
Office of Admissions and Advising  
Office of Field Studies  
Certification Office  
Counseling and Psychological Services Center  
Merze Tate Center  
Reading Center and Clinic

In general, the College of Education performs eight functions:  
1. Supervises the selection, admission, and retention of students in advanced teacher education curricula;  
2. Provides professional education courses designed to develop competent, efficient performance in the classroom and within a school system;  
3. Provides advanced specialized courses in selected major and minor fields in departments within the college;  
4. Provides service courses to students in other colleges within the University;  
5. Provides clinical and curricular development services to teachers and school personnel;  
6. Conducts experimentation and research at all levels of professional education;  
7. Maintains liaison with professional organizations and learned societies involved in teacher education;  
8. Prepares professionals for careers related to improving the quality of life of individuals and families and management of consumer resources.

Curricula for Teachers  
The program for prospective teachers consists of three parts: (1) general education, designed to develop an intellectual foundation of appropriate depth and breadth in liberal arts and general studies; (2) advanced specialized study, in a major and minor field structured to develop a high level of academic competence and understanding; and (3) professional education study organized to prepare teacher candidates to work effectively in schools.  
Prospective teachers choose to work for the Michigan Elementary Provisional Certificate (valid for teaching all subjects in self-contained classrooms in grades kindergarten through eighth grade and major/minor subjects in departmentalized classrooms in grades six through eight) OR the Michigan Secondary Provisional Certificate, (valid for major and minor subjects in grades seven through twelve).  

The following undergraduate curricula lead to certification and are offered in the College of Education: Elementary Education, Secondary Education, Special Education, and Physical Education. Students seeking admission to these curricula must contact the Office of Admissions and Advising, 2504 Sangren Hall. Students electing to major in Art, Career and Technical Education, Music, Physical Education, Health Education, or Industrial Arts may be certified to teach in their specialized area in grades K-12 by completing the curriculum and certification requirements. Students seeking admission to one of the following curricula must see the appropriate college or department advisor as well as the Office of Admissions and Advising.  
- Art (see Department of Art advisor)  
- Music (see School of Music for audition)  
- Special Education (see Department of Special Education advisor)  
- Speech Pathology and Audiology (see Department of Speech Pathology and Audiology advisor)

Teaching certificates are granted only to those students who satisfactorily complete an approved teacher education program with an overall grade point average of 2.5 and a bachelor's degree. Students in Speech Pathology and Audiology must complete a master's degree.

Office of Admissions and Advising  
2504 Sangren Hall  
387-3474  
Advisors: Joyce DeRight, Director  
Patricia Annen  
Wendy Asmus  
Cynthia DeRyke

The Office of Admissions and Advising provides information regarding teacher education curricula and processes applications for admissions to those curricula in the College of Education. The office also coordinates academic advisement for students enrolled in all teacher education curricula and advises post-baccalaureate students seeking initial teacher certification.

All students seeking admission to teacher education curricula as entering freshman, transfers, or as students changing curricula must contact the Office of Admissions and Advising. All students declaring a preference for a curriculum leading to a teaching certificate will be assigned a pre-education designator (PED) at the time of admission to the University.

Students wishing to enter the Elementary Education or Secondary Education program must meet the following minimum requirements at the time of application:  
- Completion of at least 35 credit hours  
- Completion of all Western Michigan University Intellectual Skills Development requirements if required (e.g. MATH 109, ED 104, ENGL 100)  
- Completion of approved college level writing course  
- Completion of ED 250 Human Development or an approved course, with a grade of "C" or better  
- Achievement of a cumulative grade point average (GPA) of 2.5 or better  
- Achievement of passing scores on the Michigan Test for Teacher Certification (MTTC) — Basic Skills Section  
- Completion of a formal application by January 15 (Effective January 15, 1996)

Students wishing to enter the Special Education program must meet the following minimum requirements at the time of application for consideration — admission is not guaranteed:  
- Completion of 56 hours (Winter semester hours may be counted)  
- Completion of all Western Michigan University Intellectual Skills Development requirements if required (e.g. MATH 109, ED 104, ENGL 100)  
- Completion of approved college level writing course  
- Completion of ED 250 Human Development or an approved course, with a grade of "C" or better  
- Achievement of a cumulative grade point average (GPA) of 2.5 or better  
- Achievement of passing scores on the Michigan Test for Teacher Certification (MTTC) — Basic Skills Section  
- Documentation of thirty clock hours of experience with person(s) with a disability and current T.B. test  
- Completion of a formal application for admission to Special Education by January 15. Admission applications will be processed once a year.

TEACHER TESTING  
Public Act 282 (1992) amends Section 1531 of Public Act 451 (1976), as amended by Public Act 267 (1986), mandates the implementation of a teacher certification testing program in Michigan effective July 1, 1992. Under the provisions of this act, candidates for teacher certification in Michigan must pass a basic skills (reading, writing, math) test. Candidates for a secondary level teaching certificate must pass the appropriate available subject area examination for each subject area in which they are to be certified. Candidates for an elementary level teaching certificate must pass the appropriate basic skills examination, and the appropriate available subject area examination for each subject area, if any, for which they apply to be certified. The basic skills examination must be passed prior to enrollment in intern teaching.
The elementary examination and the subject area examinations must be passed prior to a person being recommended for certification. This act requires the passing of acquisition and available test(s) prior to the addition of testing and test bookletsmaybe obtained from the Office of Admissions and Advising, 2504 Sangren Hall.

Certification Office
Jane Kramer, Certification Officer
Anita Tums, Certification Assistant
2104 Sangren Hall
387-3473

The Certification Office processes all recommendations for certification and advises students seeking additional teaching endorsements. Further information about available certifications can be found under Types of Michigan Certificates elsewhere in this catalog.

Office of Field Studies
Suzanne Timmer, Coordinator
2206 Sangren Hall
387-3466

The Office of Field Studies is responsible for the coordination and oversight of all field experiences and intern teaching associated with teacher education curricula.

INTERN TEACHING

The following criteria must be met prior to applying for intern teaching:

1. Completion of all required coursework.
2. A cumulative grade point average of 2.5 or above.
3. An overall grade point average of 2.5 in the professional sequence and no grade lower than a “C” in any Professional Education course.
4. Recommendation from major and minor departments.
5. Completion of method course(s) in major and/or minor with a minimum grade of “C”.

Students must contact the Office of Field Studies at least one year prior to the semester in which they plan to complete their intern teaching requirements. The deadline for submitting intern teaching applications for the Fall Semester is April 1. Students may not select their placements for intern teaching. Placements are made by the Office of Field Studies based on program needs and are certified upon successful completion of the program.

APPEALS

A student aggrieved by an action taken within the College of Education has the right to appeal such action by filing an appeal form in the Office of Admission and Advising within twenty-one (21) days of the aggrieved action. Appeals may be reviewed by the Academic and Professional Standards Committee. Information about the appeal procedure is available in the Office of Admission and Advising.

HEALTH AND LIABILITY INSURANCE

Students engaged in field experiences or intern teaching must give evidence of having health insurance at the time of course enrollment. Liability insurance coverage will be provided by the University through a fee assessed at the time of enrollment in courses requiring field experience.

Elementary Education Curriculum

Advising: The Office of Admissions and Advising
2504 Sangren Hall
Bachelor of Arts or Bachelor of Science Degree
Michigan Elementary Provisional Certificate

The Elementary Education Curriculum is designed to prepare students to assume teaching responsibilities in self-contained classrooms in grades K-8. Additional information may be obtained from the Office of Admissions and Advising, 2504 Sangren Hall.

Minimum hours required for this curriculum: 130 hours

Program Requirements:

General Education Distribution
40 hours

General Education Requirement: 37 hours required for University General Education requirement. An additional three hours in General Education courses from the College of Arts and Sciences (nonprofessional courses only) are required for Michigan certification. The majority of the student’s General Education Distribution requirements will be met by options within the professional education program and the approved minors. (Courses listed in the elementary education program description with an * are approved for General Education credit. Two courses at the 300-400 level are required.)

Minors/Majors Approved for Elementary Education

Students selecting the elementary education curriculum are required to complete three minors: the Elementary Education Minor (EED, 28 hrs.), the Science and Mathematics Teaching Minor (SCM, 27 hrs.) and one additional minor selected from the following:

- Anthropology:
- History:
- Political Science:
- Sociology:

Program in Education:
24 hrs.

Early Childhood Education (EEE), 20 hrs.
...in addition to having met all other requirements for intern teaching and graduation.

Program in Education:
24 hrs.

Integrated Creative Arts (ICA), 24 hrs.
English Elementary Education (ENG), 21 hrs.
French (FRE), 20 hrs.

German (GER), 20 hrs.

Group Social Science (SOC), 24 hrs.

Physical Education Elementary (PEE), 22 hrs.

Spanish (SPA), 20 hrs.

OR

they may select one of the following major and minor combinations:

Art major (61 hrs.) with Elementary Education minor.
Music major** (63 hrs.) with Elementary Education minor.

Physical Education major (45 hrs.) with Elementary Education minor.

Speech Pathology and Audiology major** with Elementary Education minor. Teaching certificate awarded upon completion of major's degree.

Special Education, Emotionally Impaired /Elementary major** (34 hrs.). Contact Department of Special Education to determine acceptable minors and desired level of preparation.

Special Education, Mentally Impaired /Elementary major** (34 hrs.). Contact Department of Special Education to determine acceptable minors and desired level of preparation.

Notes: ** Special Education majors require admission to Special Education Curriculum. Music majors require admission to College of Fine Arts.

Requirements and approval for these required minors are available in the Office of Admissions and Advising. All applicants must have minor slips signed by an approved elementary education advisor.

General Education Foundations
23/27 hours

ENGL 282 Children’s Literature ..... 4 hrs.
One course from the following:

ENGL 105 Thought and Writing ..... 4 hrs.
BIS 142 Informational Writing ..... 3 hrs.
One course from the following:

GEOG 102 World Geography Through Media and Maps ..... 3 hrs.
HIST 211 U.S. History Since 1877 ..... 3 hrs.
PSCI 200 National Government ..... 3 hrs.
One course from the following:

COM 170 Interpersonal Communications ..... 3 hrs.
ANTH 370 Culture and Communication ..... 4 hrs.
One course from the following:

WMS 300 Working Women ..... 3 hrs.
WMS 310 Women and Social Institutions ..... 3 hrs.
WMS 450 Feminist Psychological Perspectives ..... 3 hrs.
HIST 316 Women in American History ..... 3 hrs.
One course from the following:

ANTH 120 Peoples of the World ..... 3 hrs.
SOC 304 Introduction to Non-Western World ..... 4 hrs.
One course from the following:

ANTH 240 Principles of Cultural Anthropology ..... 3 hrs.
* SOC 300 Black Experience ..... 3 hrs.
* ECON 107 Contemporary Economics ..... 3 hrs.
* GEOG 311 Geography of Michigan ..... 3 hrs.
* SOC 100 American Society ..... 4 hrs.
HIST 210 U.S. History to 1877 ..... 3 hrs.
SOC 200 Principles of Society ..... 3 hrs.

*Note: Approved for General Education credit.

CS 105 is required for all students not electing the Science and Mathematics Teaching Minor (Art, Music, Physical Education, Special Education, or Speech Pathology and Audiology).

Professional Education Program: 29 hours

An overall grade point average of 2.5 and no grade lower than a “C” in any Professional Education course are required to complete the program.

Professional Foundations: 3 hrs.

ED 250 Human Development ..... 3 hrs.

Professional Education: 14 hrs.

ED 309 Educational Psychology of Early Childhood (3 hrs.; to be taken concurrently with ED 312)

Program in Education: 14 hrs.

ED 312 Pre-Professional Foundations: 3 hrs.

Prerequisite: ED 250 admission to professional program in education
ED 310 Educational Psychology of Childhood (to be taken concurrently with ED 312)  3 hrs.
Prerequisite: ED 250; admission to professional program in education

ED 347 Technology for Elementary Education  2 hrs.
Prerequisite: ED 309 or ED 310 (must be taken concurrently with ED 351)

SPED 527 Exceptional Learners in Regular Elementary Programs  3 hrs.
**SPPL majors may substitute SPED 530; Physical Education majors may substitute PEPR 322.

ED 369 Classroom Organization and Management: Young Children (Early Childhood Minor)  Prerequisite: ED 309

ED 371 Elementary Classroom Organization and Management  3 hrs.
Prerequisite: ED 310

ED 395 School and Society  3 hrs.
Prerequisite: Minimum 70 hours; satisfies Baccalaureate Writing Requirement.

ED 471 Intern Teaching: Primary Grades  5/10 hrs.
Prerequisite: Minimum 70 hours; satisfies Baccalaureate Writing Requirement.

Other Requirements
University Intellectual Skills requirements in Reading, Mathematics, Writing, College Writing, Baccalaureate Writing, and Computer Literacy must be met.

The College Writing Literacy requirement may be met by selecting ENGL 105, 205, or 305 which are also approved for General Education credit. The Computer Literacy requirement is met through the Science and Mathematics Teaching Minor courses: MATH 151, MATH 255, and MATH 352. Students not electing the Science and Mathematics Teaching Minor must select CS 105 or CS 205. The Baccalaureate Writing Requirement is met through ED 395.

Elementary Education Minors
These 28 hour interdepartmental programs are designed to prepare students to assume teaching responsibilities in a general education classroom in grades K-8.

Elementary Education minor requirements with Science and Mathematics Teaching Minor and third minor of English
Minimum 2.0 GPA required in this minor.

Select one course from the following:
*GEOG 105 Physical Geography  4 hrs.
*SCI 180 Physical Science for Elementary Educators I  3 hrs.

Required courses—to be taken in this sequence:
MATH 150 Number Concepts for Elementary/Middle School Teachers (minimum “C” grade).  4 hrs.
Prerequisite: MATH 110 OR adequate performance on placement test

ED 312 The Foundations of Reading Instruction (to be taken concurrently with ED 309 or ED 310)  3 hrs.
Prerequisite: ED 250

ED 351 Literacy Development (to be taken concurrently with ED 347)  3 hrs.
Prerequisite: ENGL 282* AND ED 312

ED 352 Literacy and Language Arts in the Content Areas  3 hrs.
Prerequisite: (a) Minimum of 75 earned hours; (b) ED 309 or ED 310; (c) ED 312; (d) GEOG 102* OR HIST 211* OR PSCI 200*

* Approved for General Education credit. See advisor for third minor.

Elementary Education Minor requirements with Science and Mathematics Teaching Minor and third minor of Art, Integrated Creative Arts, Physical Education/Elementary
Minimum 2.0 GPA required in this minor.

These courses cannot be used as part of any other minor or major.

Select one course from the following:
*GEOG 105 Physical Geography  4 hrs.
*SCI 180 Physical Science for Elementary Educators I  3 hrs.

Required courses—to be taken in this sequence:
MATH 150 Number Concepts for Elementary/Middle School Teachers (minimum “C” grade).  4 hrs.
Prerequisite: MATH 110 OR adequate performance on placement test

ED 312 The Foundations of Reading Instruction (to be taken concurrently with ED 309 or ED 310)  3 hrs.
Prerequisite: ED 250

ED 351 Literacy Development (to be taken concurrently with ED 347)  3 hrs.
Prerequisite: ENGL 282* AND ED 312

ED 352 Literacy and Language Arts in the Content Areas  3 hrs.
Prerequisite: (a) Minimum of 75 earned hours; (b) ED 309 or ED 310; (c) ED 312; (d) GEOG 102* OR HIST 211* OR PSCI 200*

* Approved for General Education credit. See advisor for third minor.
ENGL 373 Reading and Writing as Psycholinguistic Processes 4 hrs.
Prerequisite: Admission to upper level professional education

Required:
Additional course to be approved by education advisor (e.g. ED 200, ED 398) 3 hrs.
* Approved for General Education credit. See advisor for third minor.

Elementary Education Minor requirements with a major of Art, Music, or Physical Education
(This program does not include the Science and Mathematics Teaching Minor.)
Minimum 2.0 GPA required in this minor.
These courses cannot be used as part of any other minor or major.

Select one course from the following:
*GEOG 105 Physical Geography 4 hrs.
SCI 180 Physical Science for Elementary Educators I 3 hrs.

Required courses—to be taken in this sequence:
MATH 150 Number Concepts for Elementary/Middle School Teachers (minimum “C” grade) 4 hrs.
Prerequisite: MATH 110 OR adequate performance on placement test
ED 312 The Foundations of Reading Instruction (to be taken concurrently with ED 309 or 310) 3 hrs.
Prerequisite: ED 250
ED 407 Elementary Social Studies and Multicultural Education 3 hrs.
Prerequisite: (a) Minimum of 75 earned hours; (b) ED 309 or ED 310; (c) ED 312; (d) GEOG 102* OR HIST 211* OR PSCI 205*

Select one course from the following:
ENGL 369 Writing for Elementary Teachers 4 hrs.
Prerequisite: ENGL 282* AND ED 312
ENGL 373 Reading and Writing as Psycholinguistic Processes 4 hrs.
Prerequisite: Admission to upper level professional education

Required:
Additional course to be approved by education advisor (e.g. ED 200, ED 398) 3 hrs.
* Approved for General Education credit. See major advisor.

Integrated Creative Arts Minor
Advisor: Office of Admissions and Advising 2504 Sangren Hall
(616) 387-3474

This 24-hour interdepartmental program is offered to preserve specialist elementary school teachers and specialist education teachers. The program stresses the integration of all the arts as a primary motivating agent in the teaching of all subject areas. It also emphasizes the stimulation and development of creative problem-solving behaviors. A minor slip is required. Students must see an advisor before they have completed eight hours in the minor. Minimum 2.0 GPA required in this minor.

*Approved for General Education credit. See major advisor.

Elementary Education minor requirements with a major of Speech Pathology and Audiology
Minimum 2.0 GPA required in this minor.
These courses cannot be used as part of any other minor or major.

Select one course from the following:
*B IOS 111 Introduction to Biomedical Sciences 3 hrs.
Minor in Early Childhood Education

Advisor: Office of Admissions and Advising
2504 Sangen Hall
(616) 335-4747

The completion of a minor in Early Childhood Education offers a special professional sequence for kindergarten through eighth grade certification with an endorsement specializing in teaching young children. Taken as a fourth minor, the program leads to the Early Childhood Specialist endorsement on an elementary teaching certificate. The Early Childhood minor requires 21 hours.

Prerequisite: ED 250 Human Development and admission to professional program.

Students will have an internship teaching assignment, which will be done in the Kalamazoo area or specified partnership school, where early childhood faculty are available. Students with an Early Childhood minor should satisfactorily complete the Elementary Education Curriculum requirements, with the following additional courses or substitutions:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 309</td>
<td>Educational Psychology: Early Childhood</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ED 350</td>
<td>Young Children, Their Families, and Their Society</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ED 351</td>
<td>Literacy Development</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ED 369</td>
<td>Classroom Organization and Management: Early Childhood</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ED 410</td>
<td>Seminar in Education: Early Childhood Emphasis</td>
<td>2 hrs</td>
</tr>
</tbody>
</table>

* This course is required for the Early Childhood minor only.
** The internship teaching experience, with its accompanying seminar, counts as half of the required number of internship teaching hours for certification of the elementary school teacher and is not an additional internship teaching assignment. In all, the student must complete 12 hours of internship teaching and seminar for elementary certification.

Middle School and Junior High School Curriculum

Bachelor of Arts or Bachelor of Science Degree

State Elementary or State Secondary Provisional Certificate

Applications are not currently being accepted for this program.

A program of undergraduate studies to prepare students to teach in the middle and junior high school which focuses on teaching-learning processes and content areas which are effective for working with the older child and the young adolescent in grades 5-9. (Student has option of earning elementary (grades K-8) or secondary (grades 7-12) certification. Elementary certification is recommended.)

The program includes a two-semester sequence of planned and supervised experiences specifically designed for teaching in the middle or junior high school. Program requirements must be planned and approved by advisor.

Minimum hours required for this curriculum result in certification to teach in grades 3-9. The above sequence is required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies, are required for Michigan certification.

Major/Minor Requirements Elementary Certification Option

1. Two minors or group minors (20-28 hours); OR one major or group major (30-36 hours) selected from the following areas: English, foreign languages, mathematics, science, social science minor only.
2. Elementary Education minor: see advisor in the Office of Admissions and Advising.

Secondary Certification Option

1. One major or group major
2. One minor or group minor

Majors and minors must be selected from the following areas: communication, English, languages, linguistics (second major only), mathematics, and science.

It is strongly recommended that majors and minors be chosen from related disciplines. See advisor for acceptable combinations.

Pre-professional Foundations: 3 hrs.
ED 250 Human Development                        3 hrs

Professional Education

An overall grade point average of 2.5 and no grade lower than a "C" in any Professional Education course are required.

Two semester-planned sequence Fall Semester

One course from: SOC 314, 320, 353, 514.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>COM 170</td>
<td>Interpersonal Communications</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ED 312</td>
<td>The Foundations of Reading</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ED 301</td>
<td>Teaching of Reading</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ED 371</td>
<td>Elementary Classroom Organization and Management</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ED 398</td>
<td>Special Studies in Education (topical seminars)</td>
<td>4 hrs</td>
</tr>
<tr>
<td>ED 407</td>
<td>Elementary Social Studies and Multicultural Education (elementary option OR methods course in major or minor field—secondary option)</td>
<td>3 hrs</td>
</tr>
</tbody>
</table>

Field Experiences (no credit)

Winter Semester

ED 398 Special Studies in Education (Psychology and Guidance of Young Adolescents) 2 hrs
ED 362 Reading and Related Communication Skills for Middle and Upper Grades 3 hrs
ED 395 School and Society 3 hrs
ED 407 Elementary Social Studies and Multicultural Education (elementary option OR methods course in major or minor field—secondary option) 3 hrs
ED 410 Seminar in Education 2 hrs
ED 472 Intern Teaching: Upper Elementary/Middle School 5-10 hrs

472 and 410 are taken concurrently during senior year. Professional Education must total 21 hours; other professional education requirements are included in two semester planned sequence.

Physical Education 2 hrs.

Baccalaureate Writing Requirement

Students who have chosen the Middle School and Junior High School Curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing ED 395 School and Society.

Bachelor of Science Degree Elementary Music Curriculum

Elementary Education Music

Grants certification to teach in elementary grade room (K-5) and music (K-8).

General Education Requirements 35 hrs.

Music Major 40 hrs.
Music Composition 101 (4 semester minor) 4 hrs.
Basic Music 160-161 6 hrs.
Aural Comprehension 162-163-259 3 hrs.
Contemporary Music 587 2 hrs.
Music History and Literature 170-270-271 8 hrs.
Conducting 215 1 hr.
Keyboard Musicianship 220-221-320-321 4 hrs.

Note: All students in this curriculum will complete four semesters of keyboard, and/or pass an examination given by the Keyboard and Professional Education areas. No class piano course is to be counted twice. Students who do not qualify for entry in 220 must complete 120 and/or 121 as a deficiency. Students who test out of Advanced Keyboard Musicianship (321) are urged to consider taking Basic Music (260); American Music (350); Non-Western Music (352); Voice (200), or courses not taken in the Choral or Instrumental elective areas.

Voice Class 4 hrs.
Four semesters of voice, including one of Vocal Techniques for Music Educators (117) and one at 100-200-level Voice. Only one voice class is to be counted per semester.
Choral Ensemble 107, 108, or 112 2 hrs.
Two semesters of major choral ensembles plus two additional semesters of Grand Chorus. Only one ensemble is to be counted per semester.
General Music Methods 336 2 hrs.
Choral Elective 2 hrs.
Select one of the following:
Choral Conducting and Literature (330); Choral Techniques (339); Choral Methods (340) 2 hrs.
Instrument Elective
Select two of the following:
Fundamentals of Guitar (126); Instruments of the Band and Orchestra (279); Instruments of the Classroom (280) 2 hrs.
Teaching and Learning in Music (348) 2 hrs.
Music for the Special Student (365) 2 hrs.

Elementary Education Minor 28 hrs.
Select one course from the following:
GECS 105 4 hrs.
SCI 180 3 hrs.

Required Courses (to be taken in this sequence):
MATH 150 4 hrs.
ED 312 3 hrs.
ED 351 3 hrs.
ED 352 3 hrs.
ED 407 3 hrs.
Select one course from the following:

**ENGL 369** 4

Required course:

Additional course to be approved by education advisor (e.g. ED 200, ED 398) 3 hrs.

### Professional Education Program . . . 17 hrs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ED 250</td>
<td>3</td>
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<tr>
<td>ED 309</td>
<td>3</td>
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<tr>
<td>ED 310</td>
<td>3</td>
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<tr>
<td>ED 347</td>
<td>3</td>
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<tr>
<td>SPED 527</td>
<td>3</td>
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<td>ED 369</td>
<td>3</td>
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<td>OR</td>
<td>3</td>
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<tr>
<td>ED 371</td>
<td>3</td>
</tr>
<tr>
<td>ED 395</td>
<td>3</td>
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</tbody>
</table>

### Professional Practicum . . . . 12 hrs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ED 410</td>
<td>2</td>
</tr>
<tr>
<td>ED 470, 471, or 472</td>
<td>5–10</td>
</tr>
</tbody>
</table>

### Baccalaureate Writing Requirement

Students who have chosen the Elementary Music Curriculum major will satisfy the Baccalaureate Writing Requirement by successfully completing ED 395 School and Society.

### Secondary Curriculum

**Bachelor of Arts or Bachelor of Science Degree**

State Secondary Provisional Certificate

(For the preparation of teachers in Grades 7–12)

**Minimum hours required . . . . . 122 hrs.**

This curriculum may require more than 122 credit hours.

A minimum grade point average of 2.5 must be attained for advancement from the Pre-Education (PED) curriculum to the Secondary Education (SED) curriculum. A minimum grade point average of 2.5 must be attained for enrollment in Intern Teaching and for recommendation for the teaching certificate. PED curriculum students are not permitted to enroll in upper level professional education courses unless all admission requirements are met and application is approved.

**General Education Requirement—Minimum 40 semester hours of credit as follows:**

- 35 hours from General Education Programs
- 5 hours from General Education Program
- 70 earned hours above and successful completion of all coursework.

**General Physical Education—2–8 semester hours of credit**

2 semester hours minimum; 8 semester hours maximum. Two semester hours of general physical education, distributed over at least two “activity” courses, are required.

**Professional Education Program: 34 hours of credit**

Minimum grade of “C” required in each of these courses and a grade point average of 2.5 maintained in all courses after admission to teacher education. To be taken in sequence.

**Secondary Education for students with majors in the College of Arts and Sciences.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ED 250</td>
<td>3</td>
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<tr>
<td>ED 309</td>
<td>3</td>
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<tr>
<td>OR</td>
<td>3</td>
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<tr>
<td>ED 310</td>
<td>3</td>
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<tr>
<td>ED 347</td>
<td>3</td>
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<tr>
<td>ED 369</td>
<td>3</td>
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<tr>
<td>ED 371</td>
<td>3</td>
</tr>
<tr>
<td>ED 395</td>
<td>3</td>
</tr>
</tbody>
</table>

**ED 301** Secondary Content Literacy . . . 3

Prerequisite: ED 300, must be at least a junior. To be taken concurrently with ED 302.

**ED 302** Teaching and Learning . . . 4

Prerequisite: ED 300, must be at least a junior. To be taken concurrently with ED 301.

**ED 303** Classroom Organization and Management . . . 3

Prerequisites: ED 301 and ED 302.

**ED 305** School and Society . . . . . 3

Prerequisite: 70 earned hours

A “methods of teaching” course in either the major or minor (both, if required by the respective major and minor departments). . . . . 3

**ED 475** Intern Teaching . . . . . 10

Prerequisite: All of the above and successful completion of all coursework.

**ED 410** Seminar in Education . . . 12

(Must be taken concurrently with ED 475)

Note: ED 475 and ED 410 comprise the “intern teaching semester.”

**Secondary Education for students majoring in Art, Health, Industrial Education, Music, Physical Education, Secondary Education in Business, Vocational Education, or those who declared Secondary Education prior to Fall 1990. (Minimum of a grade of “C” in each course with an overall 2.5 GPA required.)**

**ED 250** Human Development . . . . . 3

(Must be at least a sophomore)

**ED 301** Secondary Content Literacy . . . . 3

Prerequisite: ED 250 must be at least a junior. ED 300 not required for students following this guide.

**ED 302** Teaching and Learning . . . 4

Prerequisite: ED 250, ED 301 must be at least a junior School and Society . . . . 3

Prerequisite: 70 earned hours

A “methods of teaching” course in either the major or minor (both, if required by the respective major and minor departments). . . . . 3

**ED 475** Intern Teaching . . . . . 10

Prerequisite: All of the above and successful completion of all coursework.

**ED 410** Seminar in Education . . . 12

(Must be taken concurrently with ED 475)

Note: ED 475 and ED 410 comprise the “intern teaching semester.”

**Baccalaureate Writing Requirement**

Students who have chosen the Secondary Curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing ED 395 School and Society.

### Majors

**At least 30 semester hours.**

(Choose one.)

- *Art Education (ATE)*
- *Biological (BIO) (Science Minor)*
- *Career and Technical Education: Drafting (DRA)*
- *Graphic Arts (GRA)*
- *Home Economics (HEE)*
- *Metalworking (MWK)*
- *Power/Auto Mechanics (POW)*
- *Secondary Education in Marketing (SEM)*
- *Woodworking (WDK)*
- *Chemistry (CHM)*
- *Earth Science (EAR)*
- *English (ENG)*
- *Geography (EGG) (Social Science Minor)*
- *Health Education (HET)*
- *History (HIS) (Social Science Minor)*
- *Industrial Education: Drafting (DRA)*
- *General Industrial Ed. (GIA)*
- *Graphic Arts (GRA)*
- *Metal Working (MWK)*
- *Power/Auto Mechanics (POW)*
- *Woodworking (WDK)*
- *Language Department Majors: French (FREN)*
- *German (GER)*
- *Latin (LAT)*
- *Russian (RUS)*
- *Spanish (SPA)*
- *Mathematics (MAT)*
- *Music Education (MUE) (Includes vocal or instrumental minor)*
- *Physical Education/Teacher-Coach (PYE)*
- *Physics (PHY)*
- *Political Science (POL) (Social Science Minor)*
- *Secondary Education in Business (SEB)*
- *Theatre Education (THN) (only as second major)*

*These majors give K–12 certification in that subject.

### Minors

**At least 20 semester hours.**

(Choose one)

- *Biological (BIO)*
- *Career and Technical Education: Drafting (DRA)*
- *Graphic Arts (GRA)*
- *Metalworking (MWK)*
- *Secondary Education in Marketing (SEM)*
- *Power/Auto Mechanics (POW)*
- *Woodworking (WDK)*
- *Chemistry (CHM)*
- *Communication (COM)*
- *Earth Science (EAR)*
- *English (ENG)*
- *Environmental Studies (EVS) with SCI major only)*
- *Family Life Education (FLE)*
- *Geography (EGG)*
- *Health Education (HET)*
- *History (HIS)*
- *Industrial Education (same minor areas as listed under major)*
- *Language Department French (FREN)*
- *German (GER)*
- *Latin (LAT)*
- *Russian (RUS)*
- *Spanish (SPA)*
- *Mathematics (MAT)*
- *Occupational Child Care (OCC) (with Vocational majors only)*
- *Occupational Foods (OCE) (with Home Economics major only)*
- *Physical Education (PES)*
- *Physical Education/Exceptional Child (PEC) (only with PYE or SPED major)*
- *Physics (PHY)*
- *Political Science (POL)*
- *Science (SCI) (with Biology major only)*
- *Social Science (SOS) (with approved major only)*

**Certificate.**

(Only with PYE or SPED major)
Dorothy J. McGinnis
Reading Center and Clinic
Joe Chapel, Director
3514 Sangren Hall
(616) 387-3470

The primary purpose of the Dorothy J. McGinnis Reading Center and Clinic is to provide educational and clinical experiences for students enrolled at Western Michigan University who are preparing to work with children and adults in reading. Special activities carried on by the clinic are designed to provide diagnosis and developmental and corrective instruction in reading for children and adults, and to furnish consultative services for teachers and schools in Southwestern Michigan. Furthermore, the clinic provides students in education an opportunity to observe and participate in the administration of educational and clinical tests, and the procedures employed in interviewing children, parents, and school personnel. The Center also houses the Reading Recovery Project.

See Education and Professional Development course listings for reading courses offered.

Education College
Course (ED)

ED 399 Field Experience (Community Participation)
2-8 hrs.
A program of independent study combining academic work in education with social, environmental, civic or political field work.
Prerequisites: A written outline of the student's project, approved by a faculty supervisor, and approval from the office of the dean.

COUNSELOR EDUCATION AND COUNSELING PSYCHOLOGY

Joseph R. Morris, Chair
Mary Z. Anderson
Robert L. Berge
Karen R. Blaisure
Robert Brinkerhoff
James M. Croteau
Ruth Ervin
John S. Gesler
Jerry Gilley
Arlin R. Gullickson
Suzanne M. Hedstrom
Alan J. Hovestadt
Theresa M. O’Halloran
Theresa A. Powell
Diane K. Swartz
Donna M. Talbot
Edward L. Trembley
Tammi Vacha-Haase

Counselor Education and Counseling Psychology offers professional education in the fields of counseling psychology, community agency counseling, counselor education and supervision, student affairs in higher education, and school counseling and guidance. Most of the courses are open to graduate students only, but the following courses are open to qualified undergraduates.

Counselor Education and Counseling Psychology (CECP)

CECP 483 Treating Diverse Clients in Employee Assistance Programs
3 hrs.
This course emphasizes increasing knowledge, understanding, and awareness of diversity among course participants and the contemporary American workforce. Significant attention is devoted to treating racial minorities, women, gay/lesbian/bisexuals, older adults, persons with various religious affiliations, and the disabled within the context of Employee Assistance Programs. Open only to Employee Assistance Academic Program majors.

CECP 583 Workshops in Counselor Education and Counseling Psychology
1-4 hrs.
Workshops designed to enhance skill development related to Counselor Education and Counseling Psychology practices. Open to all students, but is not intended for counseling majors. May be repeated for credit.

EDUCATION AND PROFESSIONAL DEVELOPMENT

Joseph Kretovics, Chair
Ariel Anderson
DeWayne Anderson
James Bosco
James Burns
Joe R. Chapel
William Coburn
Ronald A. Crowell
Suzanne Davis
David Dynak
Janel Dynak
Susan Edgerton
Jennifer Fager
Paul Farber
Lauren Freedmen
Arthur Garmon
Richard Harring
Gunilla Holm
Lynn Nations Johnson
Robert Kotecki
Beula Lateef
Elena Lisovskaya
Regina Fails Nelson
Gerald Pilbury
Tom Ray
Andrea Smith
Carol Payne Smith
Karen Thomas
Paul Wilson
Allison Young

Courses are designed to meet the professional needs of the student preparing to teach. All students pursuing a curriculum for a secondary provisional certificate and a degree are required to take the professional education sequence of courses, plus a methods course offered in the major and/or minor field and directed teaching. For students in elementary education are required to complete the prescribed elementary education program. Students must contact the Office of Admissions and Advising, 2504 Sangren Hall, to be admitted to the teacher education curriculum. Once admitted, the student will be assigned an advisor who will assist the student in program planning and scheduling the sequence of courses, including directed teaching.

Education and Professional Development Courses (ED)

ED 103 Critical and Creative Reading
2 hrs.
Designed to develop practical application of principles of critical reading through extensive use of content area textbooks. Course will stress author's purpose, summarizing, and outlining for academic efficiency.

ED 104 Effective Reading for College Students
2 hrs.
Designed to provide the student with skills in vocabulary development, comprehension, and reading efficiency. Attention is given to the effective use of text and reference books in academic subjects, inferential reading, and synthesis of main ideas.

ED 106 Effective College Reading for International Students
2 hrs.
This course focuses on vocabulary development and comprehension, including an emphasis on correct pronunciation, word analysis, factual and inferential thinking, and synthesis of ideas. Course is graded on a
ED 200 Introduction to American Education 3 hrs.
This course is designed to explore some of the major educational issues that have provoked public debate and institutional reform in America. The purpose of the course is to achieve an understanding of these issues and the functions of education through the use of historical, sociological and philosophical concepts. The course provides an opportunity for pre-education students to explore their interest in education and teaching.

ED 230 The Nature of Creativity 3 hrs.
This course explores the nature of creativity as a process, its products, its characteristics, its values, and its relationship to human beings and society. Growth in aesthetic sensitivity, personal interaction, self-confidence, and ability to solve problems creatively are the objectives of this course. Open to all students.

ED 250 Human Development 3 hrs.
This course traces the psychological and social development of human beings from conception through adolescence. Consideration is given to those factors which facilitate or inhibit normal progress in the areas of physical, emotional, social, intellectual, and moral development. Attention is also given to the development of the self-concept for purpose of helping students to become more aware of themselves and of their relationships with others. Students are required to observe human beings at different stages of development in a variety of cultural settings.

This course focuses on the physical, social, emotional, and cognitive development of the child, birth through 12 years. Special attention is given to cognitive development viewed in a Piagetian framework. Applications to the teaching of language arts are emphasized.

ED 300 The Adolescent and School Learning 3 hrs.
This course aims to have students see adolescents as unique individuals and understand the variety of forces acting upon middle and secondary students. Students examine adolescence as a contemporary social and psychological phenomenon; employ cognitive, self, and narrative psychology to consider cultural differences and the exceptional learner. Critical thinking skills are emphasized in the analysis of theories and descriptions of adolescence. Prerequisites: ED 250 and admission to Secondary Education program.

ED 301 Secondary Content Literacy 3 hrs.
This course explores content literacy as it relates to the acquisition of new knowledge in various subject areas. Students will apply the cognitive components of content literacy through assessment of learners and subject area materials, as well as instructional procedures designed to meet the needs of diverse students. Requires participating in a secondary classroom for a minimum of two class periods per week. Must be taken concurrently with designated ED 302 section. Prerequisite: ED 300.

ED 302 Teaching and Learning in the Secondary School 4 hrs.
This course is designed to prepare students for the responsibilities of classroom instruction. Emphasis is placed on writing clear outcome statements for instruction, designing learning activities which motivate students and enable learners to retain information and transfer learning, and designing assessment strategies. Must be taken concurrently with designated ED 301 section. Requires participation in a secondary school classroom. Prerequisite: ED 300 for College of Arts and Sciences major(s) only.

ED 303 Organization and Management in Education 3 hrs.
Students will study the organizational and management challenges that secondary teachers face. Students will engage in a critical examination of current school and classroom organization and management models, methods, and strategies in middle and high schools. Prerequisites: ED 300, ED 301, and ED 302.

ED 309 Educational Psychology of Early Childhood 3 hrs.
This course will develop an understanding of how children learn from birth through early adolescence. Emphasis will be placed on the learning styles of young children, aged 0 through 9. Emphasis will be placed on major learning theories, on the growth of positive self-concepts, and on the cognitive styles of these age levels. Students will examine the effects of cultural and gender differences and of discrimination on learning. Taken in conjunction with ED 312. Prerequisite: Admission to the Early Childhood Emphasis or minor.

ED 310 Educational Psychology of Childhood 3 hrs.
This course will develop an understanding of how children learn, from birth through early adolescence. Emphasis will be placed on major learning theories, on the growth of positive self-concepts, and on the cognitive styles of these age levels. Students will examine the effects of cultural and gender differences and of discrimination on learning. Taken in conjunction with ED 312. Prerequisite: Admission to professional program in education.

ED 312 The Foundations of Reading Instruction 3 hrs.
This course will provide students with the foundations of reading instruction in the United States. Summaries of the results of current research in reading instruction are presented and the underlying theories and concepts examined. Also, current methods of teaching reading—especially the teaching approaches exemplified in basal programs—will be critically analyzed. Language as a system for transmitting ideas, information, and feelings will be introduced. Additionally, specific topics of importance to a foundational study, such as classroom diagnosis, will also be presented. Prerequisite: Admission to professional program in education. Taken in conjunction with ED 309 or ED 310.

ED 347 Technology for Elementary Education 2 hr.
An introduction to the contributions of instructional technology to learning and teaching in elementary education. The course will provide a survey of critical use of technology appropriate for elementary education and will enable students to acquire basic skills in using educational television, video, and other instructional technologies in educational applications. Concurrent enrollment with ED 351 is encouraged.

ED 350 Young Children, Their Families, and Their Society 3 hrs.
A study of the effects of family, peer group, and society on the development of young children. Emphasis will be placed on family styles and child-rearing practices and their effects on learning and development. Emphasis will be on family constellations, the learning of sex roles, the effects of divorce, and similar phenomena will be studied. Consideration will be given to the effects of cultural and subcultural differences on early childhood development and students will look at the contemporary American scene as it affects young children. Prerequisite: ED 250, admission to the Early Childhood Emphasis or minor.

ED 351 Literacy Development 3 hrs.
Course topics include the study of language development, emergent literacy, and literacy development in classrooms. Emphasis will be placed on the implications of current research which affects reading/language arts instruction, experiences in selecting books, storytelling, and supporting children's first experiences in bringing meaning to print, including early reading and writing. Issues relating to grouping for instruction and the use of commercial reading materials will be discussed. Designed for students seeking K-8 certification. Participation will be required in school settings. Prerequisites: ENGL 282 and ED 312.

ED 352 Literacy and Language Arts in the Content Areas 3 hrs.
Course topics include a study of the factors involved in learning from content area texts, and of methods for providing instruction for a student population which is diverse in language, in culture, and in learning strengths and needs. Emphasis will be placed on the implications of current research affecting reading and content area programs, and on the development of materials to aid comprehensive and vocabulary development, strategies for improving study processes, and methods of analyzing and evaluating students' progress. Integration across content areas, and integration of literature and language arts within content areas, are stressed. Designed for students seeking K-8 certification. Participation will be required in school settings. Prerequisites: ED 312. Elementary Education Minors must complete ED 351 prior to registering for ED 352.

ED 359 Early Childhood Classroom Organization and Management 3 hrs.
Students will examine and apply recent research on effective classroom management, concentrating on such variables as time on task, appropriate choice of group structures and direct instruction, the management of time, space, and materials, and the analysis of classroom interactions. Students will design, implement, and evaluate an integrated curriculum and will learn implementation principles designed to minimize "discipline problems." Micro-teaching experiences and a supervised teaching practicum will give each student the opportunity to apply research on effective teaching and to become an effective classroom manager. Emphasis will be placed on organization and management in early childhood classrooms, and special learning experiences for young children. Requires a minimum of one (1) day per week participation in a classroom. Prerequisites: ED 300; admission to Early Childhood Emphasis or minor.

ED 371 Elementary Classroom Organization and Management 3 hrs.
Students will examine and apply recent research on effective classroom management, concentrating on such variables as time on
task, appropriate choice of group structures and direct instruction; the management of time, space, and materials; and the analysis of classroom interactions. Students will design, implement, evaluate an integrated curriculum and will learn management principles designed to minimize "discipline problems." Micro-teaching experiences and a supervised teaching practicum will give each student the opportunity to apply research on effective teaching and to become an effective classroom manager. Requires a minimum of one (1) day per week participation in a classroom. Prerequisite: ED 309 or ED 310.

ED 395 School and Society 3 hrs.

This course is concerned with the nature and direction of American education in its changing social context. The course focuses on major issues affecting the advancement of education in a culturally diverse, democratic society. Course content includes inquiry as to how social, historical, political, philosophical, economic, and legal factors influence educational policy and practice. The role of individuals in the change process in education is examined. An interdisciplinary approach is used. Prerequisite: Minimum of 70 earned semester credit hours. This course satisfies the University's baccalaureate level writing requirement.

ED 398 Special Studies in Education 1–6 hrs.

With variable topics and variable credit, this course is designed for undergraduates who, by virtue of special interest or concerns, find it desirable to pursue in greater depth topics or problems related to children's educational development. The course will be offered under the following conditions: (1) a written outline of the offering be approved by the Department Chairperson, and (2) that prior arrangement be made with a faculty member. The course will be offered for credit on a credit/no credit basis. Students may repeat the course so long as topics differ. Each offering of 398, Special Studies in Education, will be given an appropriate subtitle, which will be listed on the student's official transcript. Students may earn up to three hours of credit for any given subtitle. No more than six hours of 398 may be used toward meeting professional program requirements.

ED 401 Teaching Elementary School Science 3 hrs.

Designed to introduce students to a sampling of the elementary school science program. Emphasis will be given to the exploration of science programs, techniques, philosophies, and teaching strategies that are currently being used in the elementary school science classroom. May be taken concurrently with ED 402. Prerequisite: ED 309 or ED 310 and all science courses.

ED 402 Practicum in Science and Mathematics Teaching 2 hrs.

This capstone course required of all students in the Science and Mathematics Teaching Minor will afford the student classroom teaching and observation experiences on a regular basis. In addition to the required classroom participation of two half-days per week, the student will meet periodically in a seminar to discuss instruction, supervising faculty from science, mathematics, and education. Prerequisites: MATH 352 and ED 401. ED 401 may be taken concurrently. Credit/no credit only.

ED 407 Teaching Elementary Social Studies 3 hrs.

This course is designed to help students understand the role of social studies in the elementary school, gain insight into important considerations in the selection of content, skills, and attitudes, and develop the ability to guide and assess the learning of children in this field. Planning social studies experiences and ways of working with individuals, groups, and the textbook will be emphasized. Multicultural and non-sexist content and strategies will be emphasized. Prerequisite: ED 309 or ED 310; ED 312; GEOG 102 or HIST 211 or PSY 200, minimum of 75 earned credit hours. Offered fall and winter semesters only.

ED 410 Seminar in Education 1–2 hrs.

The seminar will be directly related to the students' classroom experiences; it will further the students' practical teaching experience by research on effective teaching and effective schools, help to refine their techniques of effective classroom management and curriculum design, and enhance the students' sense of their own teaching style. The seminar will build the students' self-images as professionals as they are encouraged to take professional in an educationally safe environment. Professional ethics. It is in the seminar that the ongoing Teaching Portfolio will be completed and reviewed by a faculty committee. Must be taken concurrently with ED 470/471 or ED 475.

ED 430 Creativity in the Elementary School 4 hrs.

A synthesis of the principles developed in the Integrated Creative Arts Minor as applied to teaching and learning at the elementary school level. Emphasis is placed on the integration of creative processes in elementary school curriculum and instruction, on the teacher as problem solver, and on the creation of structures which accommodate individualization of instruction and creative problem solving in children. Prerequisite: Completion of all other courses in minor.

ED 460 Integrated Language Arts Seminar 4 hrs.

This course will focus on synthesizing theories, concepts, and classroom approaches from previous work in the Integrated Language Arts Minor. Students will practice restructuring curriculum objectives, classroom organization, and teaching strategies in order to achieve the maximum amount of language arts processes in the elementary school. Students will pursue individualized programs culminating in a guided field experience through which students will demonstrate identified program competencies. Student- and faculty-led seminars will be scheduled periodically throughout the course.

ED 470 Intern Teaching: Early Childhood 5 hrs.

Only for seniors who have been admitted to teacher education and completed all their professional studies courses. This will be the final field experience consisting of five days per week in a classroom setting. Students will synchronize the knowledge, apply the understandings, and practice the skills which they acquired during their University course work. They will participate in all phases of the school program where they are assigned. To be taken concurrently with ED 410. Prerequisites: All other courses and program requirements must be completed prior to Intern Teaching. Credit/no credit only.

ED 471 Intern Teaching: Elementary/Middle School 5 or 10 hrs.

Only for seniors who have been admitted to teacher education and completed all their professional studies courses. This will be the final field experience consisting of five days per week in a classroom setting. The field experience will build the students' practical understanding of the like. Each offering of 502, Curriculum Workshop, will be given an appropriate subtitle, which will be listed on the student's official transcript. Students may earn up to three hours of credit for any given subtitle. No more than six hours of 502 may be applied to graduate programs within the Department. Topics included in department program must be approved in advance of registration by the program advisor.

ED 500 In-service Professional Development II 1 hr.

This course develops specific professional skills related to current school responsibilities of teachers and other school personnel. Final course outcomes need to have demonstrated application to the classroom/workplace. May be repeated, only three credit hours may be applied to graduate programs within the Department. Topics included in department program must be approved in advance of registration by the program advisor.

ED 501 In-service Professional Development II 2–3 hrs.

This course develops specific professional skills over an extended period of time related to current school responsibilities of teachers and other school personnel. Final course outcomes need to have demonstrated application to the classroom/workplace. May be repeated, only three credit hours may be applied to graduate programs within the Department. Topics included in department program must be approved in advance of registration by the program advisor.

ED 503 Educational Technology Academy 1–3 hrs.

This course is designed to permit students to update knowledge and skills in current educational technology and apply this learning for use in educational programs for students in pre-kindergarten through college programs. Such applications include methods of using computers, video and audiovisual technologies, and the internet. Development, content area programs, instruction, management and the arts, as well as others appropriate to pre-service and in-service professions. Participation in the course presumes subject matter knowledge and basic computer literacy on the part of the students. Final course outcomes include application of material to the classroom/workplace. May be repeated, only three credit hours may be applied to any given subtitle. No more than six hours of 502 may be applied toward a Master's degree.

ED 503 Educational Technology Academy 1–3 hrs.

This course is designed to permit students to update knowledge and skills in current educational technology and apply this learning for use in educational programs for students in pre-kindergarten through college programs. Such applications include methods of using computers, video and audiovisual technologies, and the internet. Development, content area programs, instruction, management and the arts, as well as others appropriate to pre-service and in-service professions. Participation in the course presumes subject matter knowledge and basic computer literacy on the part of the students. Final course outcomes include application of material to the classroom/workplace. May be repeated, only three credit hours may be applied to any given subtitle. No more than six hours of 502 may be applied toward a Master's degree.
This course provides an in-depth look at each age and stage in the lifecycle. It will explore such problems as the changing role of parents and singles, the changing societal pressures on teachers, new adult lifestyles, mid-life career changes, the changing roles of males and females, and unique health stresses. Emphasis will be placed on the identification of patterns of lifelong learning leading to a more fruitful and fulfilling life.

ED 505 The Adult Learner
3 hrs.
This course will provide an in-depth look at the learning adult from age 22 to death with emphasis on human susceptibility, unique learning style, and characteristics of the adult learner. Theories of adult learning, studies of intelligence and memory, and learning capabilities and motivation as prerequisite for high-level wellbeing and problem solving will be studied.

ED 506 Teaching in Adult Education
3 hrs.
This course is designed to provide teachers with a knowledge of special situations which occur in the teaching of adults. Included also are techniques of interpersonal communication with adults, as well as a practical exercise in the designing of learning experiences for adults. Extensive use will be made of audiovisual media, experts in the field, and field observation in adult learning activities. The course should be helpful to administrators in planning inservice programs for their own staff.

ED 508 Seminar in Parent Education
2 hrs.
Emphasis will be placed on cooperative problem-solving between parents and teachers of school-age children and youth. Problems considered will include such topics as grief and loss through death, divorce, or separation; special needs and contributions of multicultural parents; parents as resource persons and paraprofessionals in the schools; and problems identified by members of the seminar. Members of the seminar will report on the current literature available through libraries and community resources and work toward potential solutions of problems.

ED 516 Professional Symposium in Reading
3 hrs.
This course is designed to be the initial course in the graduate program in reading. It is designed to present the basic concepts concerning the nature of the reading process and the teaching of reading. Emphasis will be placed on reading as a thinking process and on factors affecting reading performance. Special emphasis will be placed on child development; language development; concept development; physical, psychological, and environmental factors affecting the child's learning to read. In addition, the course will provide a brief overview of the delivery systems and procedures used in the U.S. to teach reading. This will involve an historical overview as well as current and potential future practices.

ED 548 Instructional Technology I
3 hrs.
This course provides for the development of knowledge and skills required to make use of information and communication technologies as instructional tools. Use of instructional technology will be considered within a context of relevant research and theory pertaining to human learning. Various technologies used to produce, present, and distribute instruction, such as computers, camcorders, CD ROM, CDI (compact-disc interactive), video editing equipment, scanning and digitizing equipment, satellite and cable, etc., will be examined. Corresponding software used for production and presentation will also be examined, and skills in using such software acquired. Particular emphasis will be placed on interactive technologies. Students will have hands-on experiences pertaining to the evaluation, selection, and implementation of media in teaching and learning settings.

ED 549 Instructional Technology II
3 hrs.
This course is intended to extend basic skills and understandings acquired in Instructional Technology I or in other comparable experiences. Emphasis will be placed on the production of instructional media. Students will be expected to produce one prototype application of interactive media which could be used in an instructional setting. The course will also examine the use of instructional technology with the roles, rules, procedures, and customs of the organization. Students will also examine emerging technologies which are expected to have impact on how teaching and learning occur in our society.

ED 597 Reading and Related Language Experiences
3 hrs.
This course involves a study of the current research on aspects of language which are involved in the process of effective reading. It is intended to provide students with a thorough understanding of the research in language and its application to the reading process. The course also is intended to help students understand more fully the place of reading in a total language arts program and to give students an opportunity to make application to practical classroom situations.

ED 598 Selected Reading in Education
1-4 hrs.
Designed for highly qualified students who wish to study in-depth some aspect of their field of specialization under a member of the departmental staff. Prerequisite: Written consent of departmental advisor and instructor.

EDUCATIONAL LEADERSHIP
Mary Anne Bundu
Van E. Cooley
David J. Cowden
Conne Ruhl-Smith
James R. Sanders
Jianping Shen
Catherine C. Sielke
Uldis Smidchens
Julia B. Smith
Charles C. Warfield

This department offers curricula in line administration, staff administration, and program leadership, leading to a degree of Master of Arts, Specialist in Education, Doctor of Education, or Doctor of Philosophy. While most of the department's courses, seminars, and studies, are intended for graduate students, programs of study may be outlined and pursued by advanced undergraduate students whose career goals include positions as leaders in the many and varied educational agencies that are operative in society today. Courses are listed under the prefix EDLD. Interested students should see The Graduate College Catalog for more detail.

Educational Leadership (EDLD)

EDLD 420 Employee Assistance Program Education and Training
3 hrs.
This course is designed for the student who is preparing for a career as an employee assistance professional and for persons currently working as employee assistance professionals. The course provides an overview of the training function in an EAP environment and the development of the competencies required to carry out the training role of the EAP professional. Training roles studied include the EAP professional as a planner, designer, facilitator, program manager, and evaluator. Open only to Employee Assistance Academic Program majors. Prerequisite: SCHS 220.
The mission of the Department of Family and Consumer Sciences is to provide integrative educational programs and conduct research focused on reciprocal relationships among individuals, families, and their near environments toward the goal of improving the quality of life within a dynamic world community.

Curricula offered in the department include:

- Dietetics
- Family Studies
- Food Service Administration
- Industrial Education Teaching
- Interior Design
- Textile and Apparel Studies—Merchandising
- Textile and Apparel Studies—Production
- Vocational Education Teaching

Minors offered in the department include:

- Family Life Education (Teaching)
- Occupational Child Care (Teaching)
- Occupational Foods
- Textile and Apparel Merchandising

**Academic Advising**

Charon Carver, Room 2501 Sargen Hall.

The advisor is available to assist in individual program planning, recommend electives appropriate to a student's educational objectives, discuss employment opportunities, and help solve academic problems. Substitutions and transfer credit must be approved by departmental advisor.

**Vocational Education**

Students desiring to become qualified as teachers of Vocational Home Economics, Vocational Technical Education (Drafting, Graphic Arts, Metal Working, Power/Automotives, Woodworking), or Secondary Education in Marketing must complete the appropriate study program found under Vocational Education in the final section describing programs in the College of Education. Only persons holding the appropriate Vocational and Secondary Provisional Certificates will be qualified to teach in these reimbursed Secondary programs in Michigan Public Schools.

**Work Experience Programs**

Programs offered in textile and apparel studies, food service administration, interior design, and family studies are designed to develop occupational competencies in their respective areas. These programs, which are sponsored jointly with businesses and agencies, provide students with an opportunity to complete a four-year program leading to a Bachelor of Science degree.

**Additional Information**

General information regarding counseling, scholarships, and special programs of interest to students in this department may be found under the beginning of the College of Education section of the catalog. Students not attending courses for whatever reasons are responsible for processing drop slips with the Registration Office if fees are to be refunded and an "X" grade avoided.

**Dietetics**

Bachelor of Science Degree

The Dietetics Program meets the American Dietetic Association's Standards of Education and graduates are eligible to apply for an accredited internship or an approved supervised practice program. Students must complete either an internship or the supervised practice in order to qualify for certification as Registered Dietitians. After certification, the Registered Dietitian is eligible for positions in hospitals such as clinical dietitian or food service administrator; for positions in commercial food establishments such as restaurants, hotels, industrial facilities, schools, colleges, universities and the armed forces; and for positions in community health agencies.

The student Dietetic Association provides an opportunity to meet dietetics professionals, learn about the profession and volunteer for pre-professional activities, as well as meet and interact with fellow dietetics students.

**BACCALAUREATE WRITING REQUIREMENT**

Students who have chosen the dietetics major will satisfy the Baccalaureate Writing Requirement by successfully completing FCS 468 Advanced and Experimental Foods.

**Requirements**

Candidates for the Bachelor of Science degree must complete the following program of 122 semester hours. A grade of "C" or better must be earned in courses with a FCS prefix and in other specified courses presented for graduation.

**REQUIRED FCS COURSES** — 30 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCS 100</td>
<td>Career Seminar - DIFSA</td>
<td>1</td>
</tr>
<tr>
<td>FCS 165</td>
<td>Food Science Principles</td>
<td>3</td>
</tr>
<tr>
<td>FCS 260</td>
<td>Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>FCS 268</td>
<td>Quantity Foods</td>
<td>4</td>
</tr>
<tr>
<td>FCS 460</td>
<td>Advanced Nutrition</td>
<td>4</td>
</tr>
<tr>
<td>FCS 461</td>
<td>Diet and Disease</td>
<td>4</td>
</tr>
<tr>
<td>FCS 462</td>
<td>Community Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>FCS 466</td>
<td>Institutional Management</td>
<td>4</td>
</tr>
<tr>
<td>FCS 468</td>
<td>Advanced and Experimental Foods</td>
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</tr>
</tbody>
</table>

**RELATED REQUIREMENTS** — 12 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 111</td>
<td>Algebra II</td>
<td>3</td>
</tr>
<tr>
<td>IME 102</td>
<td>Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>FCS 225</td>
<td>Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>COM 170</td>
<td>Interpersonal Communications</td>
<td>3</td>
</tr>
<tr>
<td>CTE 344</td>
<td>Teaching Methods for CTE</td>
<td>3</td>
</tr>
<tr>
<td>PSY 100</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 200</td>
<td>Principles of Sociology</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics—Micro</td>
<td>3</td>
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<tr>
<td>MGMT 300</td>
<td>Fundamentals of Management</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 434</td>
<td>Biomedical Ethics and Society</td>
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</table>

**RELATED ELECTIVES** — Choose 21 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAS 300</td>
<td>Black Experience</td>
<td>3</td>
</tr>
<tr>
<td>COM 170</td>
<td>Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>FCS 429</td>
<td>Internship</td>
<td>3-6</td>
</tr>
<tr>
<td>FCS 575</td>
<td>Admin of Child Development Centers</td>
<td>3</td>
</tr>
<tr>
<td>PFR 100</td>
<td>Health for Better Living</td>
<td>4</td>
</tr>
<tr>
<td>PSY 100</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 250</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 210</td>
<td>Modern Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>SOC 362</td>
<td>Criminology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 412</td>
<td>Child Abuse</td>
<td>3</td>
</tr>
<tr>
<td>SOC 454</td>
<td>Juvenile Delinquency</td>
<td>3</td>
</tr>
<tr>
<td>SWRK 100</td>
<td>Introduction to Social Services</td>
<td>3</td>
</tr>
</tbody>
</table>
Food Service Administration

Bachelor of Science Degree

The food service administration curriculum is scientifically oriented for an indepth study of foods in relation to the business field. Students may pursue supervisory/managerial careers in commercial food institutions in the equipment field, food research, public utility companies, mass production, quality testing, technical writing, or governmental food agencies. Student Food Service Association (FOSA) activities provide additional professional experiences.

Baccalaureate Writing Requirement
Students who have chosen the Food Service Administration major will satisfy the Baccalaureate Writing Requirement by successfully completing FCS 488 Advanced and Experimental Foods.

Requirements
Candidates for the Bachelor of Science degree must complete the following program of 122 semester hours.

Required FCS Courses — 30 hours
- FCS 100 Career Seminar - Di/FFSA 1
- FCS 165 Food Science Principles 3
- FCS 202 Field Experience 3
- FCS 205 Topics in FCS - Breads 1
- FCS 225 Computer Applications 3
- FCS 250 Nutrition 3
- FCS 368 Quantity Foods 4
- FCS 466 Institutional Management 4
- FCS 458 and Experimental Foods 4
- FCS 590 Projects/Problems in FCS 3

Required Related Courses — 54 hours
- IME 102 Technical Communications 3
- BIOS 112 Introduction to Biomedical Science 3
- BIOS 232 Microbiology and Infectious Diseases 3
- CHEM 101 General Chemistry 4
- ECON 201 Principles of Economics - Micro 3
- ECON 202 Principles of Economics - Macro 3
- MATH 110 Algebra 3
- MATH 116 Finite Math 3
- MGMT 352 Personnel Management OR
- IMF 402 Supervision/Indus. Opr. 3
- PSY 100 General Psychology 3

Select 21 Hours From:
- FCS 160 Introduction to Agriculture 3
- FCS 209 Consumer Education 3
- FCS 429 Internship 3
- ACTY 210 Principles of Accounting 3
- ACTY 211 Principles of Accounting 3
- BIS 340 Business Communication 3
- FCL 230 Business Finance 3
- FCL 380 Legal Environment 3
- FCL 382 Business Law 3
- MATH 216 Business Statistics 3
- MGMT 210 Small Business Management 3
- MGMT 300 Fundamentals of Management 3
- MKTG 200 Marketing 3

Baccalaureate Writing Requirement

1. Minimum hours required for this curriculum 122 hrs.
2. General Education Requirements 37 hrs.
- 3 semester hours of written communications and MATH 110 and 111 or equivalent are required.
3. Technical major in one of the following areas 30 hrs.
   - General Industrial Arts
   - Drafting
   - Graphic Arts
   - Marketing
   - Power Automotive
   - Wood Furniture
   - Woodworking
   - Technical minor in any one of the above areas other than the major 20 hrs.
5. Professional Education Courses 21 hrs.
   - ED 250 Human Development and Learning 4
   - ED 301 Teaching of Reading (Secondary) 3
   - ED 302 Teaching and Learning 3
   - ED 395 School and Society 3
   - CTE 475 Intern Teaching in CTE 10
6. Professional Vocational Education Courses 6 hrs.
   - CTE 342 Curriculum Development in CTE 3
   - CTE 344 Teaching Methods for CTE 3
7. Electives (number of hours for graduation total)

Baccalaureate Writing Requirement

Students who have chosen the Industrial Education major will satisfy the Baccalaureate Writing Requirement by successfully completing CTE 342 Curriculum Development in CTE.

Required FCS Courses

- FCS 150 Intro to Interior Design 3
- FCS 156 Design Fundamentals 3
- FCS 256 Lighting for Interiors 3
- FCS 260 Nutrition 3
- FCS 350 Textiles for Interiors 3
- FCS 359 Studio III 3
- FCS 451 Studio IV 3
- FCS 459 Studio V 3

Required Related Courses

- CMD 131 Intro to Construction Environment 3
- CMD 149 Intro to Architectural Drafting 3
- CMD 330 Wood/Materials/Interior Design 3
- FCS 225 Computer Applications OR
- FCS 105 Intro to Computers 3
- ECON 201 Principles of Economics - Micro 3
- ART 130 Studio Experience (3-D) OR
- ART 231 Sculpture 3
- ART 221 History of Art 3
- MKTG 360 Professional Selling 3
- COM 104 Public Speaking 3
- IME 102 Technical Communications 3
- MGMT 210 Small Business Management OR
- MGMT 300 Principles of Management 3
- ACTY 210 Principles of Accounting 3

General Education/Liberal Arts — 37 hours total

Electives — Number of hours needed for graduation total

Interior Design

Bachelor of Science Degree

Interior design is an interdisciplinary curriculum for the student who desires a career in residential or commercial interior design, retailing home furnishings, visual merchandising, marketing of building products, or design related sales. An active student chapter of the American Society of Interior Designers, and optional Institute of Business Designers, provide additional opportunities for professional activities. The program is accredited by FIDER.

Portfolio Review Requirement

Any entering freshman or transfer student planning to major in interior design must apply for portfolio review after completing FCS 150, FCS 156, FCS 220, FCS 249/251, FCS 254 and CMD 131. CMD 149 Portfolio review is held annually during winter semester and is the basis for selective admission to the upper level interior design sequence. A student not admitted to the upper level interior design sequence may reapply and participate in portfolio review again the following winter. See the FCS academic advisor for specifics.

Requirements
Candidates for the Bachelor of Science degree must complete the following program of 122 semester hours.

Required FCS Courses — 54 hours
- FCS 150 Intro to Interior Design 3
- FCS 156 Design Fundamentals 3
- FCS 256 Lighting for Interiors 3
- FCS 260 Nutrition 3
- FCS 350 Textiles for Interiors 3
- FCS 359 Studio III 3
- FCS 451 Studio IV 3
- FCS 459 Studio V 3

Required Related Courses — 54 hours
- CMD 131 Intro to Construction Environment 3
- CMD 149 Intro to Architectural Drafting 3
- CMD 330 Wood/Materials/Interior Design 3
- FCS 225 Computer Applications OR
- FCS 105 Intro to Computers 3
- ECON 201 Principles of Economics - Micro 3
- ART 130 Studio Experience (3-D) OR
- ART 231 Sculpture 3
- ART 221 History of Art 3
- MKTG 360 Professional Selling 3
- COM 104 Public Speaking 3
- IME 102 Technical Communications 3
- MGMT 210 Small Business Management OR
- MGMT 300 Principles of Management 3
- ACTY 210 Principles of Accounting 3

General Education/Liberal Arts — 37 hours total

Electives — Number of hours needed for graduation total

Secondary Education in Business

Bachelor of Science Degree

Candidates for the Bachelor of Science degree and Vocational and/or Secondary Provisional certification must complete the following program requirements as well as University requirements stated elsewhere in this bulletin.

Required Major Sequence — 36 hours
- FCS 209 Consumer Education 3
- FCS 225 Computer Applications 3
- FCS 305 Professional Job Search Strategies 3
- COM 170 Interpersonal Communication I 3
**TEXTILE AND APPAREL STUDIES**

**Bachelor of Science Degree**

### Merchandising Emphasis

The merchandising emphasis is designed to prepare students for careers in retailing and related fields. The four-year program includes studies in marketing, management, and consumer behavior. A minor is optional, though many students select a marketing or management minor. Students who graduate with a merchandising emphasis may begin a career in one of many entry-level management positions in apparel, specialty, discount, or boutique stores. Career opportunities also exist in the apparel and textile wholesaling fields.

### Production Emphasis

The production emphasis is designed for students interested in careers within the manufacturing production cycle of the apparel industry, such as with apparel manufacturers in design, pattern drafting, quality control and plant supervision; with textile-producing companies as technicians or fashion analysts, or with pattern and notion companies. Students will select a required career option of Manufacturing, Computer-Aided Design (CAD), or Fashion Design. Individuals interested in fashion design should plan on including one year of study at the Fashion Institute of Technology in New York City or The American College in London during their junior year.

### BACCALAUREATE WRITING REQUIREMENTS

Students who have chosen the merchandising emphasis will satisfy the Baccalaureate Writing Requirement by successfully completing BIS 340 Writing for Business.

### Merchandising Emphasis Requirements

Candidates for the Bachelor of Science degree must complete the following program of 122 semester hours.

<table>
<thead>
<tr>
<th>CORE REQUIREMENTS — 18 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCS 126 The Fashion Industry</td>
</tr>
<tr>
<td>FCS 155 Design Principles</td>
</tr>
<tr>
<td>FCS 220 Textiles</td>
</tr>
<tr>
<td>FCS 305 Professional Job Search Strategies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REQUIRED FCS COURSES — 18 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCS 202 Field Experience</td>
</tr>
<tr>
<td>FCS 226 Retail Buying</td>
</tr>
<tr>
<td>FCS 228 Nontextile Products</td>
</tr>
<tr>
<td>FCS 320 Visual Merchandising</td>
</tr>
<tr>
<td>FCS 329 Promotion of Textile and Apparel Products</td>
</tr>
<tr>
<td>FCS 430 Fashion Retailing</td>
</tr>
</tbody>
</table>

### REQUIRED RELATED COURSES — 34 hours

<table>
<thead>
<tr>
<th>RELATED COURSES — 34 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 107 Chemistry, Textiles and Apparel Design</td>
</tr>
<tr>
<td>CS 105 Introduction to Computers OR</td>
</tr>
<tr>
<td>FCS 225 Computer Applications</td>
</tr>
<tr>
<td>IME 102 Technical Communications</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>REQUIRED COURSES — 24 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCS 124 Apparel Construction</td>
</tr>
<tr>
<td>FCS 209 Consumer Education</td>
</tr>
<tr>
<td>FCS 224 Experimental Clothing Techniques (repeat)</td>
</tr>
<tr>
<td>FCS 229 Federation of Textile and Apparel Products</td>
</tr>
<tr>
<td>FCS 405 Travel/Study Seminar 1-4</td>
</tr>
<tr>
<td>FCS 429 Internship 3-6</td>
</tr>
<tr>
<td>FCS 522 Topics in FCS (TEX related) 3</td>
</tr>
<tr>
<td>FCS 596 Independent Study 1-6</td>
</tr>
</tbody>
</table>

### GENERAL EDUCATION — 37 hours

<table>
<thead>
<tr>
<th>ELECTIVES — Number of hours needed for graduation total</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCS 126 The Fashion Industry</td>
</tr>
<tr>
<td>FCS 155 Design Principles</td>
</tr>
<tr>
<td>FCS 220 Textiles</td>
</tr>
<tr>
<td>FCS 320 Visual Merchandising</td>
</tr>
<tr>
<td>FCS 322 Flat Pattern Design I</td>
</tr>
<tr>
<td>FCS 323 CAD for Textiles and Apparel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAREER OPTION — 16-27 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals must select a Career Option of either Manufacturing, CAD (Computer Aided Design) or Fashion Design.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REQUIRED RELATED COURSES—22 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 107 Chemistry, Textiles and Apparel Design</td>
</tr>
<tr>
<td>FCS 225 Computer Applications OR</td>
</tr>
<tr>
<td>CS 105 Intro to Computers 3</td>
</tr>
<tr>
<td>IME 102 Technical Communications 3</td>
</tr>
<tr>
<td>ECON 201 Principles of Economics—Micro 3</td>
</tr>
<tr>
<td>COM 170 Interpersonal Communications I 3</td>
</tr>
<tr>
<td>PSY 100 General Psychology 3</td>
</tr>
<tr>
<td>SOC 200 Principles of Sociology 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SELECT 10 hours from the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCS 202 Field Experience 3</td>
</tr>
<tr>
<td>FCS 209 Consumer Education 3</td>
</tr>
<tr>
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</tr>
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<td>FCS 329 Federation of Textile and Apparel Products 3</td>
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<td>FCS 596 Independent Study 1-6</td>
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### Family Life Education (Teaching)

<table>
<thead>
<tr>
<th>REQUIREMENTS — Number of hours needed for graduation total</th>
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<tr>
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</tr>
<tr>
<td>FCS 322 Flat Pattern Design I</td>
</tr>
<tr>
<td>FCS 323 CAD for Textiles and Apparel</td>
</tr>
</tbody>
</table>

### Minors

**Requirements**

Students should consult with the department advisor to plan one of the following minors.

<table>
<thead>
<tr>
<th>MINORS — Number of hours needed for graduation total</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCS 224 Experimental Clothing Techniques 3</td>
</tr>
<tr>
<td>FCS 322 Flat Pattern Design I 3</td>
</tr>
<tr>
<td>FCS 324 Dressmaker Tailoring 3</td>
</tr>
<tr>
<td>FCS 422 Apparel Manufacturing 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAREER OPTION — 12 hours</th>
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<tbody>
<tr>
<td>Individuals must select a Career Option of either Manufacturing, CAD (Computer Aided Design) or Fashion Design.</td>
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<table>
<thead>
<tr>
<th>REQUIRED COURSES—4 hours</th>
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<tbody>
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<td>FCS 202 Field Experience 3</td>
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### TEXTILE AND APPAREL MERCHANDISING

<table>
<thead>
<tr>
<th>REQUIREMENTS — 6 hours*</th>
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<tbody>
<tr>
<td>Choose six (6) hours from the following:</td>
</tr>
<tr>
<td>FCS 124 Apparel Construction 3</td>
</tr>
<tr>
<td>FCS 222 Flat Pattern Design I 3</td>
</tr>
<tr>
<td>FCS 230 CAD for Textiles and Apparel 3</td>
</tr>
<tr>
<td>FCS 233 Graphic Design 3</td>
</tr>
<tr>
<td>FCS 235 Marketing Techniques 3</td>
</tr>
<tr>
<td>FCS 236 Writing for Business 3</td>
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### Minors

**Requirements**

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### Textile and Apparel Merchandising

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<thead>
<tr>
<th>REQUIREMENTS — 6 hours*</th>
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<tbody>
<tr>
<td>Choose six (6) hours from the following:</td>
</tr>
<tr>
<td>FCS 124 Apparel Construction 3</td>
</tr>
<tr>
<td>FCS 222 Flat Pattern Design I 3</td>
</tr>
<tr>
<td>FCS 230 CAD for Textiles and Apparel 3</td>
</tr>
</tbody>
</table>
Vocational Advising

The advisor is available to assist in individual program planning, recommend electives appropriate to the career objective of a vocational teacher, and discuss employment opportunities. Substitutions and transfer credit must be approved by the departmental vocational advisor.

Majors

Secondary Education in Marketing

Home Economics Education

Vocational Technical Areas (Draf ting, Graphic Arts, Metalworking, Power/Auto, and Woodworking)

Minors

Occupational Child Care

Occupational Foods

Secondary Education in Marketing

Vocational Technical Areas (Draf ting, Graphic Arts, Metalworking, Power/Auto, and Woodworking)

Vocational Certification in Business

Information about vocational education to teach business or business education courses may be obtained by contacting the vocational coordinator at 387-3755.

Vocational Educational Teaching Curriculum

Requirements

Candidates for the Bachelor of Science degree in Vocational and/or Secondary Provisional certification must complete the following program requirements as well as University requirements stated elsewhere in this bulletin.

A. Minimum hours required for this curriculum—124 to 128 hours

B. General Education requirement—37 hours

C. Major Sequence—30 to 36 hours

Choose one of the following three major sequences:

1. Secondary Education in Marketing — 36 hours

   (4,000 work hours required for Vocational Certification; may necessitate internship or work experience.)

   FCS 124 Apparel Construction 3

   FCS 155 Fashion Retailing 3

   FCS 212 Apparel Construction 3

   FCS 228 Apparel Construction 3

   FCS 329 Promotion of Textile and Allied Products 3

   FCS 340 Consumer Education 3

   FCS 356 Marketing 3

   FCS 374 Advertising 3

   FCS 413 Apparel Construction 3

2. Home Economics Education — 36 hours

   FCS 165 Food Science Principles 3

   FCS 210 Human Sexuality 3

   FCS 215 Transitions to Adultood 3

   FCS 260 Nutrition 3

   FCS 318 Intimate Relationships 3

   FCS 410 Teaching Human Sexuality 3

   FCS 413 Marriage and Family in Maturity 3

   FCS 430 Fashion Retailing 3

   FCS 450 Institutional Management 4

   CTE 342 Curriculum Development (Foods) 3

   CTE 598 Independent Study (Foods) 1

   FCS 185 Food Science Principles 3

   FCS 210 Human Sexuality 3

   FCS 215 Transitions to Adultood 3

   FCS 260 Nutrition 3

   FCS 318 Intimate Relationships 3

   FCS 410 Teaching Human Sexuality 3

   FCS 413 Marriage and Family in Maturity 3

FCS 415 Effective Parenting 3

Select 6 hours from:

FCS 209 Consumer Education 3

FCS 225 Computer Applications 3

FCS 305 Professional Selling 3

ED 301 The Teaching of Reading (Secondary) 3

ED 302 Teaching and Learning (Secondary) 4

CTE 410 Seminar in Education 2

CTE 475 Intern Teaching in CTE 10

G. ELECTIVES — Based on MAJOR SEQUENCE requirements

H. BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Vocational Education major will satisfy the Baccalaureate Writing Requirement by successfully completing CTE 342 Curriculum Development in CTE.

Vocational-Technical Curriculum

Bachelor of Science Degree

Minimum hours required for this curriculum — 122 hrs.

Course Requirements

1. General Education Requirements . 37 hrs.

2. Mathematics (110 and 111) . 6 hrs.

3. Technical Major in one of the following areas 30 hrs.

   Drafting

   Graphic Arts

   Metalworking

   Power/Automotive

   Woodworking

4. Technical Minor in any one of the above areas other than the major . 20 hrs.

5. Option I (Vocational-Industrial Education leading to Secondary Teaching Certificate and Vocational Endorsement) * Professional Education Courses . 22 hrs.

   CTE 410 Seminar in Education 2

   CTE 475 Intern Teaching in CTE 10

   ED 250 Human Growth and Development 3

   ED 301 The Teaching of Reading (Secondary) 3

   ED 302 Teaching and Learning (Secondary) 4
FAMILY AND CONSUMER SCIENCES 193

Vocational Minors

SECONDARY EDUCATION IN MARKETING—24 hours
See advisor in Department of Family and Consumer Sciences for course requirements and work hours required.

OCCUPATIONAL CHILD CARE—23-24 hours
See advisor in Department of Family and Consumer Sciences for course requirements and work hours required.

OCCUPATIONAL FOODS—25 hours
See departmental advisor in the Department of Family and Consumer Sciences for course requirements and work hours required.

VOCATIONAL TECHNICAL—20 hours
See the departmental advisor for planning courses in the areas of drafting, graphic arts, metalworking, power/automatic mechanics, and woodworking.

majors in non-vocational teacher preparation programs may earn vocational certification by completing one of the foregoing vocational minor sequences in consultation with the advisor.

Family and Consumer Sciences Courses (FCS)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog. Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-laboratory hours).

FCS 100 Career Seminar
1 hr.
Orientation to special career opportunities in various majors, featuring guest speakers. Specific sections per area of interest.

FCS 124 Apparel Construction (2-3)
3 hrs. Fall, Winter
Basic construction techniques, pattern alteration, fitting and design as related to the individual construction of garment. Test available for those desiring placement in upper level courses.

FCS 125 Adolescent Development (3-0)
3 hrs. Winter
A study of interpersonal relationships and the physical and emotional development of the person in early and later adolescence. Prerequisite: FCS 214.

FCS 220 Textiles (3-0)
3 hrs. Fall, Winter
Consumer-oriented textiles emphasizing fibers, yarns, fabric constructions and finishes as related to use, serviceability and care.

FCS 222 Flat Pattern Design I (2-3)
3 hrs. Winter Odd Years
A study of the drafting techniques employed in the flat pattern method for designing clothing. Prerequisite: FCS 124, Completion of Computer Literacy requirement.

FCS 224 Experimental Clothing Techniques (2-3)
3 hrs. Fall
Experiences in clothing construction with emphasis on special problems relative to varied fabrics and design. May be repeated once. Prerequisite: FCS 124.

FCS 225 Computer Applications
3 hrs.
An introduction to the essentials of microcomputer usage. The student will gain application skills in word processing, spreadsheets, databases and operating systems. The impact of computer usage in society and ethical computer behavior will also be covered as well as terminology, electronic communications, and hardware and system components.

FCS 226 Fashion/Retail Buying (3-0)
3 hrs. Winter
Fundamentals of merchandising mathematics, its relationship to buying, and use in the fashion/retail industry. Includes elements of profit and loss statements, purchase discounts, dating, markup, markdown, turnover, and open-to-buy. Also includes sources of buying information and responsibilities of buyers in various types of firms. Prerequisite: Completion of University computer usage requirement.

FCS 228 Non-Textile Products (3-0)
3 hrs. Fall
Craftsmanship and design as related to non-textile merchandise, raw material sources, manufacturing processes, uses and selections.

FCS 230 Computer Aided Design for Textile and Apparel Applications
3 hrs.
Introduction to the use of CAD software as applied to preproduction tasks in manufacturing of textile and apparel products. Prerequisites: FCS 225 or CS 105.

FCS 249 Residential Architectural Design
3 hrs.
The study of architectural plans and principles of residential structures. Plans produced and studied include floor plans, plot plans, foundation plans, electrical plans, elevations and all necessary details and specifications. Prerequisites: CMD 149, CMD 131.

FCS 250 Interns CADD Applications
3 hrs.
Introduction to computer-aided design and drafting for interior design majors. Prerequisites: FCS 150, FCS 225.

FCS 251 Period Interiors I (3-0)
3 hrs. Fall
Influences and characteristics in period decoration and furniture of historical interiors and exteriors from antiquity to English Victorian.
FCS 252 Period Interiors II (3–0)
3 hrs. Winter
Influences and characteristics in period decoration and furniture of historical interiors and exteriors from Early American through contemporary.

FCS 254 Interior Design Materials
3 hrs. Fall
A study of products and finishing materials for the interior environment which considers basic materials, manufacturing processes and the generic characteristics of goods supplied by the interior designer. Prerequisites: FCS 150, CMD 149.

FCS 255 Lighting for Interiors (2–3)
3 hrs. Winter
Considers light as an element of design and investigates its role in designing interiors. Material covered will emphasize the practicalities of appropriate fixture location and specification, blueprint reading and budgets. Prerequisites: FCS 157 and FCS 249, and FCS 254.

FCS 259 Studio I
3 hrs.
Creation of artistic interiors with appropriate materials, space planning, preparation of graphic documentation, renderings and purchasing data for completing the design process. Prerequisites: FCS 249, FCS 254.

FCS 260 Nutrition (3–0)
3 hrs. Fall
A study of the essential nutrients and their function in the human body. Prerequisites: CHEM 101 or BIOS 112.

FCS 266 Food and Society (3–0)
3 hrs. Fall, Winter
Study of the effects of culture and environment on the problems of food production and meeting nutrient needs in western and non-western countries.

FCS 305 Professional Job Search Strategies (3–0)
3 hrs. Fall, Winter
Extensive investigation of basic elements involved in a job search, including job resume, letter of application, career resources and establishing contacts, and questions and kinesics in the job interview. Prerequisite: Junior standing.

FCS 318 Intimate Relationships: Friends, Family, and Marriage (3–0)
3 hrs. Fall, Winter, Spring
Exploration of research, literature, and family issues related to formation and maintenance of interpersonal relationships in adolescence and adulthood. Includes study of communication and conflict negotiation strategies for marriage and other relationships.

FCS 320 Visual Merchandising (3–0)
3 hrs. Fall, Winter
Specific development of display fundamentals in composition, lighting, color, signing, motion, ideas, organization and management, installation, budget, tools, props, materials, mannequins, store planning, point of purchase, exhibits, showroom, and special promotion. Prerequisite: FCS 155.

FCS 322 Flat Pattern Design II (5–0)
3 hrs. Winter, Spring
A study of advanced drafting techniques, including computer-aided designing, employed in the flat pattern method for designing clothing. Prerequisite: FCS 222.

FCS 324 Dressmaker Tailoring (2–3)
3 hrs. Winter
Construction of tailored garments using time-saving methods. A minimum of two garments will be completed. Prerequisite: FCS 124, FCS 224, or consent of instructor.

FCS 326 History of Costume
3 hrs.
Survey of the development of costume throughout history and its relationship to contemporary fashion.

FCS 329 Promotion of Textile and Apparel Products (3–0)
3 hrs. Fall, Winter
Principles and special techniques and sources of information important in presenting fashion products. Prerequisites: FCS 156, FCS 155.

FCS 350 Textiles for Interiors (3–0)
3 hrs. Fall
Evaluation and analysis of carpets, drapery and upholstery fabrics, and decorative fabric products with regard to quality, selection, performance, and maintenance for home and office. Special attention devoted to material estimating and installation. Prerequisite: FCS 150, FCS 156, FCS 220.

FCS 351 Studio II (2–3)
3 hrs. Winter
Introduces the design of the commercial environments. Prerequisites: FCS 255, FCS 259, FCS 350.

FCS 352 Professional Practices
3 hrs. Winter
An analysis of the professional procedures and practices used in the interior design industry. A survey of the diversified career opportunities in both residential and commercial fields. Prerequisite: FCS 351.

FCS 359 Studio III (1–4)
3 hrs. Winter
Course involves the designing and specifying of store furnishings, fixtures and lighting necessary in coordinating promotional exhibits. Course also addresses signage development, prop construction, showroom design and layout. Prerequisites: FCS 351.

FCS 361 Introduction to Soils (4–0)
4 hrs. Fall, Winter
The origin and development of soils as natural entities with certain inherent characteristics. Basic relationships between soils and plants and the principles involved in the practical use and conservation of the soil. Prerequisite: CHEM 100 or one unit H.S. Algebra and Chemistry.

FCS 364 Land Use and Soil Conservation (4–0)
4 hrs. Winter
A study of the utilization of land by individuals and ways and means of promoting better use of various land types, including recommended practices for conservation of the productivity of our lands.

FCS 368 Quantity Foods (3–3)
4 hrs. Winter
Course emphasizes quantity food purchasing techniques, safety and sanitation, and quantity foods preparation in residence hall kitchens, school lunchrooms, and other quantity foods institutions. Prerequisites: FCS 165, FCS 260.

FCS 405 Travel/Study Seminar 1–4 hrs. Winter, Spring
Student participation in departmentally sponsored travel/study program in U.S. and/or abroad. Written assignments and planned itinerary. Maximum 2–3 foreign, 1–2 domestic, not to exceed 4 in total. Prerequisite: Department approval.

FCS 410 Teaching Food Education in the School (3–0)
3 hrs. Fall, Spring
Methods, materials and curriculum development at various grade levels in sex education in the school program. Prerequisite: FCS 210 or approval of the instructor.

FCS 413 Marriage and Family in Maturity (3–0)
3 hrs. Fall
Marital and family interaction in middle and later years. Prerequisite: FCS 318 or approval.

FCS 415 Effective Parenting (3–0)
3 hrs. Winter
Preparation for parenthood. Study of the relationships between the child, his/her development, the process of parental development, school, and family relationships. Special attention to the systems theory as it applies to the family. Prerequisite: FCS 214.

FCS 422 Apparel Manufacturing 3 hrs.
The study of garment manufacturing, including the decision making involved in producing apparel.

FCS 429 Internship 3–6 hrs.
Off-campus, supervised experience. Specific sections per area of interest. Prerequisite: Department junior or senior. This course is graded on a credit/no credit basis.

FCS 430 Fashion Retailing 3 hrs.
Retailing competencies of profit, economics, merchandising space allocation, supervision, pricing, inventory control, advertising, and legal and ethical considerations with an emphasis on application in fashion and apparel retail settings. Prerequisites: Junior or senior standing.

FCS 451 Studio IV (1–6)
3 hrs. Winter
Continues investigating the design of larger scaled business/commercial interiors with an emphasis on the total design process in developing complex architecturally oriented projects. Prerequisites: FCS 359.

FCS 459 Studio V (1–6) 3 hrs. Winter
Capstone course in investigation and execution of special problems and projects in the field of interior design. Prerequisite: FCS 451.

FCS 460 Advanced Nutrition (3–2)
4 hrs. Fall
Recent developments in nutrition through readings and experiences. Students will be required to work as peer educators in the Sindecuse Health Center's Weight Control Program. Prerequisites: FCS 260, BIOS 240, CHEM 365.

FCS 461 Diet and Disease (3–2)
4 hrs. Winter
Study of the dietetic treatment of impaired digestive and metabolic conditions. Planning of diets and reports of current research. Students will work as peer educators in the University Health Center's Weight Control Program. Prerequisites: FCS 460, dietetic major or consent of instructor.

FCS 462 Community Nutrition (3–0)
3 hrs. Winter
Explores the role of nutrition in the health of a community. Field trips will emphasize the professional competencies necessary for dietitians working in various community situations. Prerequisite: Junior or senior in dietetics.

FCS 466 Institutional Management (4–0)
4 hrs. Fall
Application of institutional administration principles, including job analyses, labor policies, personnel problems, cost control, and food service equipment to different food service systems. Prerequisite: FCS 260.
Career and Technical Education Courses (CTE)

Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-laboratory hours).

CTE 342 Curriculum Development in Career and Technical Education
3 hrs. Fall
Principles of analyzing, selecting, and arranging curriculum for instructional purposes in career and technical education.

CTE 344 Teaching Methods for Career and Technical Education
3 hrs. Winter
Analysis of the teaching-learning process in career and technical education. Included are the teacher's roles, lesson planning, teaching methods, evaluation techniques, and classroom management.

CTE 346 Education Skills for Non-school Practitioners
3 hrs.
Analysis of the teaching-learning process for professionals employed in non-school settings. Included are communication and education skills, interviewing and counseling techniques, teaching methods and evaluation strategies.

CTE 410 Seminar in Education
2 hrs.
The seminar will be directly related to the student intern's teaching experiences within the field of career and technical education. The seminar will further the student's practical understanding of important facets of the art and science of teaching including creating a productive learning environment, advancing student learning in subject matter areas and workplace readiness while improving teaching practice through professional development and outreach with business, professional, family, and community partners. The seminar will be designed to develop reflective practitioners through the use of discussion, learning journals, and the development of a professional teaching portfolio. Must be taken concurrently with CTE 475.

CTE 475 Intern Teaching in CTE
10 hrs.
This course represents the final field experience of the student's curriculum during which an application of all knowledge and skills acquired is facilitated. Through the experiences provided in this course, students develop the skills and knowledge necessary for certification as a career and technical education teacher in the state of Michigan.

CTE 510 Special Populations in Career and Technical Education
3 hrs.
Special populations enrolled in career and technical education programs and the identification of appropriate teaching strategies, materials, and support services for effective teaching and learning.

CTE 512 Principles of Career and Technical Education
3 hrs.
Explanation, identification, investigation of the history, philosophy, principles, programs, and services in career and technical education.

CTE 513 Technical Education Methods
3 hrs.
Analysis and methods of organizing instruction in career and technical education. Advanced teaching plans and methodologies.
Alternative Careers

The student may select a student planned curriculum to pursue a career in sports business; sports management; sports journalism, etc. The student must see an advisor for approval prior to completing 75 credit hours.

General Education Requirement

Each student must complete 35 hours of work in approved General Education courses and/or non-professional courses in the College of Arts and Sciences. The student seeking Michigan teacher certification must complete an additional 5 hours in the College of Arts and Sciences.

Undergraduate Program Admission Policy

All students who intend to complete a major or minor degree offered by the Department of Health, Physical Education, and Recreation must apply to the department for admission to the program. An application for admission may be obtained in the HPER Department Office Complex located on the fourth floor of the Student Recreation Center. Students must complete the following requirements prior to application:

1. Completion of 60 credit hours (transfer hours included);
2. Completion of all requirements included in PEPR 150 (Physical Education Teacher-Coach and Exercise Science majors), PEPR 155 (Health Education-School, Community Health Education majos and minors) with a grade of "C" or better. Students who transfer an equivalent course at least one semester prior to application may select from the following:

   MAJORS
   1. Health Education
      A. School Emphasis (Teacher—K-12)
      B. Community Emphasis
   2. Physical Education
      A. Teacher-Coach Emphasis
      (Teacher—K-12 Certification)
      B. Exercise Science Emphasis
   3. Recreation

   MINORS
   1. Teaching Certification/Endorsements
      A. Health Education (7-12)
      B. Physical Education
      1. Elementary (K-6)
      2. Secondary (7-12)
      3. Special Physical Education (K-12)
   2. Non-Teaching
      A. Athletic Training
      B. Coaching
      C. Recreation
   D. Community Health Education

   The professional student is expected to work closely with personnel. A copy of the "Departmental Handbook" should be secured from the department office promptly after choosing a major or minor.

Transfer Students

Transfer courses from four year schools and appropriate lower division courses from community colleges may be included in majors and minors. However, a minimum of one-half of the required semester hours for a major or a minor must be taken at Western Michigan University. The PEPR teaching methods course(s) must be included in the hours at WMU. Transfer students must participate in HPER entry skill and fitness assessments administered during PEPR 150 (Phys Ed), PEPR 155 (Health), or PEPR 170 (Rec). Transfer students should contact course instructor at the beginning of the first semester of work at WMU.

MAJORS

1. Teaching Certification/Endorsements
   A. Health Education (7-12)
   B. Physical Education
      1. Elementary (K-6)
      2. Secondary (7-12)
      3. Special Physical Education (K-12)
   2. Non-Teaching
      A. Athletic Training
      B. Coaching
      C. Recreation
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Restricted Course List

PEPR 220 Basic Health Concepts I
PEPR 221 Basic Health Concepts II
PEPR 231 Introduction to Community Health
PEPR 233 Technical Recreation Skills
PEPR 271 Leadership/Program Theory
PEPR 290 Recreation/Sports for Special Populations
PEPR 295 Biomechanical Analysis
PEPR 312 ADM/Dev Instructional Systems
PEPR 316 Issues in Health Education

PEPR 345 Nature and Bases of Motor Behavior
PEPR 371 Leadership/Program Planning
PEPR 6 Recreation Organization/Administration I
PEPR 380 Fundamentals of Sports Injuries
PEPR 390 Physiology of Motor Activity
PEPR 399 Recreation Practicum
PEPR 400 Field Experience
PEPR 412 Teaching Skills and Strategies
PEPR 420 Test and Development of Programs for Exceptional Children
PEPR 430 Community Health Education II
PEPR 444 Organization and Administration of Physical Activity Systems
PEPR 445 Teaching Strategies and Skills
PEPR 450 Cultural Basis of Physical Education
PEPR 470 Recreation Facilities and Areas
PEPR 472 Recreation and Aging
PEPR 476 Recreation Organization/Administration II
PEPR 480 Research/Evaluation
PEPR 497 Professional Development Seminar
PEPR 499 Internship

Majors

Health Education Major

45 credit hours
Bachelor of Science Degree

The major in health education allows students to choose one of two professional preparation options:

1. School emphasis
2. Community emphasis

Successful completion of the school emphasis makes the student eligible for K-12 certification for the teaching of health education in Michigan. Students must complete the education sequence required by the Department of Education and Professional Development including the internship teaching experience. Subject area tests of competence administered by the Michigan Department of Education must be passed prior to certification by that agency.

The community emphasis prepares students to assume careers in non-school settings such as community health agencies and private health-oriented organizations. Students completing the community emphasis are not eligible for teaching certification.

All health education majors are expected to have a valid first aid certificate at the time of graduation.

BACCALAUREATE WRITING REQUIREMENTS

Students who have chosen the Health Education major—School Emphasis will satisfy the Baccalaureate Writing Requirement by successfully completing ED 395 School and Society.

Students who have chosen the Health Education major—Community Emphasis will satisfy the Baccalaureate Writing Requirement by successfully completing PEPR 430 Community Health II.

COURSE REQUIREMENTS

GENERAL EDUCATION

School emphasis: 40 hours
Community emphasis: 35 hours
HEALTH EDUCATION—SCHOOL EMPHASIS

Required Cognates 10 hours

PSY 100 General Psychology 3

OR

PSY 150 Introduction to Human Behavior 3

SOC 200 Principles of Sociology 3

BIOS 112 Introduction to Biomedical Sciences 3

BIOS 211 Human Anatomy 4

BIOS 240 Human Physiology 4

FCS 218 Nutrition 3

FCS 258 Consumer Education 3

PEPR 316 Any 316 offered 2

Required Courses 28 hours

PEPR 155 Foundations of Health Education 3

PEPR 181 First Aid 2

FCS 210 Sex Education 3

FCS 418 Teaching Sex Education in the School 3

*PEPR 220 Basic Health Concepts I 3

*PEPR 221 Basic Health Concepts II 3

FCS 258 Consumer Education 3

*PEPR 312 Administration and Development of Instructional Systems 2

PEPR 316 Topics in Health Education 2

PEPR 382 Measurement and Evaluation in Health Education 2

*PEPR 410 Intern Teaching Seminar 1-2

*PEPR 412 Teaching Skills and Strategies 2

*PEPR 475 Intern Teaching 5-10

Recommended Electives for Health Education-School Emphasis 17 hours

BIOS 507 Biology of Addictive Drugs 3

BIOS 512 Environment and Health Problems 3

BIOS 531 Biology of Aging 3

COM 170 Interpersonal Communication I 3

COM 200 Introduction to Communication Theory 3

COM 370 Interpersonal Communication II 3

FCS 209 Recreation Education 3

FCS 318 Intimate Relationships 3

PEPR 300 Seminar Series: Health Competencies 1-4

*PEPR 316 Health Issues 2

*PEPR 231 Introduction to Community Health 3

PEPR 390 Exercise Physiology 2

SOC 337 Sociology of Health and Illness 3

SOC 390 Marriage and Family Relations 3

SOC 412 Child Development 3

SOC 490 Social Context of Sexual Behavior 3

SOC 552 Sociology of Aging 3

Required Teaching Assistant

HEALTH EDUCATION—COMMUNITY EMPHASIS

Required Cognates 10 hours

PSY 100 General Psychology 3

OR

PSY 150 Introduction to Human Behavior 3

SOC 200 Principles of Sociology 3

BIOS 112 Introduction to Biomedical Sciences 3

BIOS 211 Human Anatomy 4

BIOS 240 Human Physiology 4

FCS 218 Nutrition 3

FCS 258 Consumer Education 3

*PEPR 220 Basic Health Concepts I 3

*PEPR 221 Basic Health Concepts II 3

*PEPR 231 Introduction to Community Health 3

FCS 260 Nutrition 3

PEPR 316 Topics in Health Education 2

PEPR 382 Measurement and Evaluation in Health Education 2

*PEPR 400 Field Experience in Community Health 1-8

*PEPR 430 Community Health Education II 3

*PEPR 431 Community Health Methods and Strategies 3

Electives 8-14 hours

Elective courses required for community health education majors will be fulfilled by selecting appropriate courses from the list below with the consent of a department advisor. The department from which the electives are selected should differ from the student’s minor course of study.

PEPR 316 Any 316 offered 2

HHS 569 AIDS: Natural History of an Epidemic 3

SOC 373 Sociology of Health and Illness 3

PSY 426 Human Drug Use and Abuse 3

BIOS 512 Introduction to Health Problems 3

COM 484 Health Communication 3

FCS 318 Intimate Relationships 3

HDL 531 Introduction to Health and Diet Nutrition 3

MGMT 453 Organizational Behavior 3

PHIL 410 Professional Ethics 4

PSY 344 Abnormal Psychology 3

SOC 122 Death and Mourning 3

Bereavement 3

SOC 352 Introduction to Social Gerontology 3

SOC 373 Sociology of Health and Illness 3

PEPR 300 Seminar Series: Health Competencies 1-4

*PEPR 390 Physiology of Motor Activity 2

*PEPR 490 Adult Fitness and Exercise Prescription 2

Required Teaching Assistant

*Restricted courses, pre-requisites required

Professional Education Major

45 credit hours Bachelor of Science Degree

The major in physical education allows the student to choose one of two professional preparation options:

1. Teacher-Coach Emphasis

2. Exercise Science Emphasis

Successful completion of the Teacher-Coach emphasis makes a student eligible for K-12 certification for the teaching of physical education in Michigan. Students must complete the education sequence required by the Department of Education and Professional Development including the intern teaching experience. Teacher and minor students must serve as a teaching assistant for one semester in a general physical education course during their first 60 hours at Western Michigan University. In addition, students must complete a minimum of 60 clock hours of observation and participation in both elementary and secondary public schools as well as an extensive lab experience with exceptional children.

The Exercise Science emphasis prepares students to assume careers in non-school settings such as corporate wellness, and commercial adult fitness programs. Students complete two extensive practica in supervised settings on campus and/or a work site. Students completing the Exercise Science emphasis are not eligible for teaching certification.

BACCALAUREATE WRITING REQUIREMENTS

Students who have chosen the Physical Education major will satisfy the Baccalaureate Writing Requirement by successfully completing PEPR 450 Cultural Bases of Physical Education.

HOURS REQUIRED 130

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

General Education Requirement:

Teacher-Coach Emphasis 40

Exercise Science Emphasis 35

TEACHER-COACH EMPHASIS

K-12 State Provisional Certificate

Required Cognates:

BIOS 112 Introduction to Biomedical Sciences 3

BIOS 211 Human Anatomy 4

BIOS 240 Human Physiology 4

PEPR 111 Healthy Living 2

Professional Core Requirements 21

PEPR 150 Foundations of Physical Education and Exercise Science 3

PEPR 181 First Aid 2

PEPR 244 Early Elementary Movement and Activities 2

*PEPR 296 Biomechanics of Analysis of Activity 2

PEPR 322 Physical Activities for Special Populations 2

OR

PEPR 320 Physical Education for Individuals with Disabilities 3

*PEPR 345 Nature and Bases of Motor Skills 2

*PEPR 390 Physiology of Motor Activity 2

PEPR 392 Measurement and Evaluation in HPER 2

*PEPR 444 Administration and Development of Instructional Systems in Physical Education (PYE) 2

*PEPR 445 P.E. Teaching Skills and Strategies (PYE) 2

*PEPR 450 Cultural Bases of Physical Education 2

Theory Emphasis Requirements 11

PEPR 235 Introduction to Coaching 2

PEPR 236 Officiating Series (repeatable) 1

PEPR 337 Coaching and Advocacy Techniques (2 courses) 4

*PEPR 380 Foundation of Sports Injuries 2

*PEPR 400 Field Experience Coaching 2

Activity Emphasis Requirements 11

PEPR 105 Baseball/Softball; Volleyball 1

PEPR 110 Soccer; Basketball 1

PEPR 106 Recreational Dance 1

PEPR 115 Tumbling; Rhythmic Gymnastics 1

PEPR 200 Football; Wrestling OR

PEPR 205 Weight Training 1

PEPR 210 Racquet Sports 1

PEGN Aquatics (at level) 2

PEPR 215 Aerobic Conditioning 1

PEPR 305 Golf; Archery; Bowling 1

PEPR 310 Track and Field 1

Required Teaching Assistant N/C

*PEPR 410 Intern Teaching Seminar 1-2

*PEPR 475 Intern Teaching 5-10

Required Teaching Assistant

EXERCISE SCIENCE EMPHASIS 44-45

Required Cognates:

BIOS 112 Introduction to Biomedical Sciences 3-4
**Recreation**

45 credit hours
Bachelor of Arts Degree
or
Bachelor of Science Degree

The Recreation major is designed to prepare students to assume leadership and/or administrative roles in public or private recreation agencies and organizations. The hours of electives within this course of study allow the student flexibility in preparing for a specific emphasis area in recreation. Students will also complete a supervised internship of at least three consecutive months duration.

### Baccalaureate Writing Requirements

Students who have chosen the Recreation major will satisfy the Baccalaureate Writing Requirement by successfully completing PEPR 450 Cultural Bases of Physical Education.

### Hours Required

<table>
<thead>
<tr>
<th>Category</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>General Education Courses</td>
<td>35</td>
</tr>
<tr>
<td>Physical Education</td>
<td>2</td>
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<tr>
<td>Required Professional Courses</td>
<td>35</td>
</tr>
</tbody>
</table>

### Electives

- In consultation with advisor: 2
- PEPR 224 Dance Instruction: 1
- PEPR 480 Basic EKG: 1
- Required Teaching Assistant: N/C
- *Restricted courses, pre-requisites required.

### Activity Emphasis Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 102</td>
<td>Cycling: Relaxation/STressManagement</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 106</td>
<td>Recreational Dance</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 205</td>
<td>Weight Training</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 210</td>
<td>Racquet Sports</td>
<td>1</td>
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<tr>
<td>PEGN 215</td>
<td>Aerobic Conditioning</td>
<td>1</td>
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<tr>
<td>PEGN 305</td>
<td>Golf: Archery: Bowling</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 252</td>
<td>Swimming Conditioning</td>
<td>1</td>
</tr>
</tbody>
</table>

### Required Professional Courses

- **BIOS 211** Human Anatomy  
- **BIOS 240** Human Physiology  
- **PEPR 111** Healthy Living  

### Professional Core Requirements

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>PEPR 150</td>
<td>Foundations of Physical Education and Exercise Science</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 181</td>
<td>First Aid</td>
<td>2</td>
</tr>
<tr>
<td><em>PEPR 220</em></td>
<td>Basic Health Concepts II</td>
<td>3</td>
</tr>
<tr>
<td><em>PEPR 221</em></td>
<td>Basic Health Concepts III</td>
<td>3</td>
</tr>
<tr>
<td>FCS 210</td>
<td>Sex Education</td>
<td>3</td>
</tr>
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<td><em>FCS 410</em></td>
<td>Teaching Sex Education in the School</td>
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<tr>
<td>PEPR 382</td>
<td>Measurement and Evaluation in Health Education</td>
<td>2</td>
</tr>
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<td><em>PEPR 316</em></td>
<td>Issues in Health Education</td>
<td>2</td>
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<tr>
<td><em>PEPR 412</em></td>
<td>Teaching Skills and Strategies</td>
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</table>

### Health Education—School Emphasis

- **PEPR 155** Foundations of Health Education  
- **PEPR 181** First Aid  
- **PEPR 220** Basic Health Concepts I  
- **PEPR 221** Basic Health Concepts II  
- **FCS 210** Sex Education  
- **FCS 410** Teaching Sex Education in the School  
- **PEPR 382** Measurement and Evaluation in Health Education  
- *PEPR 316* Issues in Health Education  
- *PEPR 312* Admin. and Dev. of Instr. Systems  
- *PEPR 412* Teaching Skills and Strategies

### Health Education—Community Education Emphasis

- **PEPR 155** Foundations of Health Education  
- **PEPR 181** First Aid  
- **PEPR 220** Basic Health Concepts I  
- **PEPR 221** Basic Health Concepts II  
- **FCS 210** Sex Education  
- **FCS 410** Teaching Sex Education in the School  
- **PEPR 382** Measurement and Evaluation in Health Education  
- *PEPR 231* Introduction to Community Health I  
- *PEPR 430* Community Health II  
- **PEPR 400** Field Experience in Community Health  
- **PEPR 431** Community Health Methods and Statistics  

### Required Teaching Assistant

#### Elementary Physical Education Minor

(Required as part of Elementary Group Minor)

<table>
<thead>
<tr>
<th>Cognates</th>
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<tr>
<td>BIO 112</td>
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</table>

### Required Professional Courses:

#### Academic

- **PEPR 150** Foundation of Physical Education and Exercise Science  
- **PEPR 244** Early Elementary Movement and Activities  
- ***PEPR 220* Basic Health Concepts I**  
- ***PEPR 221* Basic Health Concepts II**  
- **FCS 210** Sex Education  
- **FCS 410** Teaching Sex Education in the School  
- ***PEPR 316* Issues in Health Education**  
- ***PEPR 312* Admin. and Dev. of Instr. Systems**  
- ***PEPR 412* Teaching Skills and Strategies**

### Required Activity

- **PEPR 155** Foundations of Health Education  
- **PEPR 181** First Aid  
- **PEPR 220** Basic Health Concepts I  
- **PEPR 221** Basic Health Concepts II  
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- *PEPR 430* Community Health II  
- **PEPR 400** Field Experience in Community Health  
- **PEPR 431** Community Health Methods and Statistics

### Elective Courses

- Elect from the following courses and/or other PEPR/PEGN courses with permission of advisor.

#### Minors

**Health Education Minor**

25 credit hours

A minor in health education is offered. Students have the option of choosing either a school emphasis or a community emphasis within the minor. The school emphasis is especially appropriate for those specializing in middle/junior high school education, in special education, and in secondary education with majors in such areas as biology, physical education, psychology, and sociology. Students completing requirements are eligible for certification to teach health education in grades 7-12 in Michigan. The community emphasis prepares students to provide health instruction in community and private agencies.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Bios 112</td>
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### Required Teaching Assistant

#### Elementary Physical Education Minor

(Must be taken as part of Elementary Group Minor)

<table>
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### Required Professional Courses:

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- **PEPR 244** Early Elementary Movement and Activities  
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<tbody>
<tr>
<td>BIO 112</td>
<td>3-4</td>
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</tbody>
</table>
Special Physical Education Courses 13

Applicable to total General Education courses, the courses in Area B, and complete the special physical education the Elementary Physical Education minor.

Students majoring in other areas must complete the special physical education courses and all courses in area B.

**Required Professional Courses** 13

PEPR 150 Foundations of Physical Education and Exercise Science 3

*PEPR 295 Biomech. Analysis of Activity 2

*PEPR 390 Physiol. of Motor Activity 2

PEPR 392 Measurement and Evaluation in Physical Education 2

*PEPR 444 Administration and Development of Instructional Systems 2

*PEPR 445 Physical Education: Teaching Skills and Strategies 2

**Activity Required:** 9

PEPR 236 Officiating Series 1

PEPR 106 Recreational Dance 1

**Individual Sports (4 courses) ** 4

**Team Sports (2 courses) ** 2

**Lifetime Sports/Activities (1 course) ** 1

**Required Teaching Assistant** 0

**Secondary Physical Education Minor 23 credit hours** *(Applicable to total General Education requirement)*

Cognates 12

BIOS 112 Introduction to Biomedical Sciences 3-4*

BIOS 211 Human Anatomy 4

BIOS 240 Human Physiology 4

**Required Professional Courses** 13

PEPR 150 Foundations of Physical Education and Exercise Science 3

*PEPR 295 Biomech. Analysis of Activity 2

*PEPR 390 Physiol. of Motor Activity 2

PEPR 392 Measurement and Evaluation in Physical Education 2

*PEPR 444 Administration and Development of Instructional Systems 2

*PEPR 445 Physical Education: Teaching Skills and Strategies 2

**Activity Required:** 9

PEPR 236 Officiating Series 1

PEPR 106 Recreational Dance 1

**Individual Sports (4 courses) ** 4

**Team Sports (2 courses) ** 2

**Lifetime Sports/Activities (1 course) ** 1

**Required Teaching Assistant** 0

**Special Physical Education Minor 22 credit hours**

Designed to prepare special education and physical education majors to teach children with disabilities in inclusive settings. Students majoring in special education must complete the special physical education courses and all courses listed in area A. Physical Education majors must complete the special physical education courses and all courses in area B. Students majoring in other areas must complete the special physical education courses, the courses in Area B, and complete the Elementary Physical Education minor.

**Required Cognates** 7

BIOS 112 Introduction to Biomedical Sciences 3*

BIOS 211 Human Anatomy 4

*Applicable to total General Education requirement.

**Special Physical Education Courses** 13

PEPR 324 Sports for Individuals with Disabilities 3

*PEPR 321 Therapeutic Programs for Individuals with Disabilities 3

*PEPR 420 Testing and Developmental Programs for Children with Disabilities 3

PEPR 400 Professional Field Experience/Internship 4

**A. Background Courses in Physical Education** 9

*PEPR 444 Administration and Development of Instructional Systems 2

*PEPR 445 Physical Education: Teaching Skills and Strategies 2

**B. Background Courses in Special Education** 9

SPED 530 Introduction to Special Education 3

SPED 538 Introduction to Classroom Management 3

SPED 539 Consultation and Communication in Special Education 3

**Athletic Training Minor** *(Non-Teaching)*

**16-21 credit hours**

Students who major in exercise science should not the athletic training minor.

**Required Cognates:**

BIOS 112 Introduction to Biomedical Sciences 3*

BIOS 211 Human Anatomy 4

BIOS 240 Human Physiology 4

**Required Core:** 13

PEPR 181 First Aid 2

*PEPR 380 Foundations of Sports Injuries 2

*PEPR 380 Foundations of Sports Injuries 2

**FCS 280 Nutrition** 3

**PEPR 400 Field Experience Athletic Training 2**

**PEPR 376 Organization and Management** 3

**PEPR 337 Advanced Theory of Coaching Series—Prerequisites: Must have had first level course(s) or permission of instructor. Elect 6 hours (must be one team sport and one individual sport) 6**

**TEAM**

Basketball 2

Baseball or Softball 2

Volleyball 2

Football 2

Soccer 2

Ice Hockey 2

**INDIVIDUAL**

Gymnastics 2

Tennis 2

Track and Field 2

**PEPR 236 Officiating—Select two of the following officiating courses to complete the 11 hrs. of Professional Electives 2**

Basketball 1

Gymnastics 1

Baseball 1

Volleyball 1

Softball 1

**PEPR 105-310 professional activity courses** 3

**Recreation Minor** *(Non-Teaching)*

24 credit hours

The recreation minor is designed to prepare students to assume leadership roles in public or private recreation agencies and organizations.

Please note in course descriptions when courses are offered and the suggested sequence of course work.

**PEPR 170 Introduction to Recreation** 3

**PEPR 233 Technical Recreation Skills** 2

**PEPR 271 Recreation Programming and Leadership Theory** *(Prereq. 233)* 3

**PEPR 290 Recreation for Special Populations** 2

**PEPR 371 Practical Recreation Programming and Leadership Theory** *(Prereq. 271)** 2

**PEPR 376 Organization and Administration of Recreation I** *(Prereq. 371)* 3

**PEPR 472 Recreation for the Aging** 2

**PEPR 476 Advanced Organizational Administration of Recreation** *(Prereq. 376)* 2

**PEPR 488 Research in Recreation** 2

**PEPR 497 Professional Development in Recreation** *(Prereq. 476)* 3
### Courses By Topic

#### PROFESSIONAL ACTIVITY COURSES (PEPR)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>102</td>
<td>Cycling: Relaxation/Stress Management</td>
</tr>
<tr>
<td>110</td>
<td>Soccer: Basketball</td>
</tr>
<tr>
<td>155</td>
<td>Tumbling: Apparatus</td>
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<tr>
<td>200</td>
<td>Football: Wrestling</td>
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<tr>
<td>205</td>
<td>Cross Country Ski: Weight Training</td>
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<tr>
<td>210</td>
<td>Racquet Sports</td>
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<td>215</td>
<td>Aerobic Conditioning</td>
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<tr>
<td>235</td>
<td>Golf: Archery: Bowling</td>
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<tr>
<td>310</td>
<td>Track and Field</td>
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#### HEALTH EDUCATION ACADEMIC COURSES (PEGR)

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<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>100</td>
<td>Health for Better Living</td>
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<tr>
<td>155</td>
<td>Foundations of Health Education</td>
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<tr>
<td>161</td>
<td>First Aid</td>
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<tr>
<td>220</td>
<td>Basic Health Concepts I</td>
</tr>
<tr>
<td>221</td>
<td>Basic Health Concepts II</td>
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<tr>
<td>231</td>
<td>Introduction to Community Health</td>
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<tr>
<td>316</td>
<td>Issues in Health Education</td>
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<tr>
<td>400</td>
<td>Field Experience in Health</td>
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<tr>
<td>412</td>
<td>Teaching Skills and Strategies in Health</td>
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<tr>
<td>431</td>
<td>Community Health Methods and Strategies</td>
</tr>
<tr>
<td>510</td>
<td>Modern Health for Teachers and Health Professionals</td>
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<tr>
<td>512</td>
<td>Principles, Practices, and Methods in Health</td>
</tr>
<tr>
<td>514</td>
<td>Methods and Materials in Health Education</td>
</tr>
<tr>
<td>516</td>
<td>Issues in Health Education</td>
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#### PHYSICAL EDUCATION ACADEMIC COURSES (PEPR)

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<tbody>
<tr>
<td>150</td>
<td>Foundations of Health, Physical Education and Recreation</td>
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<tr>
<td>181</td>
<td>First Aid</td>
</tr>
<tr>
<td>231</td>
<td>Introduction to Community Health</td>
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<tr>
<td>235</td>
<td>Theory of Coaching</td>
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<td>236</td>
<td>Officiating Series</td>
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<td>242</td>
<td>Aerobic Dance Instruction</td>
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<td>244</td>
<td>Early Elementary Movement and Activities</td>
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<td>295</td>
<td>Biomechanical Analysis of Activity</td>
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<tr>
<td>300</td>
<td>Seminar Series</td>
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<tr>
<td>320</td>
<td>Physical Education for Individuals with Disabilities</td>
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<tr>
<td>321</td>
<td>Therapeutic Programs for Individuals with Disabilities</td>
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<td>322</td>
<td>Physical Activities for Special Populations</td>
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<td>324</td>
<td>Sports for Individuals with Disabilities</td>
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<td>325</td>
<td>Swimming for the Exceptional Child</td>
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<td>335</td>
<td>Advanced Theory of Coaching</td>
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<td>337</td>
<td>Coaching and Advanced Techniques</td>
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<td>345</td>
<td>Nature and Bases Motor Skills</td>
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<td>Foundations of Sports Injuries</td>
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<td>Community Health Methods and Strategies</td>
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<td>Administration and Development of Instructional Systems in Physical Education</td>
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<tr>
<td>445</td>
<td>Teaching Skills and Strategies</td>
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<tr>
<td>450</td>
<td>Cultural Bases of Physical Education</td>
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<tr>
<td>450</td>
<td>Basic EKG</td>
</tr>
<tr>
<td>490</td>
<td>Adult Fitness and Exercise Prescription</td>
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#### PROFESSIONAL RECREATION COURSES (PEPR)

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<tbody>
<tr>
<td>170</td>
<td>Introduction to Recreation</td>
</tr>
<tr>
<td>172</td>
<td>Camp Leadership</td>
</tr>
<tr>
<td>233</td>
<td>Technical Concepts and Practices of Recreation Activity Leadership</td>
</tr>
<tr>
<td>271</td>
<td>Recreation Programming and Leadership Theory</td>
</tr>
<tr>
<td>290</td>
<td>Recreation for Special Populations</td>
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</tbody>
</table>

#### Professional Health, Physical Education and/or Recreation (PEPR/PEGR)

A list of approved General Education courses can be found in ‘Academic Policies and Procedures’ earlier in this catalog. Course descriptions preceded by a * are open to all students.

**PEPR 100 Health for Better Living**

The focus of this introductory health course is to assist students in achieving an awareness of optimal physical, mental, and social health in a changing environment. Guest lectures from the community will present some of the topics considered important to the health of modern people. Preference is given to freshmen and sophomores.

**PEPR 102 Cycling: Relaxation/Stress Management**

1 hr. Fall

**PEPR 105 Baseball/Softball: Volleyball**

1 hr. Fall

**PEPR 106 Recreational Dance**

1 hr. Fall, Winter

**PEPR 110 Soccer: Basketball**

1 hr. Fall

**PEPR 111 Healthy Living**

2 hrs.

This course is designed to provide students with the information and skills that are necessary for positive health decision making. Students will be introduced to concepts associated with healthy decision making, negative health consequences of poor decisions (e.g., substance abuse, HIV/AIDS, sexually transmitted diseases, depression, lifestyle related diseases, stress, eating disorders, etc.), and skill building strategies.

**PEPR 115 Tumbling: Apparatus**

1 hr. Winter

**PEPR 150 Foundations of Physical Education and Exercise Science**

3 hrs. Fall, Winter

An introduction to the university, the profession, and an attempt to assist the students in making a realistic appraisal of his/her own aptitudes and capabilities relevant to the profession via actual testing of personal competencies.

**PEPR 155 Foundations of Health Education**

3 hrs. Fall, Winter

This course will provide students with the philosophical background in the development of health education. Topics include history and philosophy of health education, health promotion, professional competencies, ethics, organizations and future issues.

**PEPR 170 Introduction to Recreation**

3 hrs. Fall

*An introduction to the field of recreation and the role of leisure in modern society including current trends, job opportunities in various settings, programming, and leadership.

**PEPR 172 Camp Leadership**

2 hrs. Fall (even)

The investigation of the responsibilities of the leaders in outdoor recreation programs and organized camp settings.

**PEPR 181 First Aid**

2 hrs. Fall, Winter

*The standard course in first aid techniques leading to Red Cross certification. Open to all students.

**PEPR 199 Computer Applications for Health, Physical Education, and Recreation**

2 hrs.

This course will provide an introduction to computer terminology, technology, communications and information systems. Its purpose is to provide students with the knowledge of current computer applications specific to PEPR field. This includes use of the computer for information gathering, information processing, communications, word processing, spreadsheets, presentations, and database management.

**PEPR 200 Football: Wrestling**

1 hr. Fall

**PEPR 205 Weight Training**

1 hr. Fall, Winter

**PEPR 210 Racquet Sports**

1 hr. Fall

**PEPR 215 Aerobic Conditioning**

1 hr. Fall, Winter

**PEPR 220 Basic Health Concepts I**

3 hrs. Fall, Winter

Designed to provide students with basic health content. Topics to be discussed include: health and wellness, stress and mental health, aging and death, physical fitness, weight control, and substance use and abuse.

**PEPR 221 Basic Health Concepts II**

3 hrs. Fall, Winter

Designed to provide students with basic health education content. Topics to be discussed include: consumer health, chronic diseases, infectious diseases, environmental health, safety, and accident prevention.

**PEPR 231 Introduction to Community Health**

3 hrs. Fall

This course deals with the historical development of the principles of organized public health activities and their application to present day life. The student is introduced to the scope of public health programs. Prerequisite: PEPR 155.

**PEPR 233 Technical Concepts and Practices of Recreation Activity Leadership**

2 hrs.
This course is designed to provide the recreation student with the basic technical and physical leadership skills necessary to be a successful leader, facilitator of leisure and a valuable resource to any organization providing recreational activities. Prerequisite: PEPR 170.

**PEPR 235 Theory of Coaching**

2 hrs. Fall, Winter

Introduction to coaching includes basic principles, covers State Athletic Handbook, budgets, scheduling, facilities, liability, public relations, relationships with staff, faculty, students, parents, press, etc.

**PEPR 236 Officiating Series**

2 hr. Fall, Winter

The discussion and application of rules and officiating techniques. The student is required to officiate in out-of-class athletic programs. Prerequisites: Must have had the first level activity or permission of instructor. Open to all students

Fall Semester: Basketball, Football
Winter Semester: Basketball, Volleyball, Softball/Baseball, Track and Field

**PEPR 241 Physical Education and Recreation for Teachers**

2 hrs. This course is open only to teachers. Topics included in the course are: Program planning, making of games and equipment, accident prevention, basic motor skills. Practice in games, stunts, rhythms and recreational activities will be included. Offered by extension only.

**PEPR 242 Aerobic Exercise Instruction**

1 hr. Designed to provide information and experiences leading to successful selection of activities, planning and presentation skills necessary to provide aerobic activity instruction.

**PEPR 244 Early Elementary Movement and Activities**

2 hrs. Fall, Winter

Designed to provide information concerning the motor development of children and experiences that apply that information in the planning of appropriate exercise and physical experiences, i.e., basic skills, creative movement, rhythms, and lead up games. Prerequisite: PEPR 150.

**PEPR 271 Recreation Programming and Leadership Theory**

3 hrs. This course is a study of the principles and theories behind recreation programming and leadership. The purpose of this course is to familiarize the student with recreation programming theory and how that theory is important to the recreation programmer. Further, the course will teach the different theories of leadership including group and individual decision making processes. It is the purpose of this course to familiarize the student with theory that can put into practice during the practical semester of programming and leadership. Prerequisite: PEPR 170, 233.

**PEPR 276 Outdoor Education**

2 hrs. Winter only

*A course in the philosophy, methods, and materials of outdoor education emphasizing outdoor education activities for children and youth.

**PEPR 290 Recreation for Special Populations**

2 hrs. An overview of inclusive and special recreation programming designed for the student preparing for a career in recreation (leisure services). This course will provide the student with a sensitivity to and knowledge about individuals with disabling conditions and their recreation/leisure needs. Prerequisite: PEPR 271.

**PEPR 295 Biomechanical Analysis of Activity**

2 hrs. Fall, Winter

The analysis and measurement of human performance. Includes the examination and application of biomechanical principles to physical education and sport activities. Prerequisite: BIOS 211.

**PEPR 300 Seminar Series**

1–4 hrs. Fall, Winter

Designed to provide an opportunity for qualified students to examine and discuss a subject area of field of common interest. Enrollment by written permission of the instructor.

**PEPR 305 Golf : Archery : Bowling**

1 hr. Fall, Winter

**PEPR 310 Track and Field**

1 hr. Fall

**PEPR 312 Planning School Health Programs**

2 hrs. Fall, Winter

Designed to provide information and experiences which will enable students to develop planning skills for a variety of health promotion programs in the school setting. Prerequisites: PEPR 155, 220, 221; FCS 210 and 260.

**PEPR 316 Issues in Health Education**

2 hrs. Fall, Winter

The course will focus on current health issues. May be designed to deal with one issue or several. Prerequisite: PEPR 155, 220, 221.

**PEPR 317 Cardiovascular Health**

2 hrs. This course will focus on the current issue of cardiovascular health, heart and vascular disease, and implications for lifestyle behavior change and health education programs. Prerequisites: BIOS 211, BIOS 240, PEPR 150 or PEPR 155.

**PEPR 320 Physical Education for Individuals with Disabilities**

3 hrs. Fall, Winter

This course will include activities and games used in adaptive, developmental, and corrective programs with disabilities. An emphasis will be placed on designing activities for individuals with disabilities who are included in the regular physical education program.

**PEPR 321 Therapeutic Programs for Individuals with Disabilities**

3 hrs. Fall

The evaluation, interpretation and planning of therapeutic and rehabilitation programs, individuals who are disabled. Emphasis will be placed on programs for individuals who have difficulty with primitive reflexes, righting, automatic movement and equilibrium reactions as well as a study of neurodevelopmental therapy. Prerequisite: BIOS 211.

**PEPR 322 Physical Activity for Special Populations**

2 hrs. Fall, Winter

Motor appropriate movements and games used to integrate special populations with non-disabled individuals in exercise-related activities are explored.

**PEPR 324 Sports for Individuals with Disabilities**

3 hrs.

Designed to provide students with coaching, teaching, and skill development techniques for the variety of sports and activities in which individuals with disabilities participate. Emphasis will also be placed on participation in field experience during organized sports competitions for individuals with disabilities.

**PEPR 325 Swimming for the Exceptional Child**

3 hrs. Fall

The study of physical and learning disabilities, values of swimming, and teaching techniques for these disabilities. Includes experience teaching exceptional children. Prerequisite: PEGN 350 WSI.

**PEPR 335 Advanced Theory of Coaching**

2 hrs.

A continuation course for professional students with a major in physical education or minor in coaching pursuing the second level of Program for Athletic Coaches Education Certification (PACE). PACE Level II certification demonstrates advanced competence in the interpersonal and technical skills of coaching high school sports in Michigan. Course content provides an understanding as to significance of quality coaching, human growth and development, conditioning for sport performance and psychological and social skills necessary to coach high school sports. Prerequisite: PEPR 235.

**PEPR 337 Coaching and Advanced Technique**

2 hrs. Fall, Winter

Coaching and advanced skills, selection of a team, preparation, officiating and conducting competitive events. Prerequisites: Must have had first level course(s). Tennis, Soccer, Baseball, Football, Softball, Basketball, Track/Field, Volleyball, Wrestling, Gymnastics

**PEPR 340 Physical Education for the Elementary Classroom Teacher**

2 hrs. Fall, Winter, Spring

This course is structured for the future elementary classroom teacher and/or special education teacher. It provides experience in the selection and teaching of appropriate elementary physical education movement activities in the areas of basic skills, stunts and tumbling, simple games and sports, rhythms and classroom correlated activities. This course is not open to physical education majors or minors

**PEPR 345 Nature and Bases of Motor Skills**

2 hrs. Fall, Winter

Describes and analyzes the characteristic motor development patterns and evaluates the potential of children’s motor performance. Emphasis will be placed on the introduction and explanation of the psychomotor domain. Prerequisite: BIOS 240 or permission of instructor.

**PEPR 368 Administration and Organization of Intramural Sports**

2 hrs. Fall only

The problems, policies, finances, eligibility, awards, officiating, publicity, and procedures related to the intramural program.

**PEPR 371 Practical Recreation Programming and Leadership**

2 hrs.

The purpose of this course is to enable students to put programming theory into practice. The course is designed to allow students to apply what they have learned in programming/leadership theory into practice. The course will center around three practical experiences: (1) Programming the Intramural Sports Turkey Trot, (2) Designing a practical program given a real world situation, and (3) Working with the outdoor adventure program at Pretty Lake Adventure Center.

**PEPR 376 Organization and Administration of Recreation**

3 hrs.

This course is designed to provide students with the opportunity to understand the organizational and administrative principles,
objectives, procedures, and practices involved in operating recreation and leisure service organizations. Prerequisite: PEPR 371.

PEPR 380 Foundations of Sports Injuries 2 hrs. Fall, Winter
Basic first aid and emergency concepts, prevention, recognition, initial and follow-up care are studied. Principles/techniques are presented in a lecture and laboratory instructional format. Prerequisite: BIOS 211, PEPR 181.

PEPR 382 Measurement and Evaluation in Health Education 2 hrs.
Designed to develop entry-level evaluation competencies in health education majors and minors. Emphasis is focused on identifying evaluation formats, strategies, and models; developing instruments; collecting data; and interpreting results. Prerequisites: PEPR 312, PEPR 331.

PEPR 390 Physiology of Motor Activity 2 hrs. Fall, Winter
The effects on systems of the body under stress of motor activity—cardiopulmonary function, metabolism, neuromuscular system. Practical application of principles to strenuous physical exercise. Prerequisite: BIOS 240.

PEPR 392 Measurement and Evaluation in Physical Education 2 hrs. Fall, Winter
Covers evaluation techniques in terms of understanding, interpretation, and application with emphasis on administration, selection and use of tests, interpretation of results through statistical procedures, analysis of tests available in the field and techniques for developing knowledge and skills tests.

PEPR 399 Recreation Practicum 3 hrs. Fall, Winter, Spring
The practical field experiences in recreation. Enrollment by permission of instructor and acceptance of practicum proposal. Prerequisite: PEPR 372.

PEPR 400 Field Experience/Internship in HPER 1–8 hrs. Fall, Winter, Spring, Summer
This course will provide in-depth field experience or internships for undergraduate majors or minors in recreation, health, coaching, exercise science, or exceptional child. Students will be assigned to classes or positions according to their selected area of emphasis. Enrollment by permission of curriculum advisors for major or minor. Prerequisite varies with area of emphasis and requires departmental approval.

PEPR 410 Intern Teaching Seminar in HPER 1 or 2 hrs.
Through course activities and assignments, students develop professional skills which facilitate positive induction into the field of education. All assignments correspond with practical experiences which occur concurrently during PEPR 475. Prerequisites: Students must attain a GPA of 2.5 in physical, health and professional education courses as well as overall. All course work necessary for completion of student's major and minor curricula must be done prior to the semester during which the student applies for internship.

PEPR 412 Teaching Skills and Strategies 2 hrs. Fall, Winter
Designed to provide information and experiences that enable students to design and implement effective health education strategies in a school setting. Prerequisite: PEPR 312.

PEPR 416 Topics in Recreation 2 hrs.
The purpose of this course is to pick one or two topics or issues each time it is offered for in-depth investigation and study. The course will provide students with a background in current issues and current developments in the field of recreation. Prerequisite: PEPR 330.

PEPR 420 Developmental Programs for Children with Disabilities 3 hrs. Winter
Students will study sensory regulatory disorders and development programs of leaders in the field and the adaptation of these theories to practical situations in a laboratory setting. Various methods of working with children with disabilities will be discussed and practiced, and programs will be established and tested. Prerequisite: BIOS 211.

PEPR 430 Community Health II 3 hrs.
This course deals with the analysis of principles of program planning in public health education. Topics include: needs assessment, community analysis and organization, program selection, program coordination, and program evaluation. This course meets the baccalaureate-level writing requirement. Prerequisite: PEPR 330.

PEPR 431 Community Health Methods and Strategies 2 hrs.
Designed to prepare students with skills necessary to implement health education (CHE) programs within the context of community health settings. Emphasis will be placed on CHE methods and strategies such as educational presentations, material development, mass media, group process, and coalition building. Prerequisite: PEPR 31.

PEPR 444 Administration and Development of Instructional Systems in Physical Education 2 hrs. Fall, Winter
This course is designed to provide information and experience which will enable the learner to develop the skills necessary to plan and construct a comprehensive physical education curriculum based on a developmental model. Prerequisites for majors: 100 series, PEPR 295, 345, 390. Prerequisite for non-majors should enroll in ED 370 or ED 302 during the same semester. Separate sections for PYE and PEX.

PEPR 445 Teaching Skills and Strategies 2 hrs. Fall, Winter
This course is designed to provide information and experiences which will enable the student to implement effective physical education curricula based on a developmental model. Prerequisite: PEPR 444. Separate sections for PYE and PEX.

PEPR 450 Cultural Bases of Physical Education 2 hrs. Fall, Winter
The application of history, principles, sociology and philosophy of HPER to the current movements and trends in the profession. Prerequisites: PEPR 150, PEPR 170. 20 credit hours completed in HPER emphasis area.

PEPR 469 Business Procedures 2 hrs.
The purpose of this course is to provide students with an introduction to the scope, characteristics, management techniques, and business operations involved in the field of sport management. Prerequisite: Completion of 20 hours in major.

PEPR 472 Recreation for the Aging 2 hrs. Fall
An overview of aging especially as it relates to leisure pursuits and organized recreation. Includes observation, participation and leadership in senior centers, social activities, programs for retirees, nursing homes, senior citizens housing units and clubs. Suggested Prerequisite: SOC 352.

PEPR 475 Intern Teaching in HPER 5 or 10 hrs.
This course represents the final experience of the student's curriculum during which an application of all knowledge and skills acquired is facilitated. Through the experiences provided in this course, students develop the skills and knowledge necessary for certification as a health or physical education teacher in the state of Michigan.

PEPR 476 Advanced Organization and Administration of Recreation 2 hrs.
The purpose of this course is to provide students with advanced skills required in the administration of modern recreation and leisure service agencies. This course will allow students not only to gain knowledge of advanced administration skills, but to apply them in practical situations. This course will also present a final overview for recreation students and will cover in-depth issues such as ethics, communications, time management, legal issues, and professional development. Prerequisite: 376.

PEPR 480 Basic Electrocardiography 1 hr.
The purpose of this course is to examine the anatomy, physiology and electrophysiology of the heart; identify and describe a normal EKG; identify and describe abnormal EKG's; identify arrhythmias and abnormalities of the heart from an EKG; become familiar with commonly used cardiac medications; observe a maximal graded exercise test. Prerequisite: PEPR 390.

PEPR 488 Research/Evaluation in Recreation 2 hrs.
An introduction to the methodology and scientific student of the phenomena of leisure and recreation. The course includes basic research and evaluation design, research and evaluation report writing, the analysis of current recreation and leisure research, and the use of computers in recreation research and evaluation.

PEPR 490 Adult Fitness and Exercise Prescription 2 hrs. Winter
The initiation, formulation, administration, and supervision of adult fitness programs will be discussed. Topics include exercise protocol, assessment tools, exercise prescription, client identification, etc.

PEPR 497 Professional Development in Recreation 3 hrs.
The course is designed to present to the undergraduate student a final overview of the field of recreation. It is also designed to prepare him/her for employment and will cover topics including professional associations, current issues, ethics, jobs searching and job skills. Prerequisite: PEPR 376 and concurrent enrollment with PEPR 476.

PEPR 499 Recreation Internship 6 hrs.
The recreation internship is structured to bring academic course work to life, provide valuable work experience, and professional contacts. This will help ensure a successful professional career. The recreation major must commit to a 15 week full time experience with an agency/organization in recreation or leisure service delivery or an appropriately related field.

Professional Courses Open To Upperclass and Graduate Students (PEGR).
Note: The following courses are open to undergraduate students when marked in the Schedule of Classes as “Undergraduate Students Only.”
Children education children. majors or minors who have had 312 or 412. Prerequisite: 510 or equivalent.

Coaching subjects in this curriculum. Prerequisite: PEPR

PEGR 500 Studies in Health, Physical Education and Recreation
1–2 hrs.

In-depth study of selected topics in HPER. Format can include clinics, workshops, seminars, travel and/or mini-courses; and provide opportunity to acquire skills and teaching techniques. State, national, and international authorities or consultants may be involved. Topics include: Lifetime Sports, Outdoor Education, Physical Education, Stress Management, Physical Fitness, Business Procedures, Nutrition.

PEGR 510 Modern Health for Teachers and Health Professionals
3 hrs.

This course is designed for teachers and health professionals who have need of current knowledge in health science. The course surveys topics such as mental health, nutrition, substance abuse, physical fitness, chronic diseases, and stress management. Consideration is given to psychological, sociological and cultural factors that influence health improvement. Attention is given to special factors of health and illness of children and adolescents. This course is not open to health education majors and minors who have had PEPR 100, 220, 221.

PEGR 512 Principles, Practices, and Methods in Health Education
3 hrs.

This course surveys the history, philosophy, and methods of health education. The philosophical basis and practices of health education are discussed in terms of needs and capabilities of people and factors that influence their development. Emphasis is placed upon the promotion of health and prevention of disease, disability, and premature death. Curriculum development and teaching methods focus on content and strategies considered most effective in teaching disease prevention and health promotion. The course is not open to health education majors or minors who have had 312 or 412. Prerequisite: 510 or equivalent.

PEGR 514 Methods and Materials in Health Education
2 hrs.

Lectures and demonstrations with emphasis on the effective health supervision of school children; the principles and practices of health teaching in the various grades; and the interrelation of this teaching with that of other subjects in this curriculum. Prerequisite: PEPR 312, 412 or 512 or consent of department.

PEGR 516 Issues in Health Education
1–3 hrs.

The focus will be placed on current health issues. May be designed to deal with one issue or several.

PEGR 520 Physical Activities for Exceptional Children
3 hrs.

Physical and recreational activities and games used in corrective, adaptive and general physical education programs for special education children.

PEGR 521 Therapeutic Trends for Exceptional Children
3 hrs.

A study of past, present and future trends in habilitation and rehabilitation programs for handicapped people.

PEGR 530 Practicum in Teaching and Coaching
1–2 hrs.

Demonstrations, participation and evaluation on teaching and coaching fundamentals in selected sports. A graduate student may apply a maximum of four credits from 530 courses toward the Master's Degree Program.

Sports include: Archery, Badminton, Baseball, Basketball, Football, Golf, Field Hockey, Gymnastics, Ice Hockey, Judo, Karate, Soccer, Swimming, Track and Field, Volleyball, Wrestling, Yoga.

PEGR 535 Principles and Problems of Coaching
2 hrs.

Various dimensions and forces affecting coaching are identified and explored including educational implications of sport and coaching, characteristics of coaches and athletes, vital relationships, motivation, emotions, behavior, discipline, selecting and evaluating personnel, scientific principles and systems of training, the organization and planning of practices and total programs.

PEGR 540 Movement Education
2 hrs.

A concept in physical education which deals with the way children learn the basic principles of how their bodies move.

PEGR 560 Administration of Physical Education
2 hrs.

For administrative officers, as well as for teachers and directors of physical education. Includes a study of representative programs for physical education and discussion of standards for evaluating such programs.

PEGR 562 Administration of Athletics
2 hrs.

Discusses administrative procedures and problems concerned with athletic programs, including scheduling, facilities, personnel problems, school law and liability, eligibility, finance, safety, and the conduct of athletic events.

PEGR 580 Studies in Athletic Training
1–2 hrs. Fall (Undergrad Athlete Trainer), Winter (Graduate Non-Athlete Trainer)

Listed with various topics. A lecture/demonstration course concerned with the prevention, diagnosis, and treatment of sports type injuries. Prerequisites: BIOS 211, 240, PEPR 380.

PEGR 590 Exercise Physiology
2 hrs.

The mechanics of muscular contraction, nerve impulse conduction, oxygen exchange, and circulatory efficiency are discussed. Basic principles concerning the adaptation of the human body to stress in the form of strenuous physical exercise are applied to the training and conditioning of competitive athletics. Prerequisites: BIOS 211, 240. Open to graduate students only.

PEGR 591 Evaluation in Health, Physical Education, and Recreation
2 hrs.

Acquaints students with the theory, selection, construction, administration, interpretation of appropriate tests in the field. Class activity will include study and discussion of selected tests, application, scoring, interpretation, and construction of tests. Open to graduate students only.

PEGR 595 Analysis of Movement in Sport
2 hrs.

The study of movement of muscles and the application of kinesiology to physical activity. Prerequisite: BIOS 211. Open to graduate students only.

PEGR 596 Readings in Health, Physical Education and Recreation
1–2 hrs. All Semesters

Advanced students with good academic records may elect to pursue independently a program of readings in areas of special interest. Prerequisite: Approval of the Chairperson of the Department of Physical Education. Open to graduate students only.

General Physical Education

A maximum of eight (8) hours of general activity physical education may be applied toward electives for graduation credit. Classes meet two hours weekly for one semester of credit.

 Exceptions:
  101 Beginning Ballet
  102 Beginning Jazz Dance
  103 Beginning Modern
  104 Beginning Tap
  111 Beginning Ballet II
  112 Beginning Jazz Dance II
  114 Beginning Tap II
  181 Dance Improvisation

All courses are co-ed. Course descriptions may be obtained from the general physical education office.

• PEGN 100-level courses—are open to all students and emphasize the beginning skills in the activity given. The student with some experience in activities marked—"Beginners Only" should enroll in 200/300 level courses.

• PEGN 200-level courses—are open to all students who have completed a 100-level course in the activity or the equivalent. (** Prerequisite 249 or Red Cross Intermediate Card)

• PEGN 300-level courses—are open to all students desiring additional experience in an activity and who have completed the 200-level course or permission of instructor to enroll.

• PEGN 400—A varsity athlete may receive PEGN credit by enrollment and completion of these courses. (1 credit hour each.) Enrollment by permission of instructor.

General Physical Education (PEGN)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

PEGN 100 Adapted P.E. Med. Rec
1 hr.

PEGN *101 Archery
1 hr.

PEGN 102 Badminton
1 hr.

PEGN 103 Aerobic Exercise
1 hr.

Course consists of a broad spectrum of fitness exercises to music.

PEGN 104 Basketball
1 hr.

PEGN 105 Bowling
1 hr.

PEGN 106 Canoe Camping
1 hr.

The course combines the fundamentals of camping with canoeing. Culminates with a weekend camping trip by canoe.

PEGN 107 Canoeing
1 hr.

PEGN 108 Backpacking
1 hr.

PEGN 109 Cycling
1 hr.

PEGN 110 Cross Country Ski Camp
1 hr.

This course combines Cross Country skiing with outdoor living experiences.

PEGN *120 Fencing
1 hr.
PEGN 122 Golf I
1 hr.
PEGN 124 Gymnastics—Tumbling
1 hr.
PEGN 128 Jogging
1 hr.
PEGN 129 Ice Hockey
1 hr.
PEGN 130 Judo
1 hr.
PEGN 131 Beginning Karate
1 hr.
PEGN 132 Military Fitness
1 hr.
PEGN 135 Outdoor Challenge
1 hr.
This course, taught in cooperation with Pretty Lake Camp, teaches teamwork, trust of others, and responsibility through outdoor physical activities. Students work together to solve problems of survival in the outdoors.

PEGN 136 Physical Fitness
1 hr.
PEGN *137 Racketball
1 hr.
PEGN 138 Rock Climbing
1 hr.
This course, taught in cooperation with Pretty Lake Camp, gives the student fundamentals of rock climbing and includes a weekend trip to cap off the experience.

PEGN 139 Relaxation
1 hr.
PEGN 140 Riffery
1 hr.
PEGN *141 Sailing
1 hr.
PEGN *142 Skating—Ice
1 hr.
PEGN 143 Skiing—Cross Country
1 hr.
PEGN *144 Skiing—Alpine
1 hr.
PEGN 146 Soccer
1 hr.
PEGN 147 Softball
1 hr.
PEGN *149 Swimming—Unable to swim in deep water
1 hr.

PEGN 150 Advanced Beginning Swimming
1 hr.
Students will build on skills learned in beginning swimming and develop deep water skills in order to progress to intermediate swimming. American Red Cross Water Safety program progression and certification. Prerequisite: PEGN 149 or equal skills.

PEGN *160 Tennis I
1 hr.
PEGN 161 Track and Field
1 hr.
PEGN 163 Volleyball
1 hr.

PEGN 166 Weight Training
1 hr.
Course consists of individualized weight training programs.

PEGN 167 Winter Camping
1 hr.
Course includes winter survival as well as winter camping for the hardy outdoor person.

PEGN 170 Health and Wellness-Aerobics
2 hrs.
Students are provided information and experience allowing them to (1) acquire a knowledge base about human wellness from physical, mental, personal-social and spiritual perspectives, (2) develop physical fitness skills, and (3) develop a positive attitude toward wellness and physical activity which will facilitate a healthy lifestyle.

PEGN 171 Health and Wellness-Water Aerobics
2 hrs.
Students are provided information and experience allowing them to (1) acquire a knowledge base about human wellness from physical, mental, personal-social and spiritual perspectives, (2) develop physical fitness skills, and (3) develop a positive attitude toward wellness and physical activity which will facilitate a healthy lifestyle.

PEGN 172 Health and Wellness — Circuit Fitness
2 hrs.
Students are provided information and experience allowing them to (1) acquire a knowledge base about human wellness from physical, mental, personal-social and spiritual perspectives, (2) develop physical fitness skills, and (3) develop a positive attitude toward wellness and physical activity which will facilitate a healthy lifestyle.

PEGN 173 Health and Wellness — Jogging
2 hrs.
Students are provided information and experience allowing them to (1) acquire a knowledge base about human wellness from physical, mental, personal-social and spiritual perspectives, (2) develop physical fitness skills, and (3) develop a positive attitude toward wellness and physical activity which will facilitate a healthy lifestyle.

PEGN 174 Health and Wellness — Walking
2 hrs.
Students are provided information and experience allowing them to (1) acquire a knowledge base about human wellness from physical, mental, personal-social and spiritual perspectives, (2) develop physical fitness skills, and (3) develop a positive attitude toward wellness and physical activity which will facilitate a healthy lifestyle.

PEGN 175 Special Activities, e.g., Kayaking, Aquatic Fitness, Wall Climbing
1 hr.

PEGN 176 Health and Wellness - Racquet Sports
2 hrs.
Students are provided information and experience allowing them to (1) acquire a knowledge base about human wellness from physical, mental, psychosocial, and spiritual perspectives, (2) develop physical fitness skills, and (3) develop a positive attitude toward wellness and physical activity which will facilitate a healthy lifestyle.

PEGN 177 Health and Wellness-Climbing Techniques
2 hrs.
Students are provided information and experience allowing them to (1) acquire a knowledge base about human wellness from physical, mental, psychosocial, and spiritual perspectives, (2) develop physical fitness skills, and (3) develop a positive attitude toward wellness and physical activity which will facilitate a healthy lifestyle.

PEGN 178 Health and Wellness - Martial Arts
2 hrs.
Students are provided information and experience allowing them to (1) acquire a knowledge base about human wellness from physical, mental, psychosocial, and spiritual perspectives, (2) develop physical fitness skills, and (3) develop a positive attitude toward wellness and physical activity which will facilitate a healthy lifestyle.

PEGN 179 Health and Wellness Figure Skating
2 hrs.
Students are provided information and experiences which allow them to: (1) acquire knowledge about human wellness from physical, mental, personal-social and spiritual perspectives, (2) develop physical fitness skills, and (3) develop a positive attitude toward wellness and physical activity which facilitates a healthy lifestyle.

PEGN 180 Health and Wellness Beginning Swimming
2 hrs.
Students are provided information and experiences which allow them to: (1) acquire knowledge about human wellness from physical, mental, personal-social and spiritual perspectives, (2) develop physical fitness skills, and (3) develop a positive attitude toward wellness and physical activity which facilitates a healthy lifestyle.

PEGN 181 Health and Wellness Intermediate Swimming
2 hrs.
Students are provided information and experiences which allow them to: (1) acquire knowledge about human wellness from physical, mental, personal-social and spiritual perspectives, (2) develop physical fitness skills, and (3) develop a positive attitude toward wellness and physical activity which facilitates a healthy lifestyle.

PEGN 182 Health and Wellness Swim Conditioning
2 hrs.
Students are provided information and experiences which allow them to: (1) acquire knowledge about human wellness from physical, mental, personal-social and spiritual perspectives, (2) develop physical fitness skills, and (3) develop a positive attitude toward wellness and physical activity which facilitates a healthy lifestyle.

PEGN 200 Physical Education Learning Lab Activities
1 hr.
Guided individual instruction in a variety of physical education activities. Resources such as films, books and workshops are available to aid the student to learn in a manner and rate suitable to the individual skill and knowledge. Competency testing will be used to determine achievement and place individuals at beginning, intermediate or advanced levels. Course is repeatable for up to 8 hours credit (University limit) under 200 number, with different course titles. Prerequisite: GPA of 3.0 overall.

PEGN 204 Intermediate Basketball
1 hr.
PEGN 205 Bowling—Intermediate
1 hr.
PEGN 208 Intermediate Backpacking
1 hr.
PEGN 220 Fencing—Intermediate
1 hr.
PEGN 222 Golf II
1 hr.
PEGN 229 Ice Hockey—Intermediate
1 hr.
PEGN 236 Intermediate Physical Fitness
1 hr.
This course is for the student desiring a higher level of fitness, training for marathons, triathlons, and/or weight competition.
PEGN 237 Racketball—Intermediate  
1 hr.
PEGN 241 Sailing—Intermediate  
1 hr.
PEGN 242 Skating—Ice-Figure  
1 hr.
PEGN 244 Intermediate Alpine Skiing  
1 hr.
PEGN 246 Intermediate Soccer  
1 hr.
PEGN 249 Swimming—Intermediate  
1 hr.
PEGN 242 Skating—Ice-Figure  
1 hr.
PEGN 246 Intermediate Soccer  
1 hr.
PEGN 249 Swimming—Intermediate  
1 hr.
PEGN 250 Swimmer  
1 hr.
PEGN 251 Advanced Swimming and Emergency Water Safety  
1 hr.
PEGN 252 Swim Conditioning  
1 hr.
PEGN 252 Swim Conditioning  
1 hr.
PEGN 253 Volleyball Intermediate  
1 hr.
PEGN 260 Tennis II  
1 hr.
PEGN 263 Volleyball Intermediate  
1 hr.
PEGN 269 Lifeguard Training  
2 hrs.
To provide the necessary minimum skills training for a person to serve as a non-surf lifeguard. Prerequisite: PEGN 250 or equal skills.
PEGN 349 Lifeguard Training  
2 hrs.
American Red Cross revised course (1992) will prepare the student already certified as a lifeguard to instruct Basic Water Safety, Emergency Water Safety and Lifeguard Training. Prerequisite: PEGN 349.
PEGN 360 Tennis—Intermediate  
1 hr.
VARSITY ATHLETICS
PEGN 400 Baseball  
1 hr.
PEGN 401 Basketball  
1 hr.
PEGN 403 Cross Country  
1 hr.
PEGN 405 Football  
1 hr.
PEGN 407 Gymnastics  
1 hr.
PEGN 408 Ice Hockey  
1 hr.
PEGN 409 Soccer  
1 hr.
PEGN 410 Softball  
1 hr.
PEGN 413 Tennis  
1 hr.
PEGN 414 Track/Field  
1 hr.
PEGN 415 Volleyball  
1 hr.
PEGN 416 Swimming—Intermediate  
1 hr.
PEGN 417 Soccer—Intermediate  
1 hr.
PEGN 418 Track/Field—Intermediate  
1 hr.
PEGN 419 Swimming—Intermediate  
1 hr.
PEGN 420 Softball—Intermediate  
1 hr.
Intern Teaching
Students complete two semesters of internship teaching, one in General Education and one in Special Education. Intern Teaching placement is only made within prescribed areas in Southwest Michigan. Intern Teaching placement in or near home school districts should not be anticipated or expected.

Special Education Curriculum
Bachelor of Science Degree State
Elementary Provisional Certificate

Baccalaureate Writing Requirement
Students who have chosen the Special Education Curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing ED 395 School and Society.

Endorsement — Elementary Emotionally Impaired
For the preparation of teachers of elementary level students with Emotional Impairment.
Minimum Hours Required for this Curriculum 130 hrs.
Course Requirements
A minimum grade of “C” must be earned in all courses listed as part of the Endorsement in Elementary Emotionally Impaired. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements:

General Education Requirement 37 hrs.
An additional three hours in General Education courses from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies are required for Michigan Certification (See “Degree Requirements” under Degree and Curriculum listed earlier in this catalog).

Curriculum Requirements
ART 150 / 200 Art Education Workshop 3
COM 170 Interpersonal Communication I
OR
COM 104 Public Speaking 3
ED 250 Human Development 3
ED 312 Foundations of Reading Instruction 3
ED 351 Reading and Related Communication Skills for Early Childhood 3
ED 396 School and Society 3
ED 410 Seminar in Education 2
ED 471 Intern Teaching: Elementary 10
ENGL 282 Children’s Literature 4*
MATH 150 Number Concepts for Elementary/Middle School Teachers 4
MUS 141 Music in Special Education 3
MUS 140 Music for the Classroom Teacher 3
PEPR 340 Physical Education for the Elementary Classroom Teacher 2
PSY 100 General Psychology 3*

Academic Minor — 20–24 hrs.
To be selected from the following minors approved for Elementary Education certification: Art, Creative Arts, English, Group Social Science, Language, Science and Mathematics Teaching Minor, Special Physical Education.

Courses in Emotionally Impaired Major — Elementary
NOTE: Students entering the curriculum must have met an experience requirement with a person(s) with disabilities of at least thirty clock hours duration. Students must contact the department to secure the appropriate forms for documenting this experience or to secure assistance in meeting this requirement.
NOTE: Students must see a department advisor regarding the sequence in which the courses must be completed.

SPED 474 Intern Teaching in Special Education: Elementary Level EI Students 10
SPED 504 Teaching Practicum in Special Education: Elementary 1
SPED 530 Introduction to Special Education 3
SPED 531 Classroom Practicum in Special Education 1
SPED 533 Assessment and Prescription in Special Education 3
SPED 534 Curriculum and Instruction in Special Education: Elementary 3
SPED 537 Technology in Special Education 3
SPED 538 Introduction to Classroom Management 3
SPED 539 Curriculum and Instruction: Communication in Special Education 3
SPED 570 Introduction to Emotional Impairment 3
SPED 571 Program Practicum in Special Education: EI 1
SPED 575 Education of Learners with Emotional Impairments 3
SPPA 200 Introduction to Communication Disorders 3*
Electives to reach 130 hour total
The student must satisfy the requirements for the B.S. or B.A. degree and successfully pass the state competency examination.

Endorsement — Elementary Mentally Impaired
For the preparation of teachers of elementary level students with Mental Impairment.
Minimum Hours Required for this Curriculum 130 hrs.
Course Requirements
A minimum grade of “C” must be earned in all courses listed as part of the Endorsement in Elementary Mentally Impaired. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements:

General Education Requirement 37 hrs.
An additional three hours in General Education courses from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies are required for Michigan Certification (See “Degree Requirements” under Degree and Curriculum listed earlier in this catalog).

Curriculum Requirements
ART 150 / 200 Art Education Workshop 3
COM 170 Interpersonal Communication I
OR
COM 104 Public Speaking 3
ED 250 Human Development 3
ED 312 Foundations of Reading Instruction 3
ED 351 Reading and Related Communication Skills for Early Childhood 3
ED 396 School and Society 3
ED 410 Seminar in Education 2
ED 471 Intern Teaching: Elementary Level MI Students 10
ENGL 282 Children’s Literature 4*
MATH 150 Number Concepts for Elementary/Middle School Teachers 4
MUS 141 Music in Special Education 3
MUS 140 Music for the Classroom Teacher 3
PEPR 340 Physical Education for the Elementary Classroom Teacher 2
PSY 100 General Psychology 3*

Academic Minor — 20–24 hrs.
To be selected from the following minors approved for Elementary Education certification: Art, Creative Arts, English, Group Social Science, Language, Science and Mathematics Teaching Minor, Special Physical Education.

Courses in Mentally Impaired Major — Elementary
NOTE: Students entering the curriculum must have met an experience requirement with a person(s) with disabilities of at least thirty clock hours duration. Students must contact the department to secure the appropriate forms for documenting this experience or to secure assistance in meeting this requirement.
NOTE: Students must see a department advisor regarding the sequence in which the courses must be completed.

SPED 474 Intern Teaching in Special Education: Elementary Level MI Students 10
SPED 504 Teaching Practicum in Special Education: Elementary 1
SPED 530 Introduction to Special Education 3
SPED 531 Classroom Practicum in Special Education 1
SPED 533 Assessment and Prescription in Special Education 3
SPED 534 Curriculum and Instruction in Special Education: Elementary 3
SPED 537 Technology in Special Education 3
SPED 538 Introduction to Classroom Management 3
SPED 539 Curriculum and Instruction: Communication in Special Education 3
SPED 570 Introduction to Emotional Impairment 3
SPED 571 Program Practicum in Special Education: MI 1
SPED 575 Education of Learners with Emotional Impairments 3
SPPA 200 Introduction to Communication Disorders 3*
Electives to reach 130 hour total
The student must satisfy the requirements for the B.S. or B.A. degree and successfully pass the state competency examination.

Endorsement — Elementary Visually Impaired
For the preparation of teachers of elementary level students with Visual Impairment.
Minimum Hours Required for this Curriculum 130 hrs.
Course Requirements
A minimum grade of “C” must be earned in all courses listed as part of the Endorsement in Elementary Visually Impaired. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements:

General Education Requirement 37 hrs.
An additional three hours in General Education courses from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies are required for Michigan Certification (See “Degree Requirements” under Degree and Curriculum listed earlier in this catalog).

Curriculum Requirements
ART 150 / 200 Art Education Workshop 3
COM 170 Interpersonal Communication I
OR
COM 104 Public Speaking 3
ED 250 Human Development 3
ED 312 Foundations of Reading Instruction 3
ED 351 Reading and Related Communication Skills for Early Childhood 3
ED 396 School and Society 3
ED 410 Seminar in Education 2
ED 471 Intern Teaching: Elementary Level VI Students 10
ENGL 282 Children’s Literature 4*
MATH 150 Number Concepts for Elementary/Middle School Teachers 4
MUS 141 Music in Special Education 3
MUS 140 Music for the Classroom Teacher 3
PEPR 340 Physical Education for the Elementary Classroom Teacher 2
PSY 100 General Psychology 3*

Academic Minor — 20–24 hrs.
To be selected from the following minors approved for Elementary Education certification: Art, Creative Arts, English, Group Social Science, Language, Science and Mathematics Teaching Minor, Special Physical Education.

Courses in Visually Impaired Major — Elementary
NOTE: Students entering the curriculum must have met an experience requirement with a person(s) with disabilities of at least thirty clock hours duration. Students must contact the department to secure the appropriate forms for documenting this experience or to secure assistance in meeting this requirement.
NOTE: Students must see a department advisor regarding the sequence in which the courses must be completed.

SPED 474 Intern Teaching in Special Education: Elementary Level VI Students 10
SPED 504 Teaching Practicum in Special Education: Elementary 1
SPED 530 Introduction to Special Education 3
SPED 531 Classroom Practicum in Special Education 1
SPED 533 Assessment and Prescription in Special Education 3
SPED 534 Curriculum and Instruction in Special Education: Elementary 3
SPED 537 Technology in Special Education 3
SPED 538 Introduction to Classroom Management 3
SPED 539 Curriculum and Instruction: Communication in Special Education 3
SPED 570 Introduction to Emotional Impairment 3
SPED 571 Program Practicum in Special Education: VI 1
SPED 575 Education of Learners with Emotional Impairments 3
SPPA 200 Introduction to Communication Disorders 3*
Electives to reach 130 hour total
The student must satisfy the requirements for the B.S. or B.A. degree and successfully pass the state competency examination.
Tobe selected from the following minors:

**Academic Minor 20-24 hrs.**
Social Science, Language, Science and SPED

Forms for documenting this experience or to approved for Elementary Education advisor regarding the sequence in which the certification: Art, Creative Arts, English, Group

Electives to reach 130 hour total
The student must satisfy the requirements for the B.S. or B.A. degree and successfully pass the state competency examination.

**Endorsement — Secondary Emotionally Impaired**

For the preparation of teachers of secondary level students with Emotional Impairment

 Minimum Hours Required for this Curriculum .......................... 130 hrs.

**Course Requirements**
A minimum grade of “C” must be earned in all courses listed as part of the Endorsement in Secondary Emotionally Impaired. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements.

**General Education Requirement ... 37 hrs.**
An additional three hours in General Education courses from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies are required for Michigan Certification (See “Degree Requirements” under Degree and Curricula listed earlier in this catalog).

**Electives to reach 130 hour total**
The student must satisfy the requirements for the B.S. or B.A. degree and successfully pass the state competency examination.

**Endorsement — Secondary Mentally Impaired**

For the preparation of teachers of secondary level students with Mental Impairment

 Minimum Hours Required for this Curriculum .......................... 130 hrs.

**Course Requirements**
A minimum grade of “C” must be earned in all courses listed as part of the Endorsement in Secondary Mentally Impaired. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements:

**General Education Requirement ... 37 hrs.**
An additional three hours in General Education courses from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies are required for Michigan Certification (See “Degree Requirements” under Degree and Curricula listed earlier in this catalog).

**Courses in Visually Impaired Major — Elementary**
NOTE: Students entering the curriculum must have met the experience requirement with a person(s) with disabilities of at least thirty clock hours duration. Students must contact the department to secure the appropriate forms for documenting this experience or to secure assistance in meeting this requirement.

NOTE: Students must see a department advisor regarding the sequence in which the courses must be completed.

**Course Requirements**
A minimum grade of “C” must be earned in all courses listed as part of the Endorsement in Secondary Visually Impaired. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements:

**General Education Requirement ... 37 hrs.**
An additional three hours in General Education courses from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies are required for Michigan Certification (See “Degree Requirements” under Degree and Curricula listed earlier in this catalog).

**Courses in Emotionally Impaired Major — Secondary**
NOTE: Students entering the curriculum must have met an experience requirement with a person(s) with disabilities of at least thirty clock hours duration. Students must contact the department to secure the appropriate forms for documenting this experience or to secure assistance in meeting this requirement.

NOTE: Students must see a department advisor regarding the sequence in which the courses must be completed.
**Curriculum Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ART 150</td>
<td>200 Art Education Workshop</td>
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<td>COM 170</td>
<td>Interpersonal Communication I</td>
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<td>Middle and Upper Grades</td>
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<td>ED 396</td>
<td>School and Society</td>
<td>3</td>
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<tr>
<td>ED 410</td>
<td>Seminar in Education</td>
<td>2</td>
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<tr>
<td>ED 472</td>
<td>Intern Teaching: Upper</td>
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<td>ENGL 282</td>
<td>Children's Literature</td>
<td>4*</td>
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<td>MATH 150</td>
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<td>MUS 140</td>
<td>Music for the Classroom</td>
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<td>PEPR 340</td>
<td>Practicum for the Elementary Classroom Teacher</td>
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<td>General Psychology</td>
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<td>Academic Minor</td>
<td>20-24 hrs.</td>
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<td>Secondary</td>
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<td>NOTE: Students entering the curriculum must have an experience requirement with a person(s) with disabilities of at least thirty clock hours duration. Students must contact the department to secure the appropriate forms for documenting this experience or to secure assistance in meeting this requirement.</td>
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<td></td>
<td>Students must see a department advisor regarding the sequence in which the courses must be completed.</td>
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<td>Notes on the sequence, forms for documenting this experience or to secure assistance in meeting this requirement will be available from the department. Not acceptable for Special Education majors.</td>
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</table>

**Endorsement — Secondary Visually Impaired**

For the preparation of teachers of secondary level students with Visual Impairment, students must satisfy the requirements for the B.S. or B.A. degree and successfully pass the state competency examination.

**Course Requirements**

A minimum grade of "C" must be earned in all courses listed as part of the Endorsement in Secondary Visually Impaired. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements:

**General Education Requirement**

An additional three hours in General Education courses from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies are required for Michigan Certification (See "Degree Requirements" under Degree and Curriculum listed earlier in this catalog).

**SPPA Electives to reach 130 hour total**

The student must satisfy the requirements for the B.S. or B.A. degree and successfully pass the state competency examination.

**Special Education Courses (SPED)**

**SPED 474 Intern Teaching in Special Education**

10 hrs.

This final field experience is open only to special education undergraduate students who have completed all of their Special Education professional sequence requirements. It will consist of full-time intern teaching in an appropriate educational setting serving students with disabilities. Students will participate in all phases of the school program to which they are assigned. All courses except ED 410 and ED 471 or ED 472 must be completed prior to Intern Teaching in Special Education. Prerequisites: Completion of all professional education requirements. Consent of department.

**SPED 500 Topical Issues in Educating Learners with Disabilities**

1-4 hrs.

This course provides a survey or in-depth coverage of current issues directly related to the education of learners with disabilities. The course may be repeated for credit. Prerequisite: Consent of department.

**SPED 504 Teaching Practicum in Special Education: Elementary**

1 hr.

This course provides the student with a structured assignment working with an elementary-level learner who is at-risk or has a disability. It is intended to enable the student to demonstrate skills in assessment and prescription and in the implementation and evaluation of a tutorial plan of instruction for a specific learner in a mainstreamed or self-contained setting. Graded on a credit/no credit basis. Prerequisite: Consent of department and concurrent enrollment in SPED 534.

**SPED 506 Teaching Practicum in Special Education: Secondary**

1 hr.

This course provides the student with a structured assignment working with a secondary-level learner who is at-risk or has a disability. It is intended to enable the student to demonstrate skills in assessment and prescription and in the implementation and evaluation of a curriculum requirement for a specific learner in an appropriate educational setting. Graded on a credit/no credit basis. Prerequisite: Consent of department and concurrent enrollment in SPED 536.

**SPED 512 In-Service Professional Development**

1-4 hrs.

This course is designed for teachers, counselors, psychologists, social workers and others interested in studying selected aspects of special education at appropriate locations, such as state hospitals and special schools. A variety of instructional experiences are provided, including conferences. Credit not applicable toward a graduate degree in Special Education.

**SPED 527 Learners with Disabilities in General Education and Middle School Programs**

3 hrs.

This course is designed for prospective and practicing elementary and middle school teachers. Emphasis is placed on meeting the needs of learners with disabilities in elementary and middle school programs. Required adaptations and accommodations, and available services and resources for these learners are stressed. Prerequisites: Consent of department. Not acceptable for Special Education majors.
SPED 529 Learners with Disabilities in General Education and Secondary Programs 3 hrs.
This course is designed for prospective and practicing middle school and secondary teachers. Emphasis is placed on meeting the needs of learners with disabilities in middle school and secondary programs. Required adaptations and modifications, and available resources and services for these learners are stressed. Prerequisites: Consent of department. Not acceptable for Special Education majors.

SPED 530 Introduction to Special Education 3 hrs.
This course introduces students to the characteristics and needs of learners with sensory, physical, mental, emotional, and learning disabilities. Students develop an understanding of the psychological, sociological, philosophical, legal, and educational aspects of each type of disability. Prerequisite: Consent of department.

SPED 531 Classroom Practicum in Special Education 1 hr.
This course provides students with an opportunity to work in an elementary, middle school, or secondary classroom with learners who have disabilities. It is intended to provide students with and awareness of the nature and needs of these pupils and the role of the teacher in working with such learners. Graded on a credit/no credit basis. Prerequisite: Consent of department and concurrent enrollment in SPED 530.

SPED 533 Assessment and Prescription in Special Education 3 hrs.
The major focus of this course is understanding the Clinical Teaching Model. Emphasis is placed on the relevance of assessment and prescription to the teaching of learners with disabilities. Prerequisite: Consent of department and concurrent enrollment in SPED 504/533 or SPED 506/536.

SPED 534 Curriculum and Instruction in Special Education: Elementary 3 hrs.
This course focuses on application of the Clinical Teaching Model to the education of elementary age/adolescent learners with mild and moderate disabilities. Emphasis is placed on implementation and evaluation activities. Additional topics include: service delivery systems, roles of teachers and ancillary personnel, legal requirements, and major issues confronting the field of elementary special education. Prerequisite: Consent of department and concurrent enrollment in SPED 504 and SPED 533.

SPED 536 Curriculum and Instruction in Special Education: Secondary 3 hrs.
This course focuses on application of the Clinical Teaching Model to the education of preadolescent, adolescent, and your adults with mild and moderate disabilities. Topics include understanding the needs of learners with disabilities: education, curricular, and instructional interventions; and transition programming. Prerequisite: Consent of department and concurrent enrollment in SPED 506 and SPED 533.

SPED 537 Technology in Special Education 3 hrs.
This course is designed to provide specific information, exposure, and experience related to a variety of ways that current and emerging technologies may be used to improve the education and lives of learners with disabilities. Prerequisite: Consent of department.

SPED 538 Introduction to Classroom Management 3 hrs.
This course deals with methods of managing classroom behavior and dealing with specific behavior problems. Classroom management strategies will be discussed and related to the establishment of a positive classroom climate. Diagnostic and prescriptive techniques will be applied to problems of aggression, conduct withdrawal, hyperactivity, distractibility, and impulsivity. Prerequisite: Consent of department.

SPED 539 Consultation and Communication in Special Education 3 hrs.
This course will provide an introduction to consultation and communication skills needed by special educators as they work with other professionals and parents. Prerequisite: Consent of department.

SPED 540 Introduction to Mental Retardation 3 hrs.
This course provides an introduction to the field of mental retardation. Historical perspectives, definitions, service delivery systems, evaluation procedures, and major issues are examined. Prerequisite: Consent of department and concurrent enrollment in SPED 545.

SPED 541 Program Practicum in Special Education: MR 1 hr.
This course provides the student with guided observations of school and community agencies serving individuals with mental retardation. It provides an awareness of a continuum of special education placements and the role of non-school agencies serving persons with mental retardation and their families. Graded on a credit/no credit basis. Prerequisite: Consent of department and concurrent enrollment in SPED 540.

SPED 542 Introduction to Severe Impairments 3 hrs.
This course provides basic knowledge about individuals with severe mental, physical, emotional, and/or sensory disabilities. Biomedical, legal, sociological, and educational perspectives are examined. Special emphasis is placed on organization and management of educational programs, as well as assessment and instruction of pupils. Prerequisite: Consent of department.

SPED 544 Educating Individuals with Severe Impairments 3 hrs.
This course develops specific skills in the assessment, prescription, implementation, and evaluation of educational programs for persons with severe impairments. Course content focuses on the areas of mobility, communication, sensorimotor development, self-help skills, cognition, and adaptive behavior. Prerequisite: Consent of department.

SPED 545 Education of Learners with Moderate and Severe Retardation 3 hrs.
This course focuses on understanding the ways in which teachers organize curriculum and implement assessment and instruction to ensure maximum learning for students with moderate and severe mental retardation. Prerequisite: Consent of department and concurrent enrollment in SPED 540.

SPED 546 Embedded Students 3 hrs.
This course focuses on understanding the ways in which teachers organize curriculum and implement assessment and instruction to ensure maximum learning for students with moderate and severe mental retardation. Prerequisite: Consent of department and concurrent enrollment in SPED 540.

SPED 554 Reading in Special Education 1–4 hrs.
This course is designed for students interested in independent study. Topics chosen must be approved by the instructor and the department chairperson. May be repeated for credit. Prerequisite: Consent of department.

SPED 570 Reading in Special Education 1–4 hrs.
This course is designed for students interested in independent study. Topics chosen must be approved by the instructor and the department chairperson. May be repeated for credit. Prerequisite: Consent of department.

SPED 572 Reading in Special Education 1–4 hrs.
This course is designed for students interested in independent study. Topics chosen must be approved by the instructor and the department chairperson. May be repeated for credit. Prerequisite: Consent of department.

SPED 575 Education of Learners with Emotional Impairments 3 hrs.
This course focuses on the ways in which teachers organize curriculum and implement assessment and instruction to ensure maximum learning for students with emotional impairments. Prerequisite: Consent of department and concurrent enrollment in SPED 570.

SPED 580 Introduction to Learning Disabilities 3 hrs.
This course provides an introduction to the field of learning disabilities. Historical perspectives, definitions, service delivery systems, evaluation procedures, and major issues are examined. Prerequisite: Consent of department.

SPED 585 Advanced Theory and Practice in Learning Disabilities 3 hrs.
This course examines several theoretical perspectives which attempt to explain why students with learning disabilities fail to learn. Within each perspective, the application of selected theories to the Clinical Teaching Model is addressed. Emphasis is placed on the validity of interventions derived from each theory. Prerequisite: Consent of department.

SPED 589 Braille and Other Communication Methods 2 hrs.
This course provides students with a basic knowledge of the braille literary code—reading and writing, and an overview of other communication methods available to students with visual impairments. Prerequisite: Consent of department.

SPED 593 Methods and Techniques of Teaching Braille and Other Areas of Communication 3 hrs.
This course explores various methods and techniques of teaching essential communication skills—braille, typing, social communication, handwriting, abacus computation, the use of electronic devices and other media to students with visual impairments. Opportunity for supervised practical application of methods is afforded to the student. Prerequisite: Consent of department.

SPED 598 Readings in Special Education 1–4 hrs.
This course is designed for advanced students interested in independent study. Topics chosen must be approved by the instructor and the department chairperson. May be repeated for credit. Prerequisite: Consent of department.
The mission of the College of Engineering and Applied Sciences supports the three fundamental goals of the University mission of education, research, and service. The College recognizes that its primary clientele are the people and industries of the State of Michigan.

The education goals are to provide balanced undergraduate and graduate programs designed to prepare individuals for professional careers, and to inculcate in students the ability to continue to learn on their own. Each academic degree program is structured to achieve these goals and to encourage student growth through participation in a wide range of extracurricular opportunities.

The research goals are to generate knowledge and to develop new technologies. Applied research is emphasized and is structured to assist industry in design and development of products and processes. Basic research adds to the knowledge base of the technical community. Modern laboratories and research facilities enhance the undergraduate educational experience with opportunities for participation in research.

The service goals are to apply the extensive human and physical resources of the College to the needs of the community, state, and nation, and to assist in economic development. It also includes a commitment to serve the various professions represented by the disciplines of the College.

The College of Engineering and Applied Sciences offers undergraduate programs in several curricula and majors that prepare graduates for productive careers in a wide variety of fields. Students should refer to the programs listed throughout the College section of this Catalog for specific information relative to the academic program of interest.

The College also offers graduate programs leading to Master's degrees in Engineering Management, Operations Research, Computer Engineering, Electrical Engineering, Industrial Engineering, Manufacturing Science, Materials Science and Engineering, Mechanical Engineering, and Paper Science and Engineering, and Ph.D. degrees in Industrial Engineering and Mechanical Engineering. Students interested in a graduate program should see the WMU Graduate Catalog for more information.

Computer Aided Engineering Center
Sridhar Erra, Director

Serving both WMU faculty and students as well as regional business and industry is the Computer Aided Engineering Center. The Center employs state-of-the-art CAD/CAM (Computer Aided Design/Computer Aided Manufacturing) equipment that enhances technical educational programs and provides training for regional industrial personnel.

Academic Advising
Sandra F. Blanchard, Director

A central advising office is maintained for the convenience of College of Engineering and Applied Sciences students. Because prerequisites are strictly enforced and it is essential to follow the program plans that appear in the curricula descriptions, students must contact their academic advisor in the first semester of enrollment at Western Michigan University. Failure to meet with the advisor on a regular basis may result in difficulty receiving requested class schedules and/or delayed graduation.

Advisors are available to assist in program planning, to recommend electives appropriate to the student's educational objectives, to discuss employment opportunities, and to help with general academic problems. Transfer credit and all course substitutions must be approved by the advisor and approved by the appropriate department curriculum committee.

Prerequisites
Prerequisites are designed to both increase the probabilities of successful completion of the course and to insure the proper conduct of the course. Therefore, prerequisites will be strictly enforced in all departmental courses. Exceptions must be approved by the department no later than the end of the "add" period of the semester or session.

Credit Hour Definition for the College of Engineering and Applied Sciences
An undergraduate credit hour is a unit of academic measurement nominally equivalent to 3 hours of work per week on the part of the student. Thus, for a course in which 3 credits are earned, a student can expect to work 9 hours per week (4 credits, 12 hours per week, etc.) in various combinations of lecture hours (50 minutes), laboratory hours, and home study.

Standard of Academic Honesty
All courses offered by the College will be conducted in concert with the high standards of the University as stated in the Student Guide to Academic Honesty. Each student is expected to support these standards by neither giving nor accepting assistance on tests, and by submitting only his or her own work for credit. Violations of the standard of academic honesty will result in appropriate disciplinary action. Such disciplinary action may include a failing grade in the course, reassignment of work, dismissal from the curriculum, probation, or dismissal from the University.
Computer Use in College Programs

Most degree programs offered in the College of Engineering and Applied Sciences require extensive use of computers. This is particularly true in engineering and engineering related disciplines. Although Western Michigan University and the College provide adequate computer facilities for student use, many students find it advantageous to have their own computer (students are not required to purchase one). The University maintains special marketing arrangements with several major computer manufacturers and is therefore able to offer substantial discounts to students and faculty for the purchase of micro-computers and software. Interested students may obtain current information about the purchase of computing equipment from the College of Engineering and Applied Sciences Advising Office (Room 2038 Kohman Hall) or their academic advisor.

Professional and Honorary Societies

The College and each department have student branches of professional and honorary societies. The purpose is to provide opportunities for students to become more directly involved with specific activities in their areas of interest. Students interested in enhancing their understanding of a professional field in which they intend to work are encouraged to participate in one of these societies. Students may obtain further information by contacting their academic advisor or department chair.

Scholarships

Many scholarships are available to both freshmen and upperclass students in the College of Engineering and Applied Sciences. The majority of these scholarships available specifically for students in the College are administered by the individual departments of the College. A listing may be found in the "Financial Aid and Scholarships" section of this catalog.

Engineering Programs

Engineering Students

Three common characteristics are prevalent among students who are attracted to engineering. All show an interest in problem-solving—not only to know how, but why, something works. Second, engineering students possess a degree of technical aptitude—the ability to think in mathematical and scientific terms—which, third, is coupled with a strong interest in mathematics and the sciences.

A majority of engineering students are involved in one or more of the several professional organizations that have student chapters on campus. Such involvement enhances the "textbook learning" by providing students with opportunities to interact with other students having similar interests, to gain a closer look at the profession they have chosen to enter, and to plan and direct programs and projects.

Engineering Graduates

Undergraduate engineering programs offered by the College of Engineering and Applied Sciences prepare graduates for immediately productive careers and for continued professional practice in industry. A survey of graduates indicated WMU engineering alumni held positions of president, vice president, owner, plant manager, chief engineer, senior design engineer, sales manager, and lawyer.

Graduation Requirements

BACHELOR OF SCIENCE IN ENGINEERING

The baccalaureate programs in engineering are designed to be completed in four consecutive years. A student must meet all the requirements listed in any one of the catalogs in effect during the four year period immediately prior to the date of graduation.

Professional Registration

Graduates of engineering programs are encouraged to seek professional registration. Eligibility requirements in Michigan are established by the State Board of Professional Engineers. In general, only graduates of EAC/ABET accredited engineering programs are eligible to be licensed in Michigan. Students interested in professional registration should consult with their department advisor.

Admission to Engineering Programs

ADMISSION TO PRE-ENGINEERING

Admission

All students admitted to the University and planning to pursue one of the following curricula will be enrolled in the pre-engineering (PE) curriculum:

Aeronautical Engineering (AER)  
Computer Engineering (CPE)  
Construction Engineering Management (CEM)  
Electrical Engineering (EE)  
Industrial Engineering (IEN)  
Manufacturing Engineering (MFE)  
Materials Engineering (MME)  
Mechanical Engineering (ME)  
Paper Engineering (PAE)

University admission standards are used for enrollment in PE. Students admitted for PE should have appropriate academic preparation.

Academic Advising

All students enrolled in the PE curriculum will receive academic advising by the College of Engineering and Applied Sciences.

Enrollment Restrictions

Pre-engineering (PE) students will not be permitted to enroll in any course offered by the College of Engineering and Applied Sciences at the 300 level or above that is required in any Engineering curriculum.

PRE-ENGINEERING CURRICULUM REQUIREMENTS

Displayed below are the courses required in the pre-engineering curriculum for all students planning to pursue one of the engineering curricula listed above. See the respective department catalog entry for full degree requirements.

Common Core Courses Required For All Curricula

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 122, 123 and 272</td>
<td>12 cr. hr.</td>
</tr>
<tr>
<td>CHEM 101 or 102</td>
<td>4 cr. hr.</td>
</tr>
<tr>
<td>General Education AREA I, II, III, IV, OR V</td>
<td>6-8 cr. hr.</td>
</tr>
</tbody>
</table>

Additional Courses Required by Curriculum

Aeronautical Engineering: (AER) ECE 210, ECE 211, ECE 212, ME 240, ME 250, PHYS 205 and 206, PHYS 207 and 208, and PHYS 309 and PHYS 310. See the Department of Mechanical and Aeronautical Engineering for complete Aeronautical Engineering curriculum requirements.

Computer Engineering: CS 111, ECE 210, ECE 250, IME 102, PHYS 205 and PHYS 206, and PHYS 207 and PHYS 208. See the Department of Electrical and Computer Engineering for complete Computer Systems Engineering curriculum requirements.

Construction Engineering and Management: (CS 106, GEO 130, IME 102, IME 261, ME 322, ME 255, PHYS 205 and 206, PHYS 207 and 208. See the Department of Construction Engineering, Materials Engineering, and Industrial Design for complete Construction Engineering and Management curriculum requirements.

Electrical Engineering: ECE 306, ECE 210, IME 102, ME 256, PHYS 205 and PHYS 206, PHYS 207 and PHYS 208; and PHYS 309 and 310 or CHEM 120 or MATH 364. See the Department of Electrical and Computer Engineering for complete Electrical Engineering curriculum requirements.

Industrial Engineering: ECE 210, IME 102, ME 261, ME 253, and PHYS 205 and PHYS 206, PHYS 207 and PHYS 208. See the Department of Industrial and Manufacturing Engineering for complete Industrial Engineering curriculum requirements.

Manufacturing Engineering: CS 200, IME 102, MATH 374, MFE 120, PHYS 205 and PHYS 206, and PHYS 207 and PHYS 208. See the Department of Manufacturing Engineering for complete Manufacturing Engineering curriculum requirements.

Materials Engineering: CHEM 100, CS 306, ECE 210, IME 102, IME 261, ME 263, PHYS 205 and 206, PHYS 207 and 208. See the Department of Construction Engineering, Materials Engineering, and Industrial Design for complete Materials Engineering curriculum requirements.

Mechanical Engineering: CS 106, IME 102, ECE 210, ME 232, ME 256, PHYS 205 and PHYS 206, PHYS 207 and PHYS 208, and PHYS 309 and PHYS 310 OR CHEM 120. See the Department of Mechanical and Aeronautical Engineering for complete Mechanical Engineering curriculum requirements.

Paper Engineering: CHEM 120, CS 106, IME 102, PAPR 261, PHYS 205, PHYS 207, and PAPR 204. See the Department of Paper and Printing Science and Engineering for complete Paper Engineering curriculum requirements.

ADMISSION TO AN ENGINEERING CURRICULUM

The student seeking a baccalaureate degree in Aeronautical (AER), Computer Engineering (CPE), Construction Engineering Management (CEM), Electrical Engineering (EE), Industrial Engineering (IEN), Materials Engineering (MME), Mechanical Engineering (ME), or Paper Engineering (PAE) may apply for formal admission to one of these engineering curricula after successfully completing the pre-engineering curriculum requirements. Only students who have demonstrated the potential for success will be admitted to an engineering curriculum.
1. All students seeking admission to a degree-granting engineering curriculum must submit an application following procedures established by the College of Engineering and Applied Sciences. Upper level transfer students may complete an application prior to their first semester of enrollment. The College of Engineering and Applied Sciences processes admission applications to engineering curricula and makes admission decisions to these programs.

2. Admission to an engineering curriculum is dependent on successful completion of all required courses or approved alternatives in the PE curriculum with no grade less than "C". Only students in good academic standing as defined by the University are eligible for consideration for admission to an engineering curriculum.

3. Students in an engineering curriculum will be advised by a faculty advisor from that curricular area.

4. There are currently no established enrollment limits for admission to engineering curricula.

**Off Campus Degree Programs**

The College of Engineering and Applied Sciences offers complete undergraduate (described below) and graduate (described in the Graduate College bulletin) degree programs off campus.

**Industrial Management**

The Industrial Management degree program is offered to students who can attend classes only on a part-time basis. These programs are not available on the Kalamazoo campus. Additional information can be obtained by contacting the Director of Engineering and Technical Programs at the WMU Grand Rapids Regional Center, (616) 458-8274.

**Manufacturing Engineering**

The Manufacturing Engineering curriculum is offered only at the Higher Education Center, Muskegon Community College, Muskegon, Michigan. This program is not available on campus. Additional information can be obtained by contacting the Director of Engineering and Technical Programs at the WMU Grand Rapids Regional Center, (616) 777-0500, and by referring to the Department of Manufacturing Engineering section of this catalog.

**Industrial Management Bachelor of Science Degree**

This program provides off-campus students an opportunity to complete a four-year, engineering-related degree that meets ABET engineering-related program requirements. The program is designed to maximize transfer credit from community colleges and other four-year schools and to allow students to complete nearly all of the requirements entirely off campus. The program is intended to be attractive to non-traditional students who might otherwise find it difficult or impossible to complete a four-year degree.

**PROGRAM REQUIREMENTS**

The program will require 122 semester hours.

1. 15 semester hours of college-level mathematics through MATH 200 or equivalent including one course in statistics.

2. 3 laboratory science courses.

3. Satisfying University general education requirements including a minimum of 21 semester hours in communication, humanities, and social sciences.

4. 45 semester hours of technological courses including engineering-related sciences and engineering-related specialties. This requirement includes 6 semester hours of a capstone senior design course.

5. The balance of the program will be designed to achieve an integrated and well-rounded industrial management program that provides for the educational objectives of the University and the individual.

**TRANSFER STUDENTS**

Students transferring with an associate's degree from a community college will receive a minimum of 50 hours of transfer credit if the degree program contains:

1. 15 semester hours of applicable general education credits.

2. 12 semester hours of mathematics including applications of calculus.

3. 3 laboratory basic science courses.

4. Satisfaction of the University computer usage requirement.

Students who have taken engineering-related technological courses can receive up to 60 hours of transfer credit.

Recommended programs of study for students wishing to transfer into this program have been developed for local community colleges.

**TECHNOLOGICAL AND ENGINEERING RELATED COURSES**

The 45 hour requirement in this area can be satisfied through a combination of courses taken at WMU and other colleges as necessary. The courses can cover a wide range of topics and would likely vary from student to student. Sample WMU courses taken to satisfy this requirement would include:

**IME 305 Work Measurement** 3 hours

**IME 312 Quantitative Techniques** 3 hours

**IME 316 Report Preparation** 3 hours

**IME 320 Engineering Cost Analysis** 3 hours

**IME 322 Safety in Industry** 3 hours

**IME 326 Operations Planning and Control** 3 hours

**IME 328 Quality Assurance and Control** 3 hours

**IME 402 Supervision of Industrial Operations** 3 hours

**IME 403 Industrial Labor Relations** 3 hours

**IME 404 Plant Layout and Material Handling** 3 hours

**IME 417 Computer Integrated Manufacturing** 4 hours

**IME 422 Engineering Teams: Theory and Practice** 3 hours

**IME 424 Plant Layout and Material Handling Laboratory** 3 hours

**IME 450 Senior Design Project I** 3 hours

**IME 451 Senior Design Project II** 3 hours

**BALANCE OF THE PROGRAM**

The balance of the program will allow students to take courses from a variety of areas. It is expected that students will pursue courses in their areas of interest. Possible areas might include courses in business, computer programming, and advanced technology.

**Baccalaureate Writing Requirement**

Students who have chosen the Industrial Management Program will satisfy the Baccalaureate Writing Requirement by successfully completing IE 316 Report Preparation.

**General Programs**

General programs in the College of Engineering and Applied Sciences are designed to meet specific student needs not satisfied by any other curricula in the college.

**General College Curriculum (GCA)**

Non-engineering students who have not decided on a particular program in the College of Engineering and Applied Sciences may initially enroll in the General College Curriculum (GCA). Written permission of the academic advisor is required to enroll in this curriculum beyond the second year.

**Interdisciplinary Programs**

**Integrated Supply Management Major**

This program prepares students to integrate business and technological concepts for a successful career in supply management. The program is offered by the Haworth College of Business and the College of Engineering and Applied Sciences. Graduates receive a Bachelor of Business Administration degree. See the Haworth College of Business section of this catalog for program requirements.

**Integrated Supply Management Minor**

15 hours

**Core classes — 9 hours**

IE 326 Operations Planning and Control 3 hours

MKTG 372 Purchasing 3 hours

MKTG 484 Business Logistics 3 hours

**Capstone class — 3 hours (take one of the following)**

MKTG 485 Material Systems Analysis 3 hours

MGMT 480 Materials Management 3 hours

MGMT 481 Integrated Materials Systems 3 hours

**Elective — 3 hours (one of the following)**

IE 328 Quality Assurance and Control 3 hours

IE 318 Statistical Quality Control 3 hours

FCL 486 Marketing and Sales Law 3 hours

MKTG 485 Material Systems Analysis 3 hours

MGMT 480 Materials Management 3 hours

MGMT 481 Integrated Materials Systems 3 hours

**Engineering and Applied Sciences College Courses (ENGR)**

**ENGR 101 Introduction to Engineering and Technology** 1 hour

Exploration of the career opportunities and demands of the engineering and engineering technology professions. Includes activities to strengthen student communication, problem-solving, leadership and study skills, while surveying the various engineering disciplines.
ENGR 497 General University Studies
(Variable Credit)
Evaluation of work experience and/or course work relevant to the area of specialty in the Technical-Scientific area studies. Prerequisite: Permission of the Technical-Scientific Studies advisor, Room 2038, Kohrman Hall.

Related Academic Programs

COOPERATIVE EDUCATION PROGRAM
Lawrence A. Williams, Director

Students enrolled in engineering and related degree curricula may gain experience and knowledge about a professional field of interest by enrolling in the cooperative education program. Additional information may be obtained from the Director in Room 2038, Kohrman Hall.

Students on the alternating plan will alternate by semester between campus and industry. While on the job, the student can enroll in the course IME 300, Co-operative Education. During their employment periods, Co-op students are paid an appropriate salary.

Parallel co-op work experiences are also available.

Cooperative education students work in such areas as manufacturing, assembly, research, design, quality control, and safety. They may perform tests, prepare engineering drawings, collect and record data, design tools and fixtures, and assist in supervision.

The student's cooperative program is supervised by a college coordinator.

FOUNDRY PROGRAM

Any student enrolled in an engineering or related curriculum and interested in a career in the metal casting industry may be admitted into the Foundry Program. While engaged in this special program, the student must also meet the requirements for a B.S. degree offered by the College of Engineering and Applied Sciences. The Foundry Program is designed to allow the student an opportunity to elect various specific interest courses while earning a degree in any standard curriculum.

Foundry Program students must join the student chapter of the American Foundrymen's Society and register with the Foundry Educational Foundation. Upon reaching the sophomore year, it is recommended that all students apply for the Co-operative Education Program by contacting the coordinator of Engineering Cooperative Education in agreement with many sponsoring industries.

Students following the Foundry Program are eligible to be considered for scholarship awards made available each semester by the Foundry Educational Foundation.

AVIATION SCIENCES

Joseph Dunlap, Director
Robert Aardema
Blair Balden
Patrick Benton
Thomas Deckard
William Homan
William Rantz
Ronald Sackett
Curtis Swanson
Leard Wylie

The School of Aviation Sciences offers the following curricula:

- Aviation Flight Science — B.S. degree
- Aviation Technology and Operations (Technical Management Option) — B.S. degree
- Aviation Maintenance Technology (Maintenance Management Option) — B.S. degree
- Aviation Maintenance Technology (Advanced Technology Option) — B.S. degree

These programs are designed to produce graduates who think critically, communicate effectively, and participate meaningfully and ethically in the dynamic profession of aviation.

Enrollment

Enrollment will not be honored in any course if the student does not attend the first class meeting (lecture or lab), when other students are requesting that course unless prior arrangements have been made with the instructor.

Students not attending classes, for whatever reason, are responsible for processing drop slips with the Registration Office if fees are to be refunded.

Enrollment in flight courses may be subject to a waiting list which is maintained by the department and according to established criteria for seniority.

Transfer Credit

Transfer credit for FAA certification may be accepted providing the courses were taken at another accredited collegiate institution. Although these transfer courses may be approved for AVS credit, the use of these courses for AVS course substitution may not necessarily be approved.

Academic Advising

Students should contact an advisor as early as possible. The advisor is available to assist in the individual program planning, recommend electives appropriate to a student's educational objectives, discuss employment opportunities, and help solve academic problems. Substitutions and transfer credit must be approved by the advisor, the curriculum committee, and the director. The academic advisor is located in room 2038, Kohrman Hall, phone (616) 387-4033. Because of the prerequisites and the limited offering times, students must consult an academic advisor for proper course sequence.

Approved Electives

Electives must be approved by the department academic advisor. While choice of electives is intended to provide flexibility for students, they must be selected to provide a thrust and add strength to the individual's program. Non-related courses will not normally be approved.

Gate Courses

Certain courses are considered gate courses and are required to be completed with a grade of "C" or better prior to enrolling in upper division courses. Upon proper completion of the gate courses, students must contact an advisor to be allowed to enroll in upper division courses. This is not an automatic process. This policy does not apply to the Flight Science or Aviation Maintenance Technology curricula.

Additional Costs

Special lab fees are in effect for all flight courses to cover the cost of flight instruction and aircraft operations. The fee is subject to change without notice due to fluctuations in operating costs. Current fees range from approximately $700 to $8,500, depending on the course. Flight fees are based on the average flight time required to complete the course. Students may require additional or less instruction. Refund of flight fees is subject to departmental refund policy, depending on whether a student completes a course of instruction or withdraws. Flight fees are due at the beginning of the semester.

Students are required to have their own tools for courses required for the Airframe and Powerplant Certificate. A basic set of required tools may be purchased for approximately $150.

Class-related charges are assigned for some laboratory courses to help cover the cost of materials and services. Current non-flight lab fees range from $10-$200.

Aviation Maintenance Technology

Bachelor of Science Degree

The Aviation Maintenance Technology curriculum provides preparation for a variety of positions in the demanding field of aircraft maintenance. The Advanced Technology Option includes such areas as: performance testing, engineering/mechanical maintenance logistics, flight test engineering, product technical support, and aircraft maintenance engineering. The Maintenance Management Option emphasizes aircraft systems reliability and maintainability, licensing requirements, and repair facility management. Satisfactory completion of all requirements prepares one to take the Airframe and Powerplant written and practical examinations from the Federal Aviation Administration.

Baccalaureate Writing Requirement

Students who have chosen the Aviation Maintenance Technology curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing BIS 340 Business Communications.

Requirements

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to University requirements stated elsewhere in the bulletin:

1. A "C" average or better must be earned in required courses with an AVS, ECE, CMD, IME, or ME prefix.

2. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.

3. Complete one of the following program options of 128 semester credit hours. The schedule below is an example of leading to graduation in eight semesters, beginning in fall.
## Advanced Technology Option

### First Semester — 16 hours
- **AVS 120** Introduction to Aviation 2
- **CS 105** Introduction to Computers 3
- **PHYS 109** Elementary Physics I 5
- **IME 102** Technical Communication 3
- **PSY 100** General Psychology 3

### Second Semester — 16-18 hours
- **AVS 121** Aerodynamics and Performance 2
- **AVS 207** Crew Resource Management 2
- **MATH 200** Calculus with Applications 4
- **AREA I** General Education Elective 1-3
- **AREA II** General Education Elective 1-3
- **AREA III** General Education Elective 1-3
- **AREA IV** General Education Elective 1-3

### Third Semester — 14-16 hours
- **CHEM 103** General Chemistry I 4
- **MATH 200** Calculus with Applications 4
- **AREA I** General Education Elective 1-3
- **AREA II** General Education Elective 1-3
- **AREA III** General Education Elective 1-3
- **AREA IV** General Education Elective 1-3

### Fourth Semester — 16 hours
- **AVS 261** Maintenance Regulations 2
- **AVS 262** Aircraft Structures I 3
- **AVS 263** Basic Aircraft Engines 4
- **AVS 264** Aircraft Electrical I 2
- **AVS 265** Aircraft Propellers 2
- **AVS 280** Transportation Technology 3

### Fifth Semester — 15 hours
- **AVS 362** Aircraft Structures II 5
- **AVS 363** Reciprocating Engine Overhaul 3
- **AVS 366** Avionics 3
- **AVS 369** Testing, Evaluation and Instrumentation 4

### Sixth Semester — 16 hours
- **AVS 464** Aircraft Electrical II 4
- **AVS 465** Non-Destructive Testing 3
- **AVS 466** Avionics 3
- **AVS 469** Senior Project I 1

### Seventh Semester — 18 hours
- **AVS 464** Aircraft Electrical II 4
- **AVS 465** Non-Destructive Testing 3
- **AVS 466** Avionics 3
- **AVS 469** Senior Project I 1

### Eighth Semester — 17 hours
- **BIS 340** Business Communications 3
- **AVS 491** Senior Project II 2
- **AVS 470** Advanced Propulsion 3
- **AVS 471** Advanced Instrumentation 3
- **AVS 472** Advanced Structures and Systems 3
- **AVS 473** Advanced Airframe Systems 3

*At least six credits of coursework within the General Education Distribution Program must be at the 300-400 level.

## Aviation Flight Science

### Bachelor of Science Degree

**BACCALAUREATE WRITING REQUIREMENT**

Students who have chosen the Aviation Flight Science curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing BIS 340 Principles of Business Communication.

### REQUIREMENTS

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to University requirements stated elsewhere in this bulletin:

1. A "C" average or better must be earned in required courses with an AVS prefix.
2. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.

### AVIATION FLIGHT SCIENCE — 126 hours

Enrollment in flight courses may be subject to a waiting list. Candidates for flight courses must complete an application at the Aviation Administration/Flight Operations building at the W. K. Kellogg Airport (Battle Creek, Michigan) to be considered for enrollment in these courses. Registration is administered by the School of Aviation Sciences.

Students will be permitted to enroll in this curriculum and the flight courses on the basis of results of the School's Flight Profile Analysis Program. Participation in this program is required of all students wanting to enroll in the Aviation Flight Science curriculum.

### First Semester — 16 hours
- **AVS 120** Introduction to Aviation 2
- **COM 170** Interpersonal Communications 3
- **PHYS 109** Elementary Physics 5
- **PSY 100** General Psychology 3
- **IME 102** Technical Communication 3

### Second Semester — 16 hours
- **AVS 121** Aerodynamics and Performance 2
- **BIS 260** Microcomputer Business Applications 3
- **AREA I** General Education Elective 3
- **AREA III** General Education Elective 3
- **AREA IV** General Education Elective 3

### Third Semester — 17-19 hours
- **CHEM 103** General Chemistry I 4
- **MATH 200** Calculus with Applications 4
- **BIS 260** Microcomputer Business Applications 3
- **AREA I** General Education Elective 3
- **AREA III** General Education Elective 3
- **AREA IV** General Education Elective 3

### Fourth Semester — 16 hours
- **AVS 261** Maintenance Regulations 2
- **AVS 262** Aircraft Structures I 3
- **AVS 263** Basic Aircraft Engines 4
- **AVS 280** Transportation Technology 3

### Fifth Semester — 15 hours
- **AVS 362** Aircraft Structures II 5
- **AVS 363** Reciprocating Engine Overhaul 3
- **AVS 366** Avionics 3
- **AVS 369** Testing, Evaluation and Instrumentation 4

### Sixth Semester — 18 hours
- **AVS 364** Aircraft Electrical II 4
- **AVS 365** Non-Destructive Testing 3
- **AVS 366** Avionics 3
- **AVS 367** Testing, Evaluation and Instrumentation 4
- **MGMT 300** Fundamentals of Management 3

### Seventh Semester — 18 hours
- **AVS 368** Aircraft Systems 5
- **AVS 369** Testing, Evaluation and Instrumentation 4
- **MATH 126** Business Statistics 3
- **GEOG 105** Physical Geography 4
- **AREA I** General Education Elective 3

### Eighth Semester — 14 hours
- **AVS 370** Aircraft Systems 5
- **AVS 371** Advanced Instrumentation 3
- **AVS 372** Advanced Structures and Systems 3
- **AVS 373** Advanced Airframe Systems 3

*At least six credits of coursework within the General Education Distribution Program must be at the 300-400 level.

## Aviation Flight Science

### Bachelor of Science Degree

**BACCALAUREATE WRITING REQUIREMENT**

Students who have chosen the Aviation Flight Science curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing BIS 340 Principles of Business Communication.

### REQUIREMENTS

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to University requirements stated elsewhere in this bulletin:

1. A "C" average or better must be earned in required courses with an AVS prefix.
2. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.
### Seventh Semester — 16 hours

- AVS 306 Advanced Aerodynamics and Performance ........................................... 3
- AVS 322 Global Navigation and International Flight ............................................ 3
- AVS 323 Professional Flight II ........................................................................... 5
- AVS 337 Line Oriented Flight Crew Simulation .............................................. 3
- AVS 411 Airline Flight Operations .......... 2

### Eighth Semester — 16 hours

- AVS 325 Professional Flight III ........................................................................... 5
- AVS 412 Line Oriented Flight Crew Simulation .............................................. 2
- BIS 350 Management Information Systems ..................................................... 3
- Approved Elective ......................................................................................... 3
- Approved Elective ......................................................................................... 3
  * Must be upper division courses.

### Aviation Technology and Operations

#### Bachelor of Science Degree

The Aviation Technology and Operations curriculum provides preparation for a variety of positions in operations management or technical support areas of the aviation industry. The technical management option leads to careers in areas such as technical sales or service, production, and general aviation management.

#### Baccalaureate Writing Requirement

Students who have chosen the Aviation Technology and Operations curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing AVS 313 Aircraft Electrical Systems and AVS 415 Aircraft Turbine Powerplants.

#### Requirements

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to University requirements stated elsewhere in this bulletin:

1. A “C” average or better must be earned in required courses with an AVS, ECE, CMD, or IME prefix.
2. No more than two grades of “D” or “D+” in courses presented for graduation may be counted for graduation.
3. Complete one of the following programs. The schedule below is an example of one leading to graduation in eight semesters, beginning in Fall.

Courses listed in darker italic print must be completed with at least “C” prior to enrollment in upper division courses.

#### A. TECHNICAL MANAGEMENT OPTION — 129 hours

### Fall Semester — 17 hours

- AVS 117 Aircraft Reciprocating Powerplants .................................................... 4
- ECE 100 Fundamentals of Circuits and Electronics .................................... 3
- ACTY 201 Accounting Concepts and Applications ........................................ 3
- COM 104 Public Speaking ............................................................................. 3
- AREA IV Other Cultures* ............................................................................ 4

### Winter Semester — 18 hours

- AVS 205 Aviation Safety .................................................................................. 2
- AVS 213 Airframe Hydraulic, Pneumatic and Auxiliary Systems .............. 4
- IME 222 Fuels and Lubricants ......................................................................... 3
- ECE 101 Fundamentals of Electronics and Machines ............................. 3
- ECON 201 Principles of Economics .................................................................. 3
- AREA I Fine Arts* ......................................................................................... 3

### Fall Semester — 16 hours

- AVS 280 Transportation Technology ................................................................. 3
- AVS 311 Powerplant Systems Evaluation and Testing .................................. 4
- BIS 340 Business Communication ..................................................................... 3
- AREA II Humanities* .................................................................................... 3
- AREA III U.S. Cultures* .................................................................................. 3

### Winter Semester — 15 hours

- AVS 313 Aircraft Electrical Systems ................................................................. 3
- AVS 310 Airport Management OR
- AVS 327 Airline Administration ....................................................................... 3
- IME 328 Quality Assurance and Control ...................................................... 3
- FCL 380 Legal Environment ............................................................................. 3
- MGMT 300 Management .................................................................................. 3

### Fall Semester — 16 hours

- AVS 415 Aircraft Turbine Powerplants ............................................................... 4
- IME 320 Engineering Cost Analysis OR
- MGMT 360 Quantitative Methods for Business Decisions OR
- ECON 400 Managerial Economics .................................................................. 3
- IME 326 Operations Planning and Control ..................................................... 3
- IME 402 Supervision of Industrial Operations ............................................... 3
- FCL 320 Business Finance .............................................................................. 3

### Winter Semester — 14 hours

- IME 422 Conference Leadership ....................................................................... 3
- MKTG 250 Marketing Principles ....................................................................... 3
- Approved Electives ......................................................................................... 5
- AREA V Social and Behavioral Sciences* ......................................................... 3
  * At least two of these courses must be at the 300–400 level.

### Aviation Science Courses (AVS)

#### AVS 116 Aircraft Propellers (1–3)

- 2 hrs. Theory, operation, troubleshooting, and servicing of aircraft propeller systems for reciprocating and turbine engines. For students seeking the A and P certificate.
  - Prerequisites: AVS 120, AVS 121, or consent of department.

#### AVS 117 Aircraft Reciprocating Powerplants (3–2)

- 4 hrs. Reciprocating aircraft engine principles, designs, and operations. Laboratory work includes disassembly and inspection of engines and components and engine operation. Prerequisite: AVS 120 or concurrent.

- AVS 118 Aircraft Structures (2–2) 3 hrs. Airframe structures and coverings including fabric, sheet metal, honeycomb, plastics, and hardware. Laboratory practice in preventive maintenance and inspection. Prerequisite: AVS 120 or taking concurrently.

- AVS 119 Reciprocating Powerplant Overhaul (0–5) 2 hrs. Comprehensive laboratory study of aircraft reciprocating powerplants involving inspection, repair, and overhaul procedures for students seeking the A and P certificate.
  - Prerequisite: AVS 117

- AVS 120 Introduction to Aviation 2 hrs. Development of aviation, fundamentals of flight, federal regulations, and basic navigation.

- AVS 121 Aerodynamics and Performance 2 hrs. Theory of flight, aircraft structure and control, propulsion, performance, and weight and balance. Prerequisites: PHYS 109, or taking concurrently.

- AVS 122 Aircraft Systems 3 hrs. Flight, navigation, and electrical systems.
  - Maintenance and airworthiness requirements.

- AVS 205 Aviation Safety (2–0) 2 hrs. Physiological and psychological factors relating to flight safety emphasizing cause and effect of airplane accidents and related problem-solving processes. Includes a systems approach to safety program development and management.

- AVS 206 Flight Physiology 2 hrs. Effects of high altitude flight on the human body, flying and health; first aid and survival. Attention will also be given to information processing and perception in flight.
  - Prerequisite: AVS 205.

- AVS 207 Crew Resource Management 2 hrs. Social and task requirements of effective group performance. Topics include communications, leadership, roles, decision making, resources and team building.
  - Prerequisites: AVS 120, COM 170, and PSY 100.

- AVS 212 Aviation Meteorology 2 hrs. Application of meteorology principles to flight operations. Topics include aviation forecasts, weather maps, NOTAMs, international weather patterns and format, weather radar, TCAS, and the role and responsibilities of AOC in weather observation and reporting.
  - Prerequisite: GEOG 225.

- AVS 213 Airframe Hydraulic, Pneumatic, and Auxiliary Systems (2–4) 4 hrs. Classroom and laboratory study of aircraft hydraulic and pneumatic components and systems, air conditioning and pressurization, fire detection and extinguishing systems and other auxiliary systems.
  - Prerequisites: AVS 120, AVS 121, CS 106 or concurrently.

- AVS 216 Aircraft Structural Repair (0–6) 3 hrs. Major structural repair methods including procedures for metal, plastics, composites, and welded structures.
  - Prerequisites: AVS 118, CMD 256.

- AVS 261 Maintenance Regulations 2 hrs. Regulatory structure and legal environment impacting aviation maintenance operations and practices. Including discussion of the
Federal Aviation Regulations rule making process, legal documentation, and maintenance publications required for repair station and airworthiness. Prerequisite: AVS 120

AVS 262 Aircraft Structures I 3 hrs. Basic aircraft structures including materials, assembly methods, inspection and repair. Primary and secondary flight control operations and rigging, finishing and corrosion control. Aircraft drawings are also covered. Prerequisites: AVS 120, PHYS 109, CHEM 103.

AVS 263 Basic Aircraft Engines 4 hrs. Introduction of basic power plants concepts and principles, including Otto, Diesel, and Brayton cycles of operation. Laboratory work includes engine disassembly. Prerequisites: AVS 121, PHYS 109, CHEM 103.

AVS 264 Aircraft Electrical I 2 hrs. Laboratory study of basic electricity including electron theory, Ohm's law, Kirchhoff's laws, electrical power, series and parallel circuits, and aircraft electrical wiring. Prerequisites: PHYS 109, CS 105 or BIS 102. MATH 200.


AVS 277 Flight Simulator Laboratory 1 hr. Ten hours of individual ground instruction and a 10 hour block of instruction in one of the university's flight simulators applicable to initial training in instruments, flight instruction or multi-engine; for recurrency training or for preparation of FAA and airline flight checks.

AVS 280 Transportation Technology: Policy, Perils, and Promise (3–0) 3 hrs. Introduction to transportation technologies. Survey the development of transportation policy and the key players in policy decision making. Case studies will be used to explore issues in the practical application of transportation and how these technologies impact society, including demographics, work, and the environment.

AVS 296 Private Pilot Helicopter 3 hrs. Private pilot ground, flight and individual instruction leading to private pilot helicopter certificate. Progression based on performance based standards with a minimum of 35 hours flight and 35 hours ground instruction.

AVS 305 Advanced Aerodynamics and Performance 3 hrs. Advanced aerodynamics and flight principles related to airplane operations and performance. Design concepts for high performance, supersonic and special use airplanes are studied to enable pilots to understand and predict airplane performance and limitations in a wide range of flight applications with special regard for speed and configuration. Prerequisite: AVS 121.

AVS 307 Advanced Aircraft Systems 3 hrs. A study of the design and operation of aircraft reciprocating powerplants, propellers, and turbine engines. Included are the pneumatic, fuel, ignition, lubrications, pressurization, and emergency aircraft systems. Prerequisite: AVS 122.

AVS 310 Airport Operation and the duties of the airport manager. Topics studied will include the relationship between airport and community, legislation affecting airports, and planning, organizing, financing, and developing programs and services. Prerequisite: Junior standing in aviation curricula or approval of instructor.


AVS 312 Powerplant Service and Management (2–10) 5 hrs. Aircraft powerplant inspection, repair and overhaul procedures including reciprocating engines, turbine engine hot section, propellers, and accessory systems. Emphasis on repair station procedures, organization, and management. Prerequisites: AVS 311, MGMT 300, and consent of department.

AVS 313 Aircraft Electrical Systems (2–3) 3 hrs. A review of basic electricity, study and laboratory practice in aircraft electrical components and systems, electrical instrumentation, and auto pilot systems. Prerequisites: AVS 120, AVS 121, ECE 101.

AVS 315 Propulsion System Performance (0–6) 3 hrs. Operation, testing, and diagnosis of aircraft engines and accessory systems. Application of instrumentation, dynamometers, and service test equipment. Prerequisites: AVS 312, ECE 101.

AVS 316 Avionics Systems (2–2) 3 hrs. Advanced topics in airborne electrical and electronics systems including multiplexing, flight control, and navigation applications. Prerequisite: AVS 313.

AVS 318 Aircraft Service and Management (2–10) 5 hrs. Airframe inspection, repair, and servicing including routine and 100-hour inspections, minor repairs, and preventive maintenance. Prerequisites: AVS 117, ECE 101, and consent of department. This study will also include management aspects of FBO service centers and related service management problems and solutions. Prerequisites: AVS 213, AVS 216, AVS 312.

AVS 319 Aviation Legislation 3 hrs. Legal principles governing the aviation industry. Historical precedents, regulatory statutes, standards, contracts, liability and insurance, current developments and court decisions.

AVS 321 Professional Flight I 5 hrs. Initial flight, ground, and simulator instruction in aeronautical skills and knowledge necessary for private and commercial applications. Includes instruction to high performance aircraft and instrument flight. Prerequisite: Second class medical certificate. AVS 100, AVS 117, AVS 226, and AVS 207. AVS 207 must be completed or taken concurrently.

AVS 322 Global Navigation and International Flight Planning 3 hrs. Advanced navigation systems and equipment including RNAV, pictorial displays, flight directors, airborne radar, INS, IRS, OMEGA, GLONASS, SATCOM, and GPS. Principles of worldwide navigation including time zones, spherical distance and course, and electronic calculations for decision making. Long range planning including air transport performance. Prerequisites: AVS 321.

AVS 323 Professional Flight II 5 hrs. Continuing flight, ground, and simulator instruction in aeronautical skills, knowledge, complex aircraft and experience pursuant to commercial-instrument pilot certification. Particular emphasis upon use of air traffic facilities and airways in visual as well as instrument environments. Prerequisites: AVS 321, AVS 322, or taking concurrently.


AVS 327 Airline Administration 2 hrs. Economic characteristics of the airline industry and air carrier ownership and organization. Revenues, costs, and productivity. Route structure and scheduling. International competition and regulation. Prerequisite: AVS 120.

AVS 330 Aerobatic Flight 1 hr. Ground and flight instruction in aerobatic flight maneuvers. This course will improve aircraft handling capabilities, control, recovery, understanding of aerodynamics, and self confidence. Prerequisite. Private pilot certificate.

AVS 332 Single Engine Seaplane 1 hr. Ground and flight instruction which would add a seaplane class rating to private or commercial pilot certificate holders. Prerequisite. Private pilot certificate.

AVS 360 Reciprocating Engine Overhaul 3 hrs. Comprehensive laboratory work involving the inspection, repair, overhaul, and operation of reciprocating power plants, in accordance with FAA and manufacturer technical data. Proper logbook entries and overhaul documentation is included. Prerequisite: AVS 263.

AVS 362 Aircraft Structures II 5 hrs. Advanced study of aircraft structures building upon the knowledge gained in Airframe I. Includes substantial laboratory work including inspection, test and repair of welded fiberglass, composite, plastic, honeycomb, and laminated primary and secondary structures. Prerequisite: AVS 262.


AVS 364 Aircraft Electrical II 4 hrs. Classroom and laboratory study of aircraft electrical diagrams, components (batteries, starters, generators, alternators, regulators, switches, circuit breakers, and wiring), and systems including care, preventive maintenance, and repair. Prerequisite: AVS 264.
AVS 366 Non-Destructive Testing 3 hrs.
Theory and application of non-destructive testing methods; liquid penetrant, magnetic particle, radiographic, eddy current, ultrasonic, and enhanced visual. Other methods are also discussed. Prerequisites: AVS 362, AVS 364.

AVS 366 Avionics 3 hrs.
Theory, operation, installation, inspection, maintenance, and repair of aircraft avionics and associated equipment. Included will be study of flight instruments, communication, navigation, flight management, auto flight, and weather associated systems. Prerequisites: AVS 362, AVS 364.

AVS 367 Airframe Systems 5 hrs.
Classroom and laboratory study of aircraft hydraulic and pneumatic components and systems, air conditioning and pressurization, fire detection and extinguishing systems and other airframe systems. Prerequisites: AVS 262, AVS 264.

AVS 369 Testing Evaluation and Instrumentation 4 hrs.
Aircraft engine and systems performance testing, operations, and evaluation including applications of indicating and warning systems, signal processing, digital and analog data acquisition. Engine diagnosis includes the use of dynamometers, test cell thrust beds and computer based analyses. Prerequisites: AVS 363, AVS 364. Corequisite: AVS 366.

AVS 399 Field Experience 1–3 hrs.
A program of practical experience and independent study to supplement and enrich classroom learning. Written reports are required. May be repeated a maximum of eight semester credit hours. Credit/No Credit status only. Prerequisite: Consent of department.

AVS 400 Aerodynamics and Flight Principles (2–0) 2 hrs.
Aerodynamics and flight principles related to airplane operation and performance. An advanced course for pilots to enable them to understand and predict airplane performance in a wide range of flight applications. Prerequisites: AVS 363, MATH 200, CS 106.

AVS 402 Multi-Engine Flight (0–1.3) 1 hr.
Principles of flight in multi-engine airplanes. Provides transition from complex single-engine airplane to procedures and techniques peculiar to multi-engine operation. Prerequisite: AVS 325 or equivalent.

AVS 403 Flight Instructor Fundamentals 2 hrs.
An introduction to techniques and responsibilities of flight instructors. Includes classroom preparation in fundamentals of learning and teaching theory. Features instruction in proper supervision of instruction in flight situations. Prerequisite: Completion of AVS 325 with a grade of "C" or better.

AVS 404 Instrument Flight Instructing (1–1) 1 hr.
Techniques of flight instruction applied to instrument flying. Designed to upgrade an airplane flight instructor to an instrument instructor. Instructional techniques of attitude instrument flying, flight simulator utilization, instrumentation, operation procedures, radio navigation, critical situations, and performance analysis. After certification, supervised teaching experience is required. Prerequisite: AVS 406.

AVS 406 Flight Instructor Certification 2 hrs.
A study and application of airplane performance skills, flight maneuvers, and pilot operations pursuant to qualification as flight instructor. Involves flight and ground instruction, lesson planning and execution, and analysis of common student errors. Prerequisite: AVS 403, which must be completed at grade "C" or above.

AVS 409 Multi-Engine Flight Instructor 1 hr.
Instructional techniques necessary to qualify for an airplane multi-engine flight instructor rating. Topics include multi-engine aerodynamics and performance, analysis of multi-engine procedures and maneuvers, multi-instructor responsibilities, common student errors, and flight safety considerations. Prerequisites: AVS 325, AVS 406.

AVS 411 Airline Flight Operations 2 hrs.
Systems, performance, and regulation of transport aircraft and operations. Role of the dispatcher in flight operations. Prerequisites: Student must have completed or be taking concurrently AVS 306, AVS 307 and AVS 322.

AVS 412 Line Oriented Flight Crew Simulation 2 hrs.
Utilization of aircraft performance, systems, and resources (both human and information) to enhance flight operations and human performance. Prerequisite: AVS 411 or taking concurrently.

AVS 415 Aircraft Powerplants (3–3) 4 hrs.
Reaction engine principles, gas turbine engine construction, design and operation. Includes testing and operation of jet aircraft powerplant systems. Prerequisites: CS 106, MATH 200 and AVS 313.

AVS 416 Maintenance Regulations (2–0) 2 hrs.
Regulatory impact on maintenance practices, legal considerations, specific requirements for licensing and certification of airmen, repair stations, and aircraft. Prerequisites: AVS 312, AVS 318.

AVS 418 System Reliability and Maintainability (3–0) 3 hrs.
A review of aircraft maintenance practices, monitoring and control procedures; analysis of data essential for planning and quality control. Database management applications. Prerequisites: AVS 311, AVS 318, MATH 260, CS 106.

AVS 419 Advanced Maintenance Systems (2–2) 3 hrs.
This is the final course taken prior to FAA certification of the airplane and powerplant mechanic. Each subject area required for certification will be studied and the student will demonstrate competence by passing an FAA written, oral, and practical examination administered by a designated mechanic examiner. Students electing this course must have completed or be currently completing all courses required in the special program.

AVS 460 Aircraft Inspection and Service I 4 hrs.
Required aircraft inspections are performed in accordance with the manufacturer’s and FAA regulatory inspection rules. Servicing, airworthiness documentation, record keeping, data searches, inventory, parts tracking and accountability are performed with emphasis on computerized records. Prerequisites: Successful completion of all 200- and 300-level aviation maintenance core courses.

AVS 461 Aircraft Inspection and Service II 5 hrs.
Aircraft heavy maintenance, assembly, disassembly, rigging and engine removal and installations are performed. Includes corrosion control treatment, landing gear troubleshooting and repairs. Aircraft weight and balance, including compliance with airworthiness documentation, and record keeping is performed. Prerequisites: Successful completion of all 200- and 300-level aviation maintenance core courses.

AVS 462 Reliability, Maintainability and Supportability 3 hrs.
Aircraft reliability, maintainability and supportability (RMS) are examined. Methods of incorporating reliability and maintainability into aircraft design are discussed. Support requirements and the economic impact of maintenance on life cycle costs are covered. Prerequisite: AVS 367. Corequisite: AVS 464.

AVS 463 Airline Maintenance Operations 3 hrs.
Maintenance operations of commercial airlines will be examined. Topics include corporate structure, maintenance philosophy, authority and responsibilities of the maintenance organization, cost control, and the economic impact of maintenance operations on airline profitability. Support organizations and the impact of Federal regulations will also be covered. Prerequisite: AVS 462.

AVS 464 Aircraft Turbine Engines and Systems 5 hrs.
Advanced aircraft engine and systems operations, service, repair, and overhaul. Emphasis is placed on inspection, servicing, troubleshooting, and repairing aircraft engines in the repair station and commercial air carrier environments. Prerequisites: AVS 365, AVS 366.

AVS 470 Advanced Propulsion Systems 3 hrs.
Advanced propulsion systems with emphasis on aircraft turbine engines and systems. Component design, system integration, advanced testing, operations, and troubleshooting are covered. Prerequisites: Senior standing and completion of maintenance core requirements.

AVS 471 Advanced Instrumentation Systems 3 hrs.
Advanced engine instrumentation systems with emphasis on the aircraft engine monitoring systems and flight deck integration. Advanced topics in electronic data acquisition, systems integration, and applications to engine testing, operations, and troubleshooting. Prerequisites: Senior standing and completion of maintenance core requirements.

AVS 472 Advanced Structures and Materials 3 hrs.
Advanced topics in airplane structures. Included will be study of materials and manufacturing processes used in current, state of the art aircraft structures. New generation materials will be addressed, with emphasis being placed on non-metallic composite structures. Prerequisites: AVS 360, AVS 362.

AVS 473 Advanced Airframe Systems 3 hrs.
Classroom and laboratory study of the integration and interdependency of systems used on transport category aircraft. Systems included in the study will be hydraulics, pneumatics, air conditioning, pressurization, fire detection and extinguishing, flight controls, fire management systems (FMS), and engine indications and crew alerting systems (EICAS).
Prerequisites: Senior standing and completion of maintenance core requirements.

AVS 490 Senior Project I - Planning
1 hr.
First course of a two-semester sequence. Students work in teams on approved projects. Class discussion will include problem definition, project planning, task scheduling, ethics, and decision impact analysis. Use of case studies will add to the students' understanding of real world situations. Prerequisites Senior standing or by department approval.

AVS 491 Senior Project II - Analysis
2 hrs.
Second course in the two-semester senior project. Solutions proposed for the problem identified in Senior Project I will be fully researched by the same team. This investigation will include ethical, financial, legal, and environmental concerns. Written and oral status reports are required along with a formal report and professional presentation. Interaction will faculty and industry mentors is also necessary. Prerequisite: AVS 490.

AVS 493 High-Performance Transition
2 hrs.
Ground and flight instruction that will lead to a high-altitude endorsement which will allow the holder of the endorsement to operate an aircraft above 25,000 feet and to obtain flight time in a turbo-charged, pressurized, multi-engine aircraft. Prerequisite: AVS 325 or equivalent.

AVS 494 Airline Transport Pilot
3 hrs.
Flight and ground instruction leading to an Airline Transport Pilot certificate. Prerequisites: AVS 325 or equivalent and 1500 flight hours.

AVS 497 Special Flight Instruction
1–3 hrs.
Instruction tailored to the individual needs of students pursuing the professional pilot course sequence. Develop skills to progress efficiently in normal course sequence. Credit/No Credit only. May be repeated.

AVS 499 Studies in Aviation Sciences
1–3 hrs.
An individual study program to supplement regular course work, arranged in consultation with a study supervisor. One to three hours credit per semester. May be repeated not to exceed six credit hours. Prerequisite: Consent of department.

CONSTRUCTION ENGINEERING, MATERIALS ENGINEERING, AND INDUSTRIAL DESIGN

Vladimir Tsukruk, Interim Chair
Phina Ari-Gur
Oscar Abudayyeh
Dmitry Azrak
David Middleton
Frank Mwakasisi
Abidun Olawe
Roman J. Rabiej
Anil Sawhney

Adjunct Faculty
Richard Baker
Patrick Hughes
David Johnson
Norman Smith
Carl Wendell

The Department of Construction Engineering, Materials Engineering, and Industrial Design offers the following curricula:

Construction Engineering and Management—B.S.E. degree

Industrial Design—B.S. degree

Materials Science and Engineering—M.S. degree

These programs are designed to provide graduates with the background necessary to successfully assume a variety of positions in a wide variety of industries. The combination of specialized and general education is intended to allow employment flexibility, although most graduates are placed in industries closely related to their field of study.

Academic Advising

Students should contact their advisor as early as possible. The advisor is available to assist in individual program planning, recommend electives appropriate to a student's educational objectives, discuss employment opportunities, and help solve academic problems. Substitutions and transfer credit must be approved by the advisor, the curriculum committee, and the department chair. The academic advisor is located in Room 2038, Kohrmann Hall, phone (616) 387-4033. Because of prerequisites and limited offering times, students must consult with an academic advisor for proper course sequence.

Additional Information

General information regarding admissions, advising, scholarships, and special programs of interest to students in this department may be found at the beginning of the College of Engineering and Applied Sciences section of the catalog.

Credit by examination may be allowed with appropriate evidence of preparation, experience, or certification. Please refer to the University's comprehensive examination policy.

Additional Costs

Class-related charges are assigned for laboratory, studio, and some lecture courses to help cover cost of materials and services.

Cooperative Education

Students may elect the cooperative plan of education. In this plan, the student alternates a semester of study on campus with a semester of compensated industrial experience. Students may work in their area of study, gaining valuable professional experience.

Approved Electives

Electives must be approved by the department academic advisor. While choice of electives is intended to provide flexibility for students, they must be selected to provide a thrust and add strength to the individual's program. Non-related courses will not normally be approved.

Lists of appropriate electives are available from the academic advising office.

Construction Engineering and Management

Bachelor of Science in Engineering (Construction Management) Degree

The construction engineering and management curriculum prepares students for entry level positions in construction planning, management, or development. Technical, business, and human relations knowledge and skills are developed in classroom settings and on residential and commercial construction job sites.

Baccalaureate Writing Requirement

Students who have chosen the Construction Engineering and Management curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing CMD 483 Project Design and Control and CMD 485 Senior Project.

Requirements

Candidates for the Bachelor of Science in Engineering (Construction Management) degree must complete the following program of 132 semester credit hours as well as University requirements stated elsewhere in this catalog.

1. To satisfy professional engineering accreditation requirements, all students must complete a sequence of two courses (minimum of six credit hours in the humanities, fine arts, social sciences, and/or behavioral sciences). The sequence must begin with a 100-200 level course and conclude with a course at the 300-400 level. Both courses must have the same course prefix, must provide depth, and must not be a selection of unrelated introductory courses. The sequence may be selected from General Education Areas I, II, III, IV, and/or V as part of the University General Education requirements. If the University General Education requirements have been otherwise satisfied, the sequence may be from any of the humanities, fine arts, social science, and/or behavioral sciences.

2. A "C" average or better must be earned in required courses with a CMD, ECE, IME or ME prefix.

3. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.

4. Complete the following program of 132 semester hours. The schedule below is an example of one leading to graduation in eight semesters. Pre-engineering requirements are in darker italic print.
### CONSTRUCTION ENGINEERING, MATERIALS ENGINEERING, AND INDUSTRIAL DESIGN 219

#### CMD 131 Introduction to the Construction Environment

(AREA VII) 3

#### CMD 149 Introduction to Architectural Drawing

(AREA VI) 3

#### CHEM 101 or 102 General Chemistry I

(AREA VI) 4

#### IME 106 Introduction to Architecture (Prof. 1) 3

#### MATH 122 Calculus I (Prof. 3) 4

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**Second Semester — 18 hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CMD 233</td>
<td>Construction Codes and Specifications</td>
<td>3</td>
</tr>
<tr>
<td>CS 106</td>
<td>BASIC for Engineers</td>
<td>1</td>
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<tr>
<td>GEOL 130</td>
<td>Physical Geology (AREA VI)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 123</td>
<td>Calculus II (Prof. 4)</td>
<td>4</td>
</tr>
<tr>
<td>ME 250</td>
<td>Material Science I</td>
<td>3</td>
</tr>
<tr>
<td>AREA I</td>
<td>Fine Arts</td>
<td>3</td>
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**Third Semester — 17 hours**

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>IME 261</td>
<td>Engineering Statistics</td>
<td>3</td>
</tr>
<tr>
<td>ME 232</td>
<td>Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>ME 256</td>
<td>Statics</td>
<td>3</td>
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<tr>
<td>PHYS 205</td>
<td>Mechanics and Heat (AREA VI)</td>
<td>4</td>
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<tr>
<td>PHYS 206</td>
<td>Mechanics and Heat Lab (AREA VI)</td>
<td>1</td>
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<tr>
<td>AREA II*</td>
<td>Humanities*</td>
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**Fourth Semester — 16 hours**

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<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ME 257</td>
<td>Mechanics of Materials</td>
<td>4</td>
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<tr>
<td>ME 258</td>
<td>Dynamics</td>
<td>3</td>
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<tr>
<td>MATH 272</td>
<td>Vector and Multivariate Calculus</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 207</td>
<td>Electricity and Light</td>
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</tr>
<tr>
<td>PHYS 208</td>
<td>Electricity and Light Lab</td>
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**Fifth Semester — 17 hours**

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CMD 236</td>
<td>Construction Measurements and Layout</td>
<td>3</td>
</tr>
<tr>
<td>CMD 238</td>
<td>Construction Materials and Methods</td>
<td>3</td>
</tr>
<tr>
<td>CMD 336</td>
<td>Soil Mechanics and Foundations</td>
<td>3</td>
</tr>
<tr>
<td>ECE 210</td>
<td>Circuit Analysis</td>
<td>4</td>
</tr>
<tr>
<td>MATH 374</td>
<td>Intro to Linear Algebra and Differential Equations</td>
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**Sixth Semester — 15 hours**

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<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CMD 431</td>
<td>Construction Planning and Estimating</td>
<td>3</td>
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<tr>
<td>CMD 436</td>
<td>Construction Estimating, Bidding and Cost Control</td>
<td>4</td>
</tr>
<tr>
<td>ME 356</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 210</td>
<td>Principles of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>AREA VIII</td>
<td>Health and Well-Being</td>
<td>2</td>
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**Seventh Semester — 16 hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CMD 386</td>
<td>Structural Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>CMD 438</td>
<td>Construction Project Management</td>
<td>3</td>
</tr>
<tr>
<td>CMD 483</td>
<td>Project Design and Control (Prof. 2)</td>
<td>3</td>
</tr>
<tr>
<td>IME 310</td>
<td>Engineering Economy</td>
<td>1</td>
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<tr>
<td>ECON 201</td>
<td>Principles of Economics</td>
<td>3</td>
</tr>
<tr>
<td>AREA III*</td>
<td>U.S. Cultures and Issues</td>
<td>3</td>
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**Eighth Semester — 16 hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CMD 440</td>
<td>Reinforced Concrete Design</td>
<td>3</td>
</tr>
<tr>
<td>CMD 485</td>
<td>Senior Project (Prof. 2)</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 300</td>
<td>Fundamentals of Management</td>
<td>3</td>
</tr>
<tr>
<td>FOL 320</td>
<td>Business Finance</td>
<td>3</td>
</tr>
<tr>
<td>AREA IV*</td>
<td>Other Cultures/Civilizations</td>
<td>4</td>
</tr>
</tbody>
</table>

*At least two of these courses must be at the 300-400 level. NOTE: Pre Engineering courses appear in bold, italic print

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### Industrial Design

#### Bachelor of Science Degree

This program prepares designers with the aesthetic and technical potential to set new directions in product development and design, based on knowledge of human needs, materials, processes quality, and production standards. The curriculum in Industrial Design is a blend of art, technology, business, and general studies with courses in design methodology, philosophy and history, engineering, fine arts, graphics, drafting, and professional practices.

**Entrance and Advancement in the Program** Any interested student may register for the freshman, (100 level). Industrial Design studio classes. There will be two portfolio reviews to advance to higher level studio classes. The first review is to advance from the freshman, (100 level), studio classes to the sophomore, (200 level), studios. The second review is to advance from the sophomore to junior, (300 level), studios. Reviews are normally held in the winter semester for admission into the following fall semester. Registration of Industrial Design classes may be canceled for students who do not have their portfolios reviewed for admission to the program prior to the start of classes.

Students' portfolios are reviewed for an understanding of industrial design and drawing skills. Additional abilities demonstrated by work in Graphic Design, Interior Design, computer aided design (CAD), fine art, life drawing, painting, sculpture, ceramics, jewelry, and other creative pursuits will also be evaluated.

**Baccalaureate Writing Requirement** Students who have chosen the Industrial Design curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing CMD 443 ID Thesis and Project I and CMD 447 ID Thesis and Project II.

**Requirements**

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to University requirements stated elsewhere in this catalog:

1. A “C” average or better must be earned in required courses with an CMD or IME prefix.
2. No more than two grades of “D” or “DC” in courses presented for graduation may be counted for graduation.
3. Complete the following program of 131 semester credit hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall.

   - Courses listed in italic print must be completed with at least a “C” prior to enrolling in upper level Construction Engineering, Materials Engineering, and Industrial Design courses.
   - The following courses must be completed with a grade of “C” or better prior to enrollment in 300/400-level CMD courses: CHEM 103, CS 106, CMD 143, IME 102, IME 142, MATH 200.
   - Portfolio reviews at the end of freshman and sophomore years as noted in the "Entrance and Advancement in the Program" section above.

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#### First Semester — 17 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CMD 143</td>
<td>Industrial Design Fundamentals Studio</td>
<td>3</td>
</tr>
<tr>
<td>ART 101</td>
<td>Foundation Drawing</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 103</td>
<td>General Chemistry (AREA VII)</td>
<td>4</td>
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<tr>
<td>IME 102</td>
<td>Technical Communication (Prof. 1)</td>
<td>3</td>
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<tr>
<td>MATH 118</td>
<td>Precalculus Mathematics (Prof. 3)</td>
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**Second Semester — 18 hours**

<table>
<thead>
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<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CMD 147</td>
<td>Principles of Industrial Form</td>
<td>2</td>
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<tr>
<td>ART 102</td>
<td>Foundation 2D Design</td>
<td>3</td>
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<tr>
<td>ART 153</td>
<td>Theory of Art</td>
<td>3</td>
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<tr>
<td>CS 106</td>
<td>BASIC for Engineers</td>
<td>1</td>
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<tr>
<td>IME 142</td>
<td>Engineering Graphics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 200</td>
<td>Calculus with Applications (Prof. 4)</td>
<td>4</td>
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<tr>
<td>AREA VIII</td>
<td>Health and Well-Being</td>
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**Third Semester — 17 hours**

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CMD 243</td>
<td>Product Design</td>
<td>2</td>
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<tr>
<td>CMD 132</td>
<td>Wood Product Design</td>
<td>3</td>
</tr>
<tr>
<td>CMD 201</td>
<td>History of Design I</td>
<td>3</td>
</tr>
<tr>
<td>CMD 203</td>
<td>Color in Industrial Design</td>
<td>3</td>
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<tr>
<td>ART 245</td>
<td>Graphic Design</td>
<td>3</td>
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<tr>
<td>IME 150</td>
<td>Introduction to Manufacturing (AREA VII)</td>
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**Fourth Semester — 17 hours**

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<thead>
<tr>
<th>Course</th>
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<th>Hours</th>
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<tbody>
<tr>
<td>CMD 343</td>
<td>Advanced Product Design Studio</td>
<td>3</td>
</tr>
<tr>
<td>CMD 305</td>
<td>Model Construction Studio I</td>
<td>3</td>
</tr>
<tr>
<td>CMD 301</td>
<td>Computer Aided ID Studio I</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 250</td>
<td>Marketing Principles</td>
<td>3</td>
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<tr>
<td>AREA III*</td>
<td>U.S. Culture and Issues*</td>
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**Sixth Semester — 18 hours**

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<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CMD 347</td>
<td>Product Design Practicum Studio</td>
<td>3</td>
</tr>
<tr>
<td>CMD 230</td>
<td>Advanced Manufacturing, Woodworking</td>
<td>3</td>
</tr>
<tr>
<td>CMD 302</td>
<td>Computer Aided ID Studio II</td>
<td>3</td>
</tr>
<tr>
<td>ART 220</td>
<td>History of Art (AREA I)</td>
<td>3</td>
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<tr>
<td>ECON 251</td>
<td>Principles of Economics (AREA V)</td>
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<tr>
<td>MGMT 345</td>
<td>Management Elective</td>
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**Seventh Semester — 16 hours**

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<th>Course</th>
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<tbody>
<tr>
<td>CMD 443</td>
<td>ID Thesis and Project I (Prof 2)</td>
<td>3</td>
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<tr>
<td>ART 240</td>
<td>Painting I</td>
<td>3</td>
</tr>
<tr>
<td>IME 250</td>
<td>Plastics Properties and Processing</td>
<td>3</td>
</tr>
<tr>
<td>IME 442</td>
<td>Ergonomics and Design</td>
<td>3</td>
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<td>AREA II*</td>
<td>Humanities</td>
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**Eighth Semester — 13 hours**

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CMD 447</td>
<td>ID Thesis and Project II (Prof 2)</td>
<td>3</td>
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<tr>
<td>CMD/IME- Approved Elective</td>
<td>3</td>
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<tr>
<td>ART 248</td>
<td>Photography</td>
<td>3</td>
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<tr>
<td>ART Approved Art Studio Elective</td>
<td>3</td>
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<tr>
<td>AREA IV*</td>
<td>Other Cultures/Civilizations</td>
<td>4</td>
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</tbody>
</table>

*At least two of these courses must be at the 300-400 level.
Materials Engineering

Bachelor of Science in Engineering (Materials) Degree

The materials engineering curriculum is a program of study designed to provide the student with knowledge and expertise in the wide area of materials, metals, polymers, ceramics, and composites.

Baccalaureate Writing Requirement
Students who have chosen the Materials Engineering curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing CMD 483 Project Design and Control and CMD 485 Senior Project.

Requirements
Candidates for the Bachelor of Science in Engineering (Materials) degree must satisfy the following requirements in addition to University requirements stated elsewhere in this catalog:

1. To satisfy professional engineering accreditation requirements, all students must complete a sequence of two courses (minimum of six credit hours in the humanities, fine arts, social sciences, and/or behavioral sciences). The sequence must begin with a 100-200 level course and conclude with a course at the 300-400 level. Both courses must have the same course prefix, must provide depth, and must not be a selection of unrelated introductory courses. The sequence may be selected from General Education Areas I, II, III, IV, and/or V as part of the University General Education requirements. If the University General Education requirements have been otherwise satisfied, the sequence may be from any of the humanities, fine arts, social science, and/or behavioral sciences.

2. A "C" average or better must be earned in courses presented for graduation with an ECE, IME, CMD, or ME prefix.

3. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.

4. Complete the following program of 126 semester credit hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall. Pre-engineering requirements are in darker numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture-hours, or lab-hours). The first digit of a course number indicates level of work while the second digit indicates areas of study as follows:

   0 and 4. General Design
   3. Construction and Woods
   5. and 7. Materials
   8. General
   9. Special

CMD 131 Introduction to the Construction Environment (3–0)
3 hrs.

The knowledge and awareness acquired in this course will allow students to better appreciate the importance of the construction environment around us. The course provides a broad view of the legal, social, economical, and technical considerations necessary to the effective development of various structures. It exposes the students to global challenges such as increasing population, climatic conditions, energy efficiency in construction environments, functional efficiency of building structures, cost reduction, appropriate materials and technology.

CMD 132 Wood Processing (2–3) 3 hrs.
Identification of selected wood species and man-made composites. Basic principles of wood product design are introduced. Aesthetic and ergonomic criteria will be emphasized. Selection of materials, basic processes and tools, introduction to machining and selection and application of finishing materials is taught. Preparation of Industrial Design documentation is required, i.e. 3D, orthographic and working drawings of the product and its parts.

CMD 143 Industrial Design Fundamentals Studio (1–4)
2 hrs.
An introduction to the professional practice of Industrial Design. Topics include social and economic motives for designing; evolution of style in mass-produced products, orthographic, isometric, perspective, and model representation. Students will work on simple creative projects involving one to three objects and will learn basic methodology principles with emphasis on research and problem identification.

CMD 147 Principles of Industrial Form Studio (0–4)
2 hrs.
Industrial form's dependence on materials, tools and machine processes. Industrial and natural form generation. Experiments on static structures. Creative projects involving simple objects. Prerequisites: ART 101, CMD 143, Portfolio Review, or permission of the instructor.

CMD 149 Introduction to Architectural Drawing (2–3)
3 hrs.
Introduction to the tools and techniques to enable the student to read, compose, and create architectural drawings related to interior design and construction.

CMD 201 History of Design I (3–0) 3 hrs.
This course is an introduction to the relationship between design and the history of culture and technology before the 20th century. Art, architecture, craft, and design. History of styles.

CMD 202 History of Design II (3–0) 3 hrs.
Design history of the 20th century. Important social and technical developments which have influenced industrial priorities, markets and practices. Important people, movements, schools, and philosophies that have influenced the evolution of Industrial Design and related professions. The specific character of I.D. history in different European, Asian, and American countries. Prerequisite: CMD 201 or permission of the instructor.

CMD 203 Color in Industrial Design (2–2)
3 hrs.
Develop through experience an understanding of color, color action and color relationships. Interaction of color, form, materials, proportion, function and composition, color and information, color and signage. Application of this knowledge to Industrial Design problem solutions. Prerequisite: CMD 147.

CMD 206 Model Construction Studio 1 (0–6) 3 hrs.
Development of fast, simple mock-ups and form studies using clay, paper, plastic foam, wire, plaster and other materials. Creation of realistic looking models which reflect a high degree of craftsmanship. Use of hand tools.
power tools and machines. Use of plastic foam, plastics, wood and metal.

CMD 230 Machine Woodworking (2–3)
3 hrs.
Creation of new wood products based on functional, ergonomic, aesthetic and strength needs. Environmental aspects of the processes applied in the design will be analyzed. Basic cutting theories, woodworking machine construction, and advanced manufacturing lines including the 32mm construction system and flat-line processing application will be taught. Industrial Design documentation will be required. Prerequisite: CMD 132.

CMD 233 Construction Codes and Specifications (3–0)
3 hrs.
Application of model codes to residential and commercial structures, nonstructural and structural plan review, fire codes, codes governing the installation of the electrical, plumbing and heating elements of the building, inspection techniques, and code administration. Prerequisite: CMD 131.

CMD 236 Construction Measurements and Layout (2–3)
3 hrs.
Construction surveying, building layout and structural alignment. Includes route alignment, topographic surveys, earthwork volume surveys, and preparation of reports. Prerequisites: CMD 149, IME 102, MATH 200.

CMD 237 Concrete Construction and Masonry (2–3)
3 hrs.
Design and control of concrete mixtures. Form design, control tests for quality concrete, and reinforced concrete problems are practiced. Pre-stressed and post-tensioned concrete construction is included. Masonry skills involving block, brick, and stone and concrete construction practices are performed on a job site. Prerequisites: CMD 131, CMD 235.

CMD 238 Construction Materials and Methods (2–3)
3 hrs.
The course will focus on the study of different construction materials. Design and control of concrete mixtures will form a major part of the course. Evaluation of physical and mechanical properties of important construction materials will also be included. Introduction to practical construction methods for residential, commercial, and heavy construction will be provided. Prerequisites: CMD 131, CMD 149, ME 257.

CMD 243 Product Design Methodology Studio I (0–4)
2 hrs.
Introduction to product design methodology for mass-produced products. Human factors criteria in analysis and design. Application of user behavior research, anthropometric data and basic manufacturing processes to product concept ideation. Two- and three-dimensional communication techniques for design presentation. Prerequisites: CMD 147, Portfolio Review.

CMD 247 Product Design Methodology Studio II (0–4)
2 hrs.
Design of product systems based on societal needs, human factors analysis and advanced manufacturing processes. Written and visual communication techniques for presentations. Prerequisites: CMD 243, CMD 201 and CMD 203.

CMD 251 The Evolution of Materials (3–0)
3 hrs.
The evolution of materials from the stone age, through the bronze and iron age, will be described. Understanding of eras in history through the progression of materials. Advanced materials from the current period ("The Material's Age") with applications for miniaturized computers ("lap-top"), space shuttle, bio-compatible materials for implants in the human body, and construction of buildings, roads and bridges. Prospects for the future will be discussed. Prerequisites: High school math through trigonometry (or MATH 118), a basic chemistry course or physics.

CMD 254 Properties of Materials (3–0)
3 hrs.
Internal structure of materials in relation to microscopic and macroscopic properties. Mechanical, physical, chemical and thermal properties of wood, metals, ceramics, polymers, semiconductors, and composites. Environmental degradation of materials. Prerequisites: MATH 200 or 122, CHEM 101, 102, or 103. Not for Engineering credit.

CMD 255 Materials Science Laboratory (0–3)
1 hr.
Basic nature of materials in relation to microscopic and macroscopic properties, mechanical testing techniques, different techniques in strengthening metals, impact strength of plastics, corrosion. Prerequisite: CMD 254 when offered concurrently. Not for Engineering credit.

CMD 257 Non-Metallic Materials (1–0)
1 hr.
Chemical, electrical, mechanical, and physical properties of non-metallic materials; wood, ceramics, polymers, and composites. This course is intended to supplement transfer courses in metallurgy for the completion of CMD 256 requirements. Prerequisites: CHEM 103, PHYS 107/108 or PHYS 113/114, MATH 200 or MATH 122, and an approved metallurgy course.

CMD 301 Computer-Aided Industrial Design Studio I (0–6)
3 hrs.
Introduction to the advanced professional computer-aided Industrial Design hardware and software. Students will start with a CAD wire-frame to create a photo realistic computer model and rendering. Application of these processes in computer-aided manufacturing and interactive software design. Introduction to a variety of software programs will be made. Prerequisite: IME 246.

CMD 302 Computer-Aided Industrial Design Studio II (0–6)
3 hrs.
Continuation of study with the hardware and software used in Industrial Design. Animation and presentation software. Product development using only the computer. Prerequisites: CMD 301.

CMD 305 Model Construction Studio II (0–6)
3 hrs.
Building working prototypes of simple devices and systems. Creation of advanced models with real finish. Use of advanced processes and materials. Prerequisite: CMD 206.

CMD 330 Wood and Related Materials for the Interior Designer (2–3)
3 hrs.
A study of the physical and mechanical properties of wood and wood-based materials, joint design, adhesives and fasteners, and selection and application of finishes. The effect of human factors on the design of furniture and interiors is emphasized.

CMD 331 Upholstering and Wood Turning (2–3)
3 hrs.
Determination of ergonomic, structural, and material requirements for upholstered furniture. Multiple upholstery methods will be applied. Evaluation of cutting theory, wood, and tool selection for turning. Prerequisite: CMD 230.

CMD 332 Wood Finishing (2–3)
3 hrs.
Function of various finishing materials, surface preparation, principles of color, methods of application and final finishing. Environmental regulations pertaining to furniture finishing. Scheduling, repair, and refinishing applications will be studied. Prerequisite: CMD 152 and CHEM 103.

CMD 335 Soil Mechanics and Foundations (2–3)
3 hrs.
Properties of soil and earth materials, soil identification, use of soils as a building and foundation material, compaction of soils, and an introduction to bearing capacities and spread footings. Foundation analysis will include, drilled piers, caissons, lateral earth pressures, and soil pressure distribution. Prerequisites: CMD 237, IME 281, GEOL 130.

CMD 336 Soil Mechanics and Foundation Design (2–2)
3 hrs.

CMD 338 Mechanical/Electrical Systems (2–3)
3 hrs.
Selection of plumbing, electrical, heating, ventilation and air conditioning systems for commercial, industrial, and institutional buildings. Includes estimating costs of these systems and proper construction techniques of installation. Prerequisites: CMD 131, CMD 149, CS 105, PHYS 115 and 116.

CMD 343 Advanced Product Design Studio (0–6)
3 hrs.
Design of product systems based on societal needs, human factors analysis and advanced manufacturing processes. Study of basic types of business organizations: sole proprietorships, partnerships and corporations. Study of legal considerations related to patents, copyrights, trademarks and trade secrets. Introduction to professional ethics. Prerequisites: CMD 247, CMD 202, CMD 206, Portfolio Review.

CMD 347 Product Design Practicum Studio (0–6)
3 hrs.
Developing company-oriented products and systems for commercial and industrial markets balancing between corporate and user needs. Prerequisites: CMD 343, CMD 305.

CMD 353 Physical Metallurgy (4–0)
4 hrs.
Introduction to electron theory of metals. Introduction to crystallography and x-ray diffraction, defect structure of metals and their application to solid state diffusion. Prerequisites: MATH 123 or MATH 200, PHYS 113 or PHYS 205, ME 258, Portfolio Review.

CMD 385 Theory of Structural Design (3–0)
3 hrs.

CMD 386 Structural Analysis and Design (3–0)
3 hrs.
Introduction to the field of structural engineering. Analysis and design of basic structural elements (beams, columns, and trusses). Develop an understanding of how structural systems behave under loads. Prerequisites: CMD 208, CMD 256, ME 257, ME 258.
CMD 431 Construction Planning and Scheduling (3-0) 3 hrs.
Construction Planning and control of construction projects are discussed.
Scheduling techniques such as the critical path method (CPM) and the program evaluation and review technique (PERT) are covered. A scheduling software will be used. Prerequisites: CMD 238, MGMT 261.

CMD 432 Production Woodworking (2–3) 3 hrs.
Mass production techniques utilizing computer-aided design and manufacturing, material yield, production planning, sequence of operation, dimensional control, and interchangeability. Production methods as they affect quality of wood products. Prerequisite: CMD 230.

CMD 433 Specifications and Estimating (3–0) 3 hrs.
Reading and interpretation of the contract documents for construction. Plans and specifications will be performed. Estimating techniques and estimating methods to different types of structures and projects will be covered. Estimating quantities and listing of work items in a standard quantity survey will be practiced. Computer application in construction estimating will be emphasized. Prerequisites: CMD 335, CMD 338.

CMD 434 Physics and Mechanics of Wood 3 hrs.
Physical and mechanical properties of wood and orthotropic wood structure will be studied and incorporated in the ASTM testing methods. Analysis of stress distribution, mode failure, and fracture characteristics will be studied. The relationship among orthotropic wood structure, joint design, and fastening methods on structural integrity will be analyzed. Computer systems will be used in statistical analysis and graphing of experimental data. Prerequisite: CMD 132 or department approval.

CMD 435 Commercial Construction Methods (3–0) 3 hrs.
An introduction to the principles and practices that are peculiar to heavy construction. Covers excavating equipment, cranes, dewatering, drainage, and paving. Erection methods of commercial buildings will be studied. Structural steel frame practices, vertical transportation, curtainwalls, and membrane type roofs are included. Prerequisites: CMD 335, CMD 385.

CMD 436 Construction Estimating, Bidding, and Cost Control (4–0) 4 hrs.
Discussion of the procedures of preparing construction specifications and contracts. Material quantity takeoffs. Labor, material, equipment, and overhead costs will be discussed. Estimating software will be used. Elements of cost controls will also be discussed. Prerequisites: CMD 236, CMD 238, CMD 336.

CMD 437 Advanced Estimating and Bidding (3–0) 3 hrs.
An analysis and determination of construction operations including applicable indirect and overhead costs and the preparation of bid proposals for construction costs. Costs for equipment, labor, materials, subcontracts, and general conditions will be discussed. Preparation of construction bid packages using plans and specifications will be performed. Prerequisite: CMD 433.

CMD 438 Construction Project Management (3–0) 3 hrs.
Study characteristics of construction industry, project organizations, labor, material, and equipment utilization, construction productivity, value engineering, TQM, constructability, construction safety, contract types, and contract bonds. Prerequisites: CMD 431, CMD 436, MGMT 301.

CMD 439 Scheduling and Project Management (3–0) 3 hrs.
The planning and control of construction projects. Construction scheduling techniques such as critical path methods (CPM) and program evaluation and review (PERT) as well as computerized graphic techniques will be practiced. Management principles as applied to the construction contractor will be emphasized. Prerequisites: CMD 433, MATH 216, MGMT 301.

CMD 440 Reinforced Concrete Design (3–0) 3 hrs.
Principles of design and analysis of reinforced concrete members subjected to moment, shear, and axial loads. Concrete members include rectangular and tee beams, short and slender columns, and one-way slabs. Prerequisite: CMD 386.

CMD 443 Industrial Design Thesis and Project Studio I (0–6) 3 hrs.
A two-semester course using the knowledge and abilities acquired throughout the curriculum. The first course focuses on Industrial Design related research based on user needs, environmental and social problems and on industry trends and developments. Advanced investigations in the student's area of professional specialization chosen in consultation with the faculty advisor of Industrial Design. Study and use of research techniques, report writing and design methodology. Prerequisites: CMD 347, MATH 246.

CMD 447 Industrial Design Thesis and Project Studio II (0–6) 3 hrs.
In the second term of this course the student uses problem-solving principles and Industrial Design communication methodology to organize and present a faculty approved Senior Project. The concept is presented in verbal, graphic and three-dimensional both virtual and real. The Final Presentation involves use of photography, graphics, illustration, exhibit design, computer-aided design, video production and other media. Prerequisites: CMD 443, MATH 442.

CMD 450 Engineering Polymers and Composites (2–3) 3 hrs.

CMD 457 Mechanical Behavior of Materials (3–0) 3 hrs.
Fundamentals of elasticity and plasticity theory. The mechanical and thermo-mechanical forming methods of materials. Prerequisites: CMD 254, MATH 281, MATH 283, MATH 284, department approval for EE and CSE students.

CMD 471 Thermodynamics of Materials (4–0) 4 hrs.
Introduction to chemical metallurgy, thermodynamic functions associated with compounds, diffusion, phase equilibria and phase diagrams, extractive metallurgy, chemistry of ceramics. Prerequisites: MATH 250, CHEM 430.

CMD 475 Microstructure of Polymers and Ceramics (3–0) 3 hrs.
Microstructure and physical properties. Microstructure of amorphous and crystalline polymers, solutions and gels, networks and blends, silicate ceramics, glasses, carbon based ceramics, and metal-ceramics composites. Prerequisites: PHYS 205, CMD 471, GEOL 335, CMD 450.

CMD 476 Failure Analysis and Corrosion (2–3) 3 hrs.
Theory, design implications and case studies in the following areas: elastic deformation, plastic deformation, creep, fracture, fatigue, corrosion and oxidation. A technical paper based on a project will be submitted at the end of the course. Prerequisites: CMD 471, CMD 353, MATH 261, MATH 272, MATH 374.

CMD 483 Project Design and Control (1–0) 1 hr.
Problem definition, project planning and scheduling, follow-up and control techniques. Results in presentation and plan for senior project. Prerequisites: Senior status and department approval.

CMD 485 Senior Project (1–6) 3 hrs.
Open-ended team projects involving systems design, analysis, or application. Results in a tangible system, written report and presentation. Prerequisites: CMD 483 and approved project.

CMD 495 Topics in Engineering (Var.) 1–6 hrs.
A specialized course dealing with some particular area of technology not usually included in other course offerings. May be repeated for credit with different topics to a maximum of six credit hours. Prerequisite: Consent of department.

CMD 499 Independent Studies (Var.) 1–3 hrs.
An individual study program to supplement regular course work, arranged in consultation with a study supervisor. This course may not exceed six credit hours. May be repeated not to exceed six credit hours. Prerequisite: Consent of department.

CMD 530 Construction Project Delivery Systems (3–0) 3 hrs.
A comprehensive coverage of the standard contracts between various agencies involved in construction will be described in the course. Analysis of traditional and current project delivery methodologies will also be presented. Issues related to insurance and bonding in the construction industry will be highlighted. Advanced topics such as alternative dispute resolution will also be covered. Prerequisites: CMD 436 or equivalent, and departmental approval.

CMD 531 Advanced Construction Project Management (3–0) 3 hrs.
The course will build on the information that is normally provided to students in the undergraduate construction management courses on planning and control of construction projects. The focus of this course will be to provide the students knowledge of quantitative tools that can be used in planning and controlling construction projects. Topics to be covered will include cash flow forecasting.
site planning, site administration, risk analysis, contract documents and contracts administration. Advanced planning tools such as line of balance, velocity diagrams, time-cost trade off, resource planning with applications to construction projects will also be discussed.

Prerequisites: CMD 431, CMD 436 and CMD 438 or equivalent, and department approval.

CMD 532 Wood Science and Engineering

(2-2)

3 hrs.

Scientific study of dendrology and forest products industry. A study of the relationship between the macro and microscopic structure in wood and wood-based composites as they relate to Engineering Design. Laboratory activities will involve machining theory, wood fluid relationships and wood stabilization.

Prerequisites: MATH 374, PHYS 207, ME 250, and consent of instructor.

CMD 559 Physical and Mechanical Properties of Polymers

(3-0)

3 hrs.


CMD 566 Ceramics: Structure and Properties

(2-2)

3 hrs.

Ceramic crystalline structure. Structure imperfections, deformation and failure of ceramic materials. Processing, properties, and toughness: fiber mechanisms. Design with and applications of ceramic materials.

Prerequisites: MATH 374, PHYS 207, ME 250, and consent of instructor.

ELECTRICAL AND COMPUTER ENGINEERING

S. Hossein Mousavinezhad, Chair
Johnson Asamadu
Sanjeev Baskiyyar
Raghvendra Gejji
John W. Gesink
Janos Grantner
Garrison W. Greenwood
Dean Johnson
Joseph Kelemen
John L. Mason
Damon Miller
Frank Severance
Lambert R. VanderKooi

The Department of Electrical and Computer Engineering (ECE) offers two B.S.E. programs and two M.S.E. programs in electrical or computer engineering.

The undergraduate programs described here provide engineering education in the field of electrical and computer engineering to prepare graduates for careers in many kinds of work, including construction, consulting, design, development, manufacturing, planning, research, sales, service, and teaching.

Electrical engineering areas of specialization can include: electronics (design of integrated circuits or their applications in medicine, space, or industry), computer systems (such as those used in aircraft, missiles, spacecraft, or robots), instrumentation (remote measurement from satellites or spacecraft), power systems (generation and distribution of electrical energy), and communication systems (telephone, radio, and television).

Computer engineers may specialize in: automation (computer control of machinery, assembly, or other manufacturing processes), computer-aided design systems (where part of the design process is carried out by computer), speech/pattern recognition and digital signal processing, data communication (e.g., between computers, computer peripherals (sensors, terminals, displays, printers, readers, and other input/output devices), and microcomputers with their applications.

In ECE programs, you will study math, general education subjects, the basic sciences, engineering sciences, and design, and you will practice communicating your ideas orally and in writing. In the electrical engineering program, you will also learn about circuits, digital logic, digital signal processing, electric power, electromagnetics, electronics, energy conversion, computers and microcomputers, communications, instrumentation, and automatic control systems.

In the computer engineering program, you will also become familiar with analysis, design, and application of electronic digital computers and systems, including the architecture and physical construction (hardware) of digital computers, and programming (software) aspects of computers and digital systems. The computer engineering curriculum also includes courses in circuits, electronics, linear systems, and digital signal processing.

Cooperative Education

Students may elect the cooperative plan of education. In this plan, the student alternates a semester of study on campus with a semester of compensated industrial experience. Students may work in any area in which computer engineers or electrical engineers may be found.

Academic Advising

Students should contact the electrical/computer engineering academic advisor as early as possible. The academic advisor is available to assist in individual program planning, to recommend electives appropriate to a student's educational objectives, to discuss employment opportunities and to help solve academic problems. Substitutions and transfer credit must be approved by a departmental advisor, curriculum committee, and department chair. The academic advisor is located in Room 2038, Homer Hall, (616) 387-4033.

Additional Information

General information regarding advising, scholarships, and special programs of interest to students in this department may be found under the beginning of the Engineering and Applied Sciences section of the catalog.

Enrollment will not be honored in any course when other students are requesting that course if the student does not attend the first class meeting (lecture or lab) unless prior arrangements have been made with the instructor or chair. Students not attending courses are responsible for processing drop slips with the Registration Office if fees are to be refunded.

Prerequisites are designed to both increase the probability of successful completion of each course as well as to insure the proper conduct of the course. Prerequisites will be strictly enforced in all departmental courses. Exceptions must be approved by the department no later than the end of the add period of the semester or session.

Baccalaureate Writing Requirement

Students who have chosen the Computer Engineering program or the Electrical Engineering program will satisfy the Baccalaureate Writing Requirement by successfully completing both ECE 481 Electrical/Computer Engineering Design I and ECE 482 Electrical/Computer Engineering Design II.

Computer Engineering

Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

Candidates for the Bachelor of Science in Engineering (Computer) degree must satisfy the following requirements in addition to those required by Western Michigan University:

1. To satisfy professional engineering accreditation requirements, all students must complete a sequence of two courses (minimum of six credit hours) in the humanities, fine arts, social sciences, and/or behavioral sciences. The sequence must begin with a course at the 100-200 level and conclude with a course at the 300-400 level. Both courses must have the same course prefix, must provide depth, and must not be a selection of unrelated introductory courses. The sequence may be selected from General Education Areas I, II, and/or IV as part of the University General Education requirements. If the University General Education requirements have been otherwise satisfied, the sequence may be from any of the humanities, fine arts, social sciences, and/or behavioral sciences.

2. A grade point average of 2.0 or better must be earned in courses presented for graduation with ECE, IME, and ME prefixes.
Electrical Engineering Program

Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

Candidates for the Bachelor of Science in Engineering (Electrical) degree must satisfy the following requirements in addition to those required by Western Michigan University:

1. To satisfy professional engineering accreditation requirements, all students must complete a sequence of two courses (at least six credit hours) in the humanities, fine arts, social sciences, and/or behavioral sciences. The sequence must begin with a course at the 100-200 level and conclude with a course at the 300-400 level. Both courses must have the same course prefix, must provide depth, and must not be a selection of unrelated introductory courses. The sequence may be selected from General Education Areas I, II, and/or IV as part of the University General Education requirements. If the University General Education requirements have been otherwise satisfied, the sequence may be from any of the humanities, fine arts, social sciences, and/or behavioral sciences.

2. A grade point average of 2.0 or better must be earned in courses presented for graduation with ECE, IME, and/or ME prefixes.

3. No more than two grades of “D” or “DC” in courses presented for graduation may be counted for graduation.

4. The following program of 130 semester credit hours must be completed. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall. Pre-engineering requirements are in darker italic print.

First Semester — 16 hours
MATH 122 Calculus I 4
CHEM 101 102 General Chemistry 4
IME 102 Technical Communication 3
ECE 250 Digital Logic I 3
AREA VIII Health and Well-being 2

Second Semester — 16 hours
MATH 123 Calculus II 4
PHYS 205 Mechanics and Heat 4
PHYS 206 Mechanics and Heat Lab 1
CS 111 Computer Science I 4
AREA I Fine Arts* 3

Third Semester — 16 hours
MATH 272 Vector and Multivariate Calculus 4
PHYS 207 Electricity and Light 4
PHYS 208 Electricity and Light Lab 1
CS 112 Computer Science II 4
AREA II Humanities* 3

Fourth Semester — 18 hours
MATH 374 Introduction to Linear Algebra and Diff. Equations 4
ECE 210 Circuit Analysis 4
ECE 221 Electronics I 4
IME 310 Engineering Economy 3

Fifth Semester — 16 hours
ECE 221 Electronics I 4
ECE 310 Network Analysis 3
ECE 351 Engineering of Real Time Systems 3
ECE 355 Digital Logic II 3
IME 316 Report Preparation 3

Sixth Semester — 16 hours
ECE 350 Digital Electronics 4
ECE 357 Computer Architecture 3
ECE 451 Digital Systems II 4
ECE 453 Probabilistic Methods in Signal Systems Analysis 3
CS 331 Data and File Structures 3

Seventh Semester — 17 hours
ECE 481 Electrical/Computer Engineering Design I 4
ECE 371 Linear Systems 3
CS 485 Programming Languages 3
ME 458 Engineering Science Elective 3
AREA III The United States: Cultures and Issues 3
AREA IV Other Cultures and Civilizations* 3

Eighth Semester — 15 hours
ECE 455 Digital Signal Processing 3
CS 554 Operating Systems 3
ECE 492 Electrical/Computer Engineering Design II 3
AREA V Social and Behavioral Sciences* 4
Departmental Approved Electives** 2

*At least two courses in General Education must be at the 300-400 level. Item "1" above must also be satisfied.

**See the Electrical and Computer Engineering Advisor.

Sixth Semester — 17 hours
ECE 320 Electronics II 4
ECE 330 Electrical Machinery 4
ECE 371 Linear Systems 3
ECE 380 Probabilistic Methods in Signal Systems Analysis 3
IME 316 Report Writing 3

Seventh Semester — 17 hours
ECE Electrical Engineering Elective Group*** 3
ECE 481 Electrical/Computer Engineering Design I 4
IME 310 Engineering Economy 3
ME 258 Dynamics 3
AREA IV Other Cultures and Civilizations* 3

Eighth Semester — 16 hours
ECE Electrical Engineering Elective Group*** 3
ECE 482 Electrical Engineering Elective Group*** 3
ME Engineering Science Elective*** 3
AREA V Social and Behavioral Sciences* 4
Departmental Approved Electives** 3

**See Electrical and Computer Engineering Advisor for a list of approved electives.

***Electrical and Computer Engineering Elective Group

ECE 420 Power Electronics 3
ECE 430 Electrical Power Systems 3
ECE 451 Digital Systems II 4
ECE 455 Digital Signal Processing 3
ECE 460 Communication Systems 3
ECE 470 Feedback Systems 3
Other 400 or 500 level Electrical Engineering courses may be used in place of the above courses if PRIOR approval is obtained from the Electrical and Computer Engineering Advisor and Department Chair.

ECE 100 Fundamentals of Circuits and Electronics (2-3) 3 hrs.
Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-laboratory hours).

ECE 100 Fundamentals of Circuits and Electronics (2-3) 3 hrs.
Basic principles of electricity, magnetic devices, and electronics. May not be used as prerequisite for other ECE courses except 101. Cannot be used as credit in engineering curricula. Prerequisites: MATH 111 or equivalent and high school physics.

ECE 101 Fundamentals of Electronics and Machines (2-3) 3 hrs.
Basic principles, characteristics, and applications of semiconductor devices, AC machines, and DC machines. May not be used as prerequisite for other ECE courses. Cannot be used as credit in engineering curricula. Prerequisite: ECE 100.

ECE 210 Circuit Analysis (3-3) 4 hrs.
Analysis of linear electric circuits using methods based on Kirchhoff's laws and network theorems. RL, RC, and RLC transients. Sinusoidal steady state analysis. Prerequisites: PHYS 207 or taken concurrently, MATH 123.
ECE 211 Machines and Electronic Circuits (2–3) 3 hrs.
Introduction to machines and electronics for non-electrical engineering students. Principles of operation, characteristics, ratings, and applications of transformers, alternators, motors, diodes, and transistors. ECE and CSE students may not use credit in ECE 211 toward graduation. Prerequisite: ECE 210.

ECE 212 Electronic Circuits and Systems (3–0) 3 hrs.
DC and AC analysis of linear electric circuits. Simple first and second order transients. Analog signals and instrumentation. Applications of operational amplifiers. The first course in a two-course sequence for non-electrical engineering majors. Prerequisites: PHYS 207 or taking concurrently, MATH 374.

ECE 221 Electronics I (3–3) 4 hrs.
Analysis and design of electronic circuits and systems, diode circuits, transistor biasing and stabilization, small and large signal models. Computer-aided analysis and design of multi-stage circuits. Prerequisites: ECE 210, PHYS 207.

ECE 250 Digital Logic I (2–3) 3 hrs.
Analysis and design of combinational and sequential logic systems. Prerequisite: MATH 111 or equivalent.

ECE 251 Digital Systems I (3–3) 4 hrs.
Machine and assembly language programming of small computers. Introduction to microcomputer architecture and interfacing. Prerequisites: ECE 250, CS 106 or CS 111 or CS 306.

ECE 310 Network Analysis (3–0) 3 hrs.
Classical and transform methods of network analysis, signals and waveforms. Fourier series and Fourier transforms. Frequency response. Prerequisites: ECE 210, CS 111 or CS 306, MATH 374, PHYS 207.

ECE 312 Fundamentals of Electronics and Machines (2–3) 3 hrs.
Fundamentals of operation, characteristics, ratings, and applications of electronic and magnetic devices such as diodes, transistors, digital logic devices, transformers and motors. Laboratory provides experience with actual hardware. This is the second in a two-course sequence for non-electrical engineering majors. Prerequisite: ECE 212.

ECE 320 Electronics II (3–3) 4 hrs.
Analysis, design, and construction of modern electronic circuits using solid-state devices and integrated circuits. Field effect transistors, basic logic gates, multivibrators, operational amplifiers, frequency response analysis and photo devices. Prerequisites: ECE 221, ECE 310.

ECE 330 Electrical Machinery (3–3) 4 hrs.
Three-phase analysis. Analysis and design of transformers, electromechanical devices, and machines. Prerequisites: ECE 310, ECE 361.

ECE 350 Digital Electronics (3–3) 4 hrs.
The electrical and logic aspects of digital integrated circuits and their applications. Prerequisites: ECE 221, ECE 250.

ECE 351 Engineering of Real Time Systems (3 hrs.
Characterizing, modeling, and specifying real time systems. Designing, programming and verifying sequential and concurrent real time systems. Software engineering processes in real time system development. Case studies and project using C++. Prerequisites: ECE 251, CS 112.

ECE 355 Digital Logic II (3–0) 3 hrs.
Systems level design of digital logic circuits using hardwired and programmable system controllers. Introduction to asynchronous sequential logic circuits. Prerequisite: ECE 250.

ECE 357 Computer Architecture (3–0) 3 hrs.
Structural organization and hardware design of digital computers. Processing and control units, arithmetic algorithms, input-output systems, and memory systems. Prerequisites: CS 223 or ECE 251.

ECE 361 Electromagnetic Fields (4–0) 4 hrs.
Static and time-varying electric and magnetic fields, plane waves, guided waves, transmission lines, radiation and antennas. Prerequisites: MATH 272, MATH 374, ECE 210.

ECE 371 Linear Systems (3–0) 3 hrs.
Systems and their models, state variable formulation. Convolution, feedback systems and their analysis. S-plane and frequency response. Prerequisite: ECE 310.

ECE 380 Probabilistic Methods of Signal and System Analysis (3–0) 3 hrs.
Introduction to probability, random variables, random processes, correlation functions, spectral density, response of linear systems to random inputs, optimum linear systems. Prerequisite: ECE 310.

ECE 420 Power Electronics (3–0) 3 hrs.
Analysis and design of industrial electronic systems, power sources, motor controls, timing and sequencing circuits. Prerequisites: ECE 250, ECE 320, ECE 330.

ECE 430 Electrical Power Systems (3–0) 3 hrs.
Transmission lines, network analysis, load flow, system faults, fault calculation, transients, and system stability. Prerequisite: ECE 330 or taken concurrently.

ECE 431 Digital Systems II (2–3) 3 hrs.
Analysis and design of microcomputer-based digital systems. Prerequisites: ECE 221, ECE 251.

ECE 455 Digital Signal Processing (3–0) 3 hrs.

ECE 460 Communication Systems (3–0) 3 hrs.
Introduction to digital and analog communication systems. Design constraints of noise and bandwidth, comparison of various modulation techniques, and statistical methods. Information and channel capacity. Prerequisites: ECE 380.

ECE 470 Feedback Systems (3–0) 3 hrs.
Design principles of linear and non-linear feedback systems in both the frequency and time domain. Prerequisites: ECE 371.

ECE 481 Electrical/Computer Engineering Design II (1–3) 2 hrs.
First of a two-semester sequence on engineering design in which students work in teams on approved design projects. A preliminary design is expected at the conclusion of this course. Prerequisite: IME 316; consent of department chair.

ECE 482 Electrical/Computer Engineering Design II (6–0) 3 hrs.
Senior electrical engineering design project. A continuation of ECE 481. A formal written report and a formal presentation is required at the end of the semester. Prerequisite: ECE 481.

ECE 490 Independent Research and Development 1–4 hrs.
Individual research or special project in Electrical Engineering. Open only to juniors and seniors having the approval of the faculty member under whom the student will work and the approval of the department chair. Students may register more than once, not to exceed 4 hours.

ECE 495 Topics in Electrical Engineering 1–4 hrs.
A specialized course dealing with some particular area of electrical engineering not included in other course offerings. May be repeated for credit with a different topic. Prerequisite: Consent of department chair.

ECE 498 Readings in Electrical Engineering 1–4 hrs.
A course in which advanced students may elect to pursue a program of readings in areas of special interest. Prerequisite: Permission of the instructor with whom the student wishes to work and consent of department chair.

ECE 515 Introduction to Real-Time Systems 3 hrs.
Characterizing, modeling and specifying real-time systems. Designing, programming and verifying sequential and concurrent real-time systems. Case studies using Ada, OCCAM, RTIL and Z. Introducing students to problems specific in the engineering of real-time systems with a number of tools used to analyze these systems. Prerequisite: Consent of instructor.

ECE 551 Application Specific Integrated Circuit Design 4 hrs.
Design, analysis and implementation of application-specific circuits (ASIC) Emphasis will be placed on programmable design (including field programmable gate arrays (FPGA) and programmable logic devices (PLD)). Semi-custom design will also be discussed and full-custom design will be briefly introduced. Introduction to contemporary CAD systems. Prerequisites: ECE 350 and ECE 355, or permission of the instructor.

ECE 552 Switching and Finite Automata Theory 4 hrs.
Introduction to the theory and application of switching theory and automata theory. Sets, relations, functions, Boolean and combinational functional composition and optimization. Finite automata theory, Automata composition and optimization. Regular sets and recognizers. Fault tolerance. Prerequisites: ECE 250 and CS 554, or permission of the instructor.

ECE 555 Advanced Digital Signal Processing (3–0) 3 hrs.
Discrete-time signals and systems, time and frequency domain representations. Structures of discrete-time systems and digital filters. DFT and FFT methods of special analysis and estimation. Discrete Hilbert Transforms and multidimensional signal processing. Prerequisite: ECE 455.
ECE 560 Time-varying Fields (3-0)  
3 hrs. Electrodynamics, Maxwell's equations, Boundary value problems and solutions of Helmholtz Equation in different coordinate systems, Green's functions, transmission lines and wave guides. Introduction to perturbational and variational methods. Prerequisite: ECE 361.

ECE 562 Communications in Real-time Embedded Systems  
4 hrs. Introduction to the hardware and software architecture and protocols of communication systems important to real-time embedded system applications. Communication protocol behavior, implementation examples, performance issues and design trade-offs, including bandwidth, response time, memory requirements, errors, reliability, and cost. Prerequisites: ECE 250 and CS 554, or permission of the instructor.

ECE 565 Computer System Performance Modeling for Performance and Reliability Analysis  
4 hrs. Concepts and notation for modeling computer systems, especially as networks of queues and servers. Quantification of model performance using analytic and simulation techniques, hardware and software considerations, small and large systems, free-standing and network systems. Prerequisites: ECE 380 and graduate level competence in computer architecture or computer networking; or permission of instructor.

ECE 570 Digital Control Systems (3-0)  
3 hrs. State variable technique, controllability and observability, digital control system design with state or output feedback, maximum principle, optimal linear regulator-deterministic, and stochastic state observers. Prerequisite: ECE 456.

ECE 580 System Modeling and Simulation  
4 hrs. This is a first course in the principles of mathematical modeling of stochastic and deterministic systems. It will focus on analytical models, mathematical rigor and computer simulation of problems. Students will simulate a number of systems using appropriate stochastic and deterministic models using a computer. This course is cross-listed as ME 580. Prerequisites: ECE 371; ECE 380 or equivalent.

ECE 591 Real-time Embedded System Seminar I  
1 hr. First of a three semester seminar sequence that provides students opportunities to 1) meet with engineering and scientific experts and discuss the theory and practice of RTES design and implementation, and 2) present technical RTES material to a peer group of students and faculty. Prerequisite: Senior standing in computer engineering.

ECE 592 Real-time Embedded System Seminar II  
1 hr. Second of a three semester seminar sequence that provides students opportunities to 1) meet with engineering and scientific experts and discuss the theory and practice of RTES design and implementation and 2) present technical RTES material to a peer group of students and faculty.

INDUSTRIAL AND MANUFACTURING ENGINEERING

Richard E. Munsterman, Chair  
Michael B. Atkins  
Kailash M. Bafna  
Liwana S. Bringelson  
Steven E. Butt  
Paul V. Engemann  
Tycho K. Fredericks  
Tarun Gupta  
Abdolaziz Houshyar  
Michel J. Keil  
Leonard R. Lamberson  
David M. Lyth  
Larry A. Malick  
Sam N. Ramrattan  
Jorge Rodriguez  
Frederick Z. Sitkins  
Ralph Tanner  
James VanDePolder  
Bob E. White  
Larry Williams  
Robert M. Wygant

Adjunct Faculty

John W. Bozzelli  
Cori L. Brown  
Daryle Gardner-Bonneau  
Rathindra Dashgupta  
Nancy A. Foncannon  
John W. Gosbee  
Richard Hartenberger  
Gerald Heide  
Michael Monfore  
Paul Nichols  
Kenneth Rose  
Jay Shoemaker  
Hayden Smith, Jr.  
Darrell L. Trent

The Department of Industrial and Manufacturing Engineering offers the following curricula:

Bachelor of Science—Automotive Engineering Technology
Bachelor of Science in Engineering (Industrial)
Bachelor of Science—Engineering Graphics and Design Technology
Bachelor of Science—Engineering Management
Bachelor of Science—Manufacturing Engineering Technology

Graduates from these programs are employed in a wide variety of positions in both manufacturing and service industries. A minor in manufacturing is available to those students majoring in Industrial Marketing.

Cooperative Education

Students may elect the cooperative plan of education. In this plan, the student alternates a semester of study on campus with a semester of compensated industrial experience. Students may work in their area of study, gaining valuable professional experience.

Academic Advising

Students should contact the Industrial and Manufacturing Engineering departmental advisor as early as possible. The advisor is available to assist in individual program planning, recommend electives appropriate to a student's educational objectives, discuss employment opportunities, and help resolve academic problems. Substitutions and transfer credit must be approved by the advisor, curriculum committee, and department chair. The advisor is located in Room 2038 Kohrmann Hall (616 387-4033). Because of prerequisites and limited offering times, students must consult with an academic advisor for proper course sequence.

Additional Information

General information regarding admissions, advising, scholarships, and special programs of interest to students in this department may be found under the beginning of the Engineering and Applied Sciences' section of the catalog. Enrollment will not be honored in any course when other students are requesting that course and the student does not attend the first class meeting (lecture or lab), unless prior arrangements have been made with the instructor. Students not attending courses are responsible for processing drop slips with the Registration Office if fees are to be refunded. Prerequisites are designed to both increase the probabilities of successful completion of the course as well as to insure the proper conduct of the course. Therefore, prerequisites will be strictly enforced in all departmental courses. Exceptions must be approved by the department no later than the end of the add period of the semester or session.

Automotive Engineering

Technology

Bachelor of Science Degree

The Automotive Engineering Technology curriculum prepares students for positions in supervision or management, sales, and service where technical knowledge of automobile construction and operation is necessary. Automotive engineering technologists work in automotive product development, manufacturing or assembly, testing, certification, distribution, customer relations, and sales of components, systems or vehicles.

Baccalaurate Writing Requirement

Students who have chosen the Automotive Engineering Technology curriculum will satisfy the Baccalaurate Writing Requirement by successfully completing IME 491 Multidisciplinary Senior Proposal and IME 492 Multidisciplinary Senior Project.

Requirements

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to University requirements stated elsewhere in this bulletin:

1. A grade point average of 2.0 or better must be earned in required courses with ECE, CMD, and IME prefixes.
2. No more than two grades of "D" or "DC" in courses listed in this section of the catalog for courses presented for graduation may be counted for graduation credit.
3. Complete the following program of 129 semester credit hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall.
4. Courses listed in this section of the catalog must be completed with a grade point average of 2.0 or better prior to enrolling in upper level Industrial and Manufacturing Engineering courses.
5. The following courses must be completed with a grade point average of 2.0 or better prior to enrolling in the following upper level courses:

- CHEM 103
- ECE 100
- IME 102
- PHYS 115
- MATH 123 or 200
### First Semester — 15 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>IME 121</td>
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<tr>
<td>IME 150</td>
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<tr>
<td>MATH 118</td>
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<tr>
<td>CHEM 103</td>
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### Second Semester — 17 hours

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
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<td>IME 142</td>
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<tr>
<td>MATH 200</td>
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<td>CS 104</td>
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### Third Semester — 17 hours

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
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<tr>
<td>IME 246</td>
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</tr>
<tr>
<td>ECE 100</td>
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<td>COM 104</td>
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### Fourth Semester — 16 hours

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
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<td>IME 281</td>
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<td>ECE 101</td>
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<tr>
<td>MATH 260</td>
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### Fifth Semester — 17 hours

<table>
<thead>
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<th>Course</th>
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<tbody>
<tr>
<td>IME 221</td>
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<td>IME 283</td>
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<td>IME 284</td>
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<td>CMD 254</td>
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<td>CMD 255</td>
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<td>ECON 201</td>
<td>3</td>
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<tr>
<td>AREA I*</td>
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### Sixth Semester — 15 hours

<table>
<thead>
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<td>IME 328</td>
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<tr>
<td>IME 348</td>
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<td>AREA II*</td>
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<td>AREA VII</td>
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### Seventh Semester — 17 hours

<table>
<thead>
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<td>IME 327</td>
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<tr>
<td>IME 491</td>
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<tr>
<td>IME 422</td>
<td>3</td>
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<td>AREA IV*</td>
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### Eighth Semester — 15 hours

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>IME 358</td>
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<tr>
<td>IME 402</td>
<td>3</td>
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<tr>
<td>IME 421</td>
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<tr>
<td>IME 493</td>
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<tr>
<td>AREA III*</td>
<td>1</td>
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</tbody>
</table>

### Engineering Graphics and Design Technology

**Bachelor of Science Degree**

Accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology.

The Engineering Graphics and Design Technology curriculum deals with symbolic communication related to product and tooling activities of industry including documentation methods, graphic science, computer-aided design, industrial processes, and materials. Selection of approved electives allows tailoring the thrust of the program toward metals processing, plastics processing, or production planning/design.

The program prepares students to assume such leadership roles as product designers, documentation and standards supervisors, technical publication specialists, or administrators. They are prepared to enter a variety of jobs such as supervision, quality control, and marketing in manufacturing-related industries.

### Baccalaureate Writing Requirement

Students who have chosen the Engineering Graphics and Design Technology curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing IME 491 Multidisciplinary Senior Proposal and IME 492 Multidisciplinary Senior Project.

### Requirements

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to University requirements stated elsewhere in this bulletin:

1. A grade point average of 2.0 or better must be earned in courses presented for graduation with ECE, CMD, and IME prefixes.
2. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.
3. Complete the following program of 127 semester credit hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall.
4. Courses listed in darker italic print must be completed with a grade point average of 2.0 or better prior to enrolling in upper level Industrial and Manufacturing Engineering courses.
5. The following courses must be completed with a grade point average of 2.0 or better prior to enrollment in 300/400 level courses: CHEM 103, ECE 100, IME 102, PHYS 115, MATH 123.

### First Semester — 17 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>IME 142</td>
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<td>IME 150</td>
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<td>IME 102</td>
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<tr>
<td>MATH 112</td>
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<tr>
<td>CHEM 103</td>
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### Second Semester — 18 hours

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>IME 144</td>
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<td>IME 154</td>
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<td>MATH 123</td>
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### Third Semester — 17 hours

<table>
<thead>
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<tr>
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### Fourth Semester — 15 hours

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<th>Course</th>
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<td>CMD 255</td>
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<td>ECE 101</td>
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<tr>
<td>PHYS 115</td>
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### Fifth Semester — 16 hours

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>IME 250</td>
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<td>IME 348</td>
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<tr>
<td>IME 481</td>
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<td>ECON 111</td>
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<td>ECO 201</td>
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### Sixth Semester — 15 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>IME 346</td>
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<td>IME 358</td>
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<td>IME 482</td>
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<td>IME 491</td>
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### Seventh Semester — 14 hours

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<td>IME 446</td>
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<td>IME 493</td>
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<tr>
<td>IME 494</td>
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### Eighth Semester — 15 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 492</td>
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<tr>
<td>IME 493</td>
<td>2</td>
</tr>
<tr>
<td>IME 494</td>
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</tbody>
</table>

*At least two of these courses must be at the 300-400 level.

### Engineering Management

**Bachelor of Science Degree**

The Engineering Management curriculum provides academic background in humanities, social sciences, communication, and technical subjects relating to manufacturing systems. Human relation skills used in industry dealing with people are developed. The engineering manager may direct production employees working on line operations or may direct staff personnel specifically assigned to assist the line in meeting its objectives. Employment may be in the general areas of manufacturing and service industries.

A selection of a group of courses provides the student an opportunity to concentrate in one of several specialized areas listed below:

### First Semester — 17 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 142</td>
<td>3</td>
</tr>
<tr>
<td>IME 150</td>
<td>3</td>
</tr>
<tr>
<td>IME 102</td>
<td>3</td>
</tr>
<tr>
<td>MATH 112</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 103</td>
<td>4</td>
</tr>
</tbody>
</table>

### Second Semester — 18 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 144</td>
<td>3</td>
</tr>
<tr>
<td>IME 154</td>
<td>3</td>
</tr>
<tr>
<td>MATH 123</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 113</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 114</td>
<td>4</td>
</tr>
<tr>
<td>COM 104</td>
<td>3</td>
</tr>
</tbody>
</table>

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*At least two of these courses must be at the 300-400 level.*
### Sixth Semester — 16 hours
- **IME 328** Quality Assurance and Control
- **IME 404** Plant Layout
- **IME 424** Plant Layout Lab that is
- **IME 422** Engineering Teams: Theory and Practice
- **AREA III** United States: Culture and Issues
- **Technical Elective**

### Seventh Semester — 15 hours
- **IME 322** Safety in Industry
- **IME 403** Labor Relations
- **IME 417** Computer Integrated Manufacturing
- **IME 491** Multidisciplinary Senior Project Proposal
- **Technical Elective**

### Eighth Semester — 12 hours
- **IME 492** Multidisciplinary Senior Project
- **IME 493** Multidisciplinary Senior Project Consultation
- **IME 312** Quantitative Decision Making
- **IME 402** Supervision of Industrial Operations
- **Technical Elective**

### Spring Semester of Senior Year — 6 hours
- **IME 420** Modern Industrial Practices
- **AREA IV** Other Cultures and Civilizations

### Technical Elective Requirements
Twelve hours of approved technical elective courses must be completed to satisfy the requirements for a B.S. degree. At least two of these courses must be at the 300-400 level. Both courses must have the same course prefix, must provide depth, and must be selected from General Education Areas I, II, and/or IV as part of the University General Education requirements. If the University General Education requirements have been otherwise satisfied, the selection may be from any of the humanities, fine arts, social sciences, and/or behavioral sciences. The sequence must begin with a course at the 100–200 level and conclude with a course at the 300–400 level. Both courses must have the same course prefix, must provide depth, and must be a selection of unrelated introductory courses. The sequence may be from General Education Areas I, II, and/or IV as part of the University General Education requirements. If the University General Education requirements have been otherwise satisfied, the selection may be from any of the humanities, fine arts, social sciences, and/or behavioral sciences.

### Industrial Engineering Program Requirements
Candidates for the Bachelor of Science in Engineering (Industrial) degree must satisfy the following requirements in addition to those required by Western Michigan University:

1. To satisfy professional engineering accreditation requirements, all students must complete a sequence of two courses (minimum of six credit hours) in the humanities, fine arts, social sciences, and/or behavioral sciences. The sequence must begin with a course at the 100–200 level and conclude with a course at the 300–400 level. Both courses must have the same course prefix, must provide depth, and must be a selection of unrelated introductory courses. The sequence may be from General Education Areas I, II, and/or IV as part of the University General Education requirements. If the University General Education requirements have been otherwise satisfied, the selection may be from any of the humanities, fine arts, social sciences, and/or behavioral sciences.

2. A grade point average of 2.0 or better must be earned in courses presented for graduation with ECE, IME, and ME prefixes.

3. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.

4. All upper division course work must be taken in residence.

5. Only students in good academic standing as defined by the University will be admitted to this curriculum.

### Industrial Engineering Bachelor of Science in Engineering (Industrial) Degree
Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

The Industrial Engineering curriculum provides the essential foundation, experience, and understanding in science, mathematics, humanities, and engineering so that graduates may find employment in production and service industries. This program is also a basis for graduate study. Industrial engineering involves the design, installation, and improvement of systems integrating people, materials, equipment, and energy. An industrial engineer might work in facilities planning and automation, quality assurance, plant safety, or employee/employer relations. Jobs are available in manufacturing and in service-related industries such as hotels, banks, food, transportation, and hospitals.

### Admission
1. To be admitted to this Engineering curriculum, a student must complete all Pre-engineering requirements with grades of "C" or better. These requirements may be found in the beginning of the Engineering and Applied Sciences' section. The Pre-engineering course requirements for this curriculum are in darker print in the schedule below.

2. Students seeking admission to this curriculum must submit an application following procedures established by the College of Engineering and Applied Sciences. Upper level transfer students may complete an application prior to their first semester of enrollment. Only students in good academic standing as defined by the University will be admitted to this curriculum.

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4. All upper division course work must be taken in residence.

5. Only students in good academic standing as defined by the University will be admitted to this curriculum.

### Baccalaureate Writing Requirement
Students who have chosen the Industrial Engineering curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing IME 316 Report Preparation.

### Admission
1. To be admitted to this Engineering curriculum, a student must complete all Pre-engineering requirements with grades of "C" or better. These requirements may be found in the beginning of the Engineering and Applied Sciences' section. The Pre-engineering course requirements for this curriculum are in darker print in the schedule below.

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<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
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<tbody>
<tr>
<td>First Semester</td>
<td>IME 142 Engineering Graphics</td>
</tr>
<tr>
<td></td>
<td>IME 150 Introduction to Manufacturing</td>
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<tr>
<td></td>
<td>MATH 118 Precalculus Mathematics</td>
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<td></td>
<td>CHEM 103 General Chemistry I</td>
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<td></td>
<td>IME 102 Technical Communication</td>
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<tr>
<td>Second Semester</td>
<td>IME 154 Machining Fundamentals</td>
</tr>
<tr>
<td></td>
<td>MATH 200 Calculus with Applications</td>
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<tr>
<td></td>
<td>CS 104 Introduction C/C++</td>
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<td></td>
<td>PHYS 113 General Physics I</td>
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<td></td>
<td>PHYS 114 General Physics I Lab</td>
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<tr>
<td>Third Semester</td>
<td>IME 246 Introduction to Computer Aided Design</td>
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<tr>
<td></td>
<td>ECE 100 Fundamentals of Circuits and Electronics</td>
</tr>
<tr>
<td></td>
<td>PHYS 115 General Physics II</td>
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<td>PHYS 116 General Physics II Lab</td>
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<td>COM 104 Public Speaking</td>
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<td></td>
<td>ECON 201 Principles of Economics</td>
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<td>Fourth Semester</td>
<td>IME 250 Plastics Properties and Manufacturing</td>
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<td>CMD 254 Properties of Materials</td>
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<td>CMD 255 Materials Science Lab</td>
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<td>IME 281 Statics and Strength of Materials</td>
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<td>ECE 101 Fundamentals of Electronics and Machines</td>
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<td>MATH 260 Elementary Statistics</td>
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<td>Fifth Semester</td>
<td>IME 352 Metal Casting</td>
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<td>IME 283 Thermodynamics</td>
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<td>IME 284 Fluid Mechanics and Hydraulics</td>
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<td></td>
<td>IME 326 Operations Planning and Control</td>
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<td>IME 349 Designing for Production</td>
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<td>IME 357 Fabrication and Pressworking</td>
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<tr>
<td>Sixth Semester</td>
<td>IME 358 Computer-Aided Manufacturing</td>
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<td>IME 320 Engineering Cost Analysis</td>
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<td>IME 328 Quality Assurance and Control</td>
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**Baccalaureate Writing Requirement**

Students who have chosen the Manufacturing Engineering Technology curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing IME 491 Multidisciplinary Senior Proposal and IME 492 Multidisciplinary Senior Project.

**Requirements**

1. A grade point average of 2.0 or better must be earned in required courses with ECE, CMD, ME, and IME prefixes.
2. No more than two grades of “D” or “DC” in courses presented for graduation may be counted for graduation.
3. Complete the following program of 131 semester hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall.
4. Courses listed in darker italic print must be completed with at least a “C” prior to enrollment in upper level Industrial and Manufacturing Engineering courses.
5. The following courses must be completed with a grade of “C” or better prior to enrollment in 300/400-level courses.

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**Manufacturing Technology Minor**

The manufacturing technology minor is available to Haworth College of Business students majoring in industrial marketing. It is recommended that students selecting the manufacturing technology minor fulfill their General Education Area VI requirements by taking CHEM 101 or 103 and/or PHYS 113 and 114. The manufacturing technology minor totals 16 semester credit hours including three required courses and two approved elective courses selected in consultation with a student's major advisor.

**REQUISITE COURSE — 10 hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>IME 422</td>
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<td>IME 481</td>
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<tr>
<td>IME 491</td>
<td></td>
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<td>IME 402</td>
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**APPROVED ELECTIVES — 6 hours**

Select two (2) courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECE 100</td>
<td>Fundamentals of Circuits and Electronics</td>
</tr>
<tr>
<td>IME 369</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>IME 320</td>
<td>Engineering Cost Analysis</td>
</tr>
<tr>
<td>IME 328</td>
<td>Quality Assurance and Control</td>
</tr>
<tr>
<td>Approved Elective</td>
<td></td>
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</tbody>
</table>
IME 328 Quality Assurance and Control 3 hrs.
IME 154 Machining Fundamentals 3 hrs.
IME 352 Metal Casting 3 hrs.
PAPR 354 Paper Industry Processes 3 hrs.

**Industrial and Manufacturing Engineering Courses (IME)**

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog. Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-lab hours).

**IME 102 Technical Communication (3-0)**
3 hrs.
Principles of objective presentation of factual material, logical organization, summarizing, ethical practices, information gathering, technical writing, oral communication, and listening through practical applications.

**IME 121 Automotive Chassis Systems (2-3)**
3 hrs.
The operation, design, manufacture, and application of basic scientific principles to automotive chassis systems. Systems include power transmission, braking, steering/suspension, and interior atmospheric control. Investigation includes disassembly, measurement, associated calculations of strength and capacity, reassembly, adjustment, and testing.

**IME 122 Automobile in Society (3-0)**
3 hrs.
Applications of principles of Physics, Chemistry Biology and Technology applied to the automobile. Topics included are: Occupant Protections, Vehicle Control, Physical Strength and Durability of Drivers, Power Production, Global Warming, Power Transmission, Energy Storage and Retrieval, Air Pollution, Use and Re-use of Natural Resources, Choices dealing with Vehicle Selection, Purchase Options, Insurance, Productivity, Maintenance, Societal Consequences and a history of the industry's record of successes and failures.

**IME 124 Automotive Engine Systems (2-3)**
3 hrs.
The performance, dynamics, study of design, manufacturing, and adjustment of automotive spark ignition and compression ignition engines. Thermodynamics will be applied to engine operation. The measurement and study of volumetric, mechanical, and fuel efficiencies. Also included is valve train and piston dynamics, engine balance, vibration control, calculations of engine component loads, induction, and exhaust system dynamics. Prerequisite: MATH 111 or equivalent.

**IME 142 Engineering Graphics (2-3)**
3 hrs.
Essentials of engineering graphics including technical sketching, CAD applications, applied geometry, orthographic projection, section, dimentioning, tolerancing, threads and fasteners, weldments, detail and assembly drawing, charting and basic elements of descriptive geometry. All work is according to the current ANSI drafting standards. Previous technical drawing is recommended.

**IME 144 Descriptive Geometry (2-3)**
3 hrs.
Applications of analytical graphics in solution of engineering and technical design problems. Study of spatial concepts involving points, lines, planes, and solids. Prerequisite: IME 142.

**IME 150 Introduction to Manufacturing (3-0)**
3 hrs.
Analysis and application of procedures used in modern manufacturing environments. Focus on the integration of human, material, and equipment factors in the production process. Prerequisite: IME 102 or concurrent, IME 102.

**IME 154 Machining Fundamentals (2-3)**
3 hrs.
Theoretical and laboratory experience in the basic techniques and properties of machinable materials. Introduction to layout, measurements, machine use, and cutting tool geometry. Consideration of advanced machining techniques. Prerequisite: IME 150.

**IME 205 Work Design (3-3)**
4 hrs.
Design of jobs and work environments in business and industry. Topics include techniques for job design, ergonomic considerations in the workplace, and other design constraints. A semester project requiring the design of a work station is required. Prerequisite: IME 206 or concurrent, IME 102.

**IME 206 Engineering Computations (3-0)**
3 hrs.
A basic course introducing students to software and hardware to be used for engineering computations and decision making. Instruction includes: computer-mediated communication, FORTRAN, Lotus 123 and Minitab. Familiarization with the VAX and PC resources located in the Computer Aided Engineering Center. An emphasis is placed on learning structured problem solving and how software packages that will be used in upper-level IME courses. Prerequisite: Proficiency in BASIC programming. This prerequisite may also be met by completion of CS 106 or equivalent. Corequisite: MATH 122.

**IME 221 Automotive Automatic Transmission/Transaxle Systems (2-2)**
3 hrs.
The operation, study of design, and manufacture of automatic transmissions and transaxles including hydraulics, electronics, torque capacities, and gear systems. Measurements and computations for pumps, valve mechanisms, clutches, bands, and gears. Includes a study of bearing application, lubrication and cooling of the transmission/transaxle, and testing. Prerequisite: PHYS 113 and PHYS 114 or PHYS 107 and PHYS 108.

**IME 222 Fuels and Lubricants (2-2)**
3 hrs.
A study of petroleum products and their application to the fuel and lubricant requirements of automobiles and aircraft. Laboratory tests are conducted to ascertain octane requirements, octane numbers, viscosity, volatility, flash and fire point, grease penetration, API degree, and dropping point of grease. Prerequisite: CHEM 101 or CHEM 102 or CHEM 103.

**IME 224 Fuel and Electrical/Electronic Systems (3-4)**
4 hrs.
The operation, study, design, testing, manufacture, and application of automotive electrical/electronic and engine control systems. Investigation of fuel, ignition, charging, starting, and auxiliary systems. Special attention is given to strategies for fuel economy, power, emissions, drivability, and safety. Prerequisite: ECE 100.

**IME 246 Introduction to Computer-Aided Design (2-3)**
3 hrs.
Principles of computer graphics technology and applications in CAD hardware and software components, and system operation. Survey of selected commercial CAD systems for production of 2-dimensional drafting and 3-dimensional wireframe part design creation. Emphasis placed upon factors affecting performance and capabilities of comparative CAD systems. Prerequisite: IME 142.

**IME 250 Plastics Properties and Processing (2-3)**
3 hrs.
Effects of polymer chemistry, additives, plasticizers, fillers, and reinforcements on the properties of plastics. Molding, forming, extrusion, casting, laminating, coating, welding, and decorating of thermoplastic and thermostet materials. Prerequisite: IME 150, CHEM 103.

**IME 261 Engineering Statistics (3-0)**
3 hrs.
Introduction to statistical methodology, emphasizing applications in engineering. Topics include descriptive and inferential statistics, least squares curve fitting, correlation, and analysis of variance. Prerequisite: MATH 123, a course in the use of computers. (Cross listed with MATH 261.)

**IME 262 Probability for Engineers (3-0)**
3 hrs.
Introduction to probability emphasizing applications in engineering. Use of discrete and continuous random variables common to engineering problems. Random processes used in engineering models. Corequisite: MATH 272. (Cross listed with MATH 262.)

**IME 281 Statics and Strength of Materials (4-0)**
4 hrs.
Fundamentals of thermodynamics. First and second law for open and closed systems. Basics of heat transfer. Prerequisites: PHYS 113/114; MATH 123 or MATH 200.

**IME 284 Fluid Mechanics and Hydraulics (2-0)**
2 hrs.
Fluid properties, fluid statics, laminar and turbulent flow, flow in pipes. Prerequisites: IME 281, PHYS 113/114.

**IME 300 Cooperative Education (1-3)**
1-3 hrs.
A cooperative education program involves a full-time planned and supervised work experience in industry during the semester or the equivalent on a part-time basis. A written report of the student's activities will be required. May be elected four semesters for a maximum of twelve semester credit hours. Must be taken on a credit/no credit basis.

**IME 305 Work Analysis (3-0)**
3 hrs.
Methods engineering and measurement of human work systems. Techniques for operation analysis, work measurement, and work sampling. Predetermined basic motion-time systems and standard data development are introduced. NOT FOR ENGINEERING CREDIT.

**IME 307 Computer Controlled Manufacturing Systems (3-3)**
4 hrs.
Analysis and design of computer controlled manufacturing systems. Students must enroll in IME 308 during the semester following IME
IME 307. Prerequisites: IME 206, ECE 211 (ECE may be taken concurrently).
IME 308 Computer Controlled Manufacturing Design Lab (0–6)
2 hrs.
A continuation of IME 307 in which students design and construct a physical computer controlled model to simulate a manufacturing process. IME 307 and IME 308 must be taken during the same academic year. Prerequisite: IME 307.
IME 309 Engineering Economy for Mechanical Engineers (2–0)
2 hrs.
Economic decision making from an engineering perspective. This course is designed to provide undergraduate engineering students with sufficient knowledge to perform engineering economy studies. Topics covered include time value of money, decision making criteria, break-even studies, depreciation and taxes, inflation, and life cycle cost analysis. Prerequisite: MATH 123. For Mechanical Engineering Majors only.
IME 310 Engineering Economy (3–0)
3 hrs.
Application of principles of engineering economy for establishment of equipment and system feasibility. Interest, equivalence, taxes, depreciation, uncertainty and risk, incremental and sunk costs, and replacement models. Prerequisites: CS 106 or CS 306 or IME 206, MATH 123.
IME 311 Introduction to Operations Research (3–0)
3 hrs.
The development of mathematical concepts and models concerned with industrial engineering problems. Topics include queuing theory, gametheory, linear, and dynamic programming. Prerequisite: IME 261, IME 262.
IME 312 Quantitative Techniques (3–0)
3 hrs.
Studying and developing procedures to help in the process of making decisions and solving management problems. A variety of mathematical models are studied. The models are described and solutions are derived. Emphasis is placed on the application of these models to manufacturing related problems. NOT FOR ENGINEERING CREDIT. Prerequisite: MATH 260.
IME 315 Work Analysis and Design Lab (0–3)
1 hr.
The purpose of this design course is to use in a laboratory setting introductory principles of work analysis, design, and measurement. Major topics include human factors, work design principles, work environment, economic justification, work measurement and the design process. NOT FOR ENGINEERING CREDIT. Prerequisite: IME 305 or taken concurrently.
IME 316 Report Preparation (3–0)
3 hrs.
Learning techniques and procedures for preparation of technical documents. Intensifying critical, analytical process of thinking, and executing writing and oral strategies for different situations. Prerequisite: IME 102, junior standing.
IME 318 Statistical Quality Control (3–0)
3 hrs.
Methods of applying statistics and probability theory to control production processes. Application of computer programs to analyze quality control problems. Prerequisites: IME 206, IME 262.
IME 320 Engineering Cost Analysis (3–0)
3 hrs.
A course in engineering economics and the economic comparison of alternative technical systems. Includes interest, equivalence, depreciation, taxes, and risk. NOT FOR ENGINEERING CREDIT. Prerequisite: MATH 200.
IME 322 Safety in Industry (3–0)
3 hrs.
Importance of safety in industry. Cost of accidents, fundamentals of accident prevention, elements of effective safety programs, accident investigation, and OSHA. Prerequisite: Upperclass standing.
IME 326 Operations Planning and Control (3–0)
3 hrs.
Methods of controlling and coordinating production using production planning, scheduling, inventory control, and dispatching. NOT FOR ENGINEERING CREDIT. Prerequisite: MATH 216 or MATH 260 or MATH 366.
IME 327 Vehicle Systems Diagnosis (2–3)
3 hrs.
The study of the diagnosis techniques and strategies necessary to identify malfunctions in the total automotive vehicle system. Special attention is given to laboratory and service equipment, its use, calibration, and data-gathering capabilities. Verbal and written reports are stressed. Prerequisites: IME 121, IME 124, IME 221, IME 222, IME 224, and ECE 101.
IME 328 Quality Assurance and Control (3–0)
3 hrs.
Techniques of controlling quality in manufacturing systems. Topics include organization of quality, methods of measurement, and basic statistical tools. NOT FOR ENGINEERING CREDIT. Prerequisite: MATH 216 or MATH 260 or MATH 366.
IME 346 Programming for Computer-Aided Design (2–3)
3 hrs.
Modular software development for interactive CAD. Topics include human interface for interactive design, programming structure for modular entity creation, storing and retrieving object data, utilizing peripheral input and output devices, attribute regulation and control, and software transfer and documentation specifications. Prerequisites: IME 246 and CS 111.
IME 348 Designing for Production (2–3)
3 hrs.
Engineering documentation as it relates to the product development and manufacturing methods required to bring a quality product to market. ANSI and ISO standards will be studied to acquaint the students with the documentation necessary to develop assembly and part drawings and to control the changes that will effect the assembled parts. Material specifications and cost studies will be combined with geometric dimensioning and tolerancing to be applied to parts gages and tooling. The use of CAD is a major part of this course. Prerequisite: IME 154, IME 246, and IME 281.
IME 350 Production Thermoplastic Processing (2–3)
3 hrs.
Injection molding, blow molding, extrusion and thermforming. Effects of thermo-plastic melt characteristics on product design and part quality. Effects of machine design, set-up, and operation on part cost and profitability. Overview of processing machinery including take-off and sizing equipment. Prerequisites: IME 250, CMD 254, CMD 255.
IME 352 Metal Casting (2–3)
3 hrs.
Principles of pattern design, molding, pouring, and process analysis using a variety of materials and production techniques. Solidification of metals and alloys as a nucleation and grain growth process. Formation of inclusions and other casting defects will be discussed. Theory and practice in metal casting principles using green sand, investment, centrifugal, and loss foam processes. Prerequisites: IME 154, CMD 254, CMD 255.
IME 357 Fabrication and Pressworking (2–3)
3 hrs.
Principles and application of joining, blanking, piercing, forming, and assembly operations using metals and other manufacturing materials. Prerequisites: IME 291, IME 348, CMD 254, CMD 255.
IME 358 Computer-Aided Manufacturing (2–3)
3 hrs.
Principles of operation of numerically-controlled systems for manufacturing. Application of CAD/CAM systems and graphics NC in programming. Prerequisites: IME 154, IME 246, and CS 104 or CS 111.
IME 387 CAD/CAM Fundamentals (2–3)
3 hrs.
Application of computer graphics to drafting and design, translation of drawings to part programs for CNC machine control. Considerations for computer-integrated manufacturing. (Not for majors in EGR and MFT.)
IME 402 Supervision of Industrial Operations (3–0)
3 hrs.
Supervisory duties and responsibilities of foremen, engineers, and technicians in industrial operations. Prerequisite: Junior standing.
IME 403 Industrial Labor Relations (3–0)
3 hrs.
Relationships between government agencies, labor organizations, and management. Emphasis on development of collective bargaining procedures. Prerequisite: Senior standing.
IME 404 Plant Layout and Material Handling (3–0)
3 hrs.
The course is designed to give the students a comprehensive understanding of the issues involved in the design of an industrial production system. It will cover the problems in plant location, product analysis, process design, equipment selection, material handling, and plant layout. NOT FOR ENGINEERING CREDIT. Prerequisites: IME 305, IME 326, senior standing.
IME 405 Senior Engineering Management Design Project (2–6)
4 hrs.
Concepts and strategies for the analysis, design, improvement, and operation of integrated systems of persons, material, and equipment with concentration on methods of successful implementation. A project oriented course drawing on previous courses in the student’s program. NOT FOR ENGINEERING CREDIT. Prerequisites: IME 320, IME 316, senior standing and two of the following: IME 305 and IME 315, IME 326, IME 328.
IME 410 Senior Seminar (1–0)
1 hr.
A seminar for senior industrial engineering students. Topics for discussion will be centered about the role of the industrial engineer and supervisor at place of work and obligation to society. Prerequisite: Senior standing.
IME 411 Engineering Management Seminar (1–0) 1 hr. A seminar for senior engineering management students. Topics for discussion are the professional role of technology graduates, professional relationships with engineers and scientists, ethics of the profession, and legal concerns. NOT FOR ENGINEERING CREDIT. Prerequisite: Senior standing.

IME 414 Material Handling and Facilities Design (3–0) 3 hrs. This course is designed to give the students a comprehensive understanding of the issues involved in the design of an industrial production system. It will cover the problems in plant location, product analysis, process design, equipment selection, materials handling, and plant layout. Prerequisites: IME 205, IME 310, IME 316, IME 416 or taken concurrently.

IME 415 Senior Industrial Engineering Design Project (2–6) 4 hrs. Student project teams will be assigned system design problems with participating southwestern Michigan firms. Each team will design a solution to the problem and be responsible for writing a justification for their design proposal, and will make a formal oral presentation to representatives of the client firm. Prerequisite: IME 414.


IME 417 Computer Integrated Manufacturing (3–3) 4 hrs. Provides students with an understanding of (CIM) system concepts and technology. Topics include design, planning and operational issues related to the integration of computers in manufacturing systems, theoretical and applied. NOT FOR ENGINEERING CREDIT. Prerequisites: ECE 100, CS 105 or equivalent.

IME 420 Modern Industrial Practices (1–6) 3 hrs. Students will observe and analyze actual supervisory and managerial functions in industrial and service establishments. Conference procedures will be used in exploring many facets of supervisory and managerial practices and procedures. A charge for transportation is required. Prerequisites: Spring session prior to graduation.

IME 421 Automotive Design Analysis (2–2) 3 hrs. Evaluations of the interrelationship of engineering standards, operating limitations, manufacturing, cost control, customer satisfaction, and repairability of modern automobile systems. Verbal and written reports are required on “fit and finish,” ergonomics, safety, performance, cost, and repairability. Prerequisite: IME 327.

IME 422 Engineering Teams: Theory and Practice (3–0) 3 hrs. Methods of understanding, planning and presenting a conference with oral and written communication. Team building is used to explore creativity, controversy, power, and process in leadership situations. Prerequisites: COM 104 or IME 316, upperclass standing. IME 316 may be taken concurrently.

IME 424 Plant Layout and Material Handling Lab (0–3) 1 hr. Students will be responsible for choosing a product for which they are to plan, design and layout the manufacturing facilities including all related office and service areas. To ease their task, all the drawings such as drawings of “make” parts will be provided. NOT FOR ENGINEERING CREDIT. Prerequisite: IME 404, or taken concurrently.

IME 430 Simulation Modeling and Analysis (3–0) 3 hrs. Use of computer simulation as a modeling tool, and emphasis on discrete event simulation. Both FORTRAN-based simulation language and GPSS are used. Statistical analysis of both input data and simulation results. Prerequisites: IME 206, IME 262.

IME 434 Material Handling and Facilities Design Lab (3–0–3) 1 hr. Students will be responsible for choosing a product for which they are to plan, design and layout the manufacturing facilities including all related office and service areas. To ease their task, all the drawings such as drawings of “make” parts will be provided. Prerequisite: IME 414, or taken concurrently.

IME 442 Ergonomics and Design (2–3) 3 hrs. An introduction to ergonomics affording students the necessary knowledge essential for the psychological and anthropometrical development leading to good design. Emphasis is placed on health and safety. A design project is required.

IME 444 Advanced Product and Machine Design (2–3) 3 hrs. Advanced projects in the application of geometric dimensioning and tolerancing to complex parts and assemblies. Mechanical components are analyzed and applied to meet design requirements for applied motion and force transmission projects. CAD application will be an important part of this course. Prerequisite: IME 442, IME 348, and IME 481.

IME 446 CAD Applications (2–3) 3 hrs. Parametric macro development and applications customization on selected commercial CAD systems. Investigation of existing graphical packages and advanced software design with special emphasis on surface and solids modeling for design creation, display, and analysis. Prerequisite: IME 246 and senior status.

IME 449 Computer-Aided Analysis (2–3) 3 hrs. Understanding and application of Computer-Aided Design (CAD) principles for design analysis of conceptual designs. Exposure to and utilization of commercial software packages for computer-based design analysis techniques (e.g. Finite Element Analysis - FEA) and customized design evaluation (e.g., symbolic evaluation). Interaction with, and among, selected drafting/modeling and design/analysis packages. Prerequisites: IME 293, IME 284, IME 348, CS 111.

IME 450 Senior Design Project I 3 hrs. The first of a two-semester sequence in which the student works on an approved engineering related design project. A preliminary design and report are required at the end of the course. Project will be completed in IME 451. FOR OFF-CAMPUS PROGRAMS ONLY. Prerequisite: Consent of instructor.

IME 451 Senior Design Project II 3 hrs. Completion of the engineering design project started in Senior Design Project I. A formal written report and oral presentation are required. FOR OFF-CAMPUS PROGRAMS ONLY. Prerequisite: IME 450.

IME 452 Die Casting (2–3) 3 hrs. A study of the elements of the process and control limits to produce sound castings. An analysis of gating systems will be evaluated with industry computer programs. Alloys will be studied in relation to parts being produced. Prerequisite: IME 352.

IME 453 Maintenance in Manufacturing (2–3) 3 hrs. Installation, adjustment, and maintenance of equipment. Machinist monitoring, diagnostics, and maintenance systems. Prerequisite: Senior standing.

IME 455 Advanced Metal Casting (2–3) 3 hrs. The identification of causes for cast metal variability (melt, mold, and fill) through the use of instrumentation, data gathering, and analysis techniques. Strategies for establishing process control and process capability in metal casted parts. Prerequisite: IME 352.


IME 459 Mold Design and Construction (2–3) 3 hrs. Mold and die design, processing and part requirements, molded holes and undercuts, threads, tool-making processes, tooling, materials, special fixtures. Mold and die construction using a wide range of cavity production methods. Computer analysis of temperature, pressure, and filling characteristics of a mold. Prerequisites: IME 154, IME 250.

IME 481 Metrology (2–3) 3 hrs. Precision measurement, its relationship to geometric tolerances, critical dimensions, and calibration. Statistical process control and quality assurance using manual and automated gauges, checking fixtures, non-destructive testing, and coordinate measuring systems. Use of vision, laser, and other non-contact measuring systems. Prerequisites: IME 348, MATH 260.

IME 483 Project Design and Control (1–0) 1 hr. Problem definition, project planning and scheduling, follow-up and control techniques. Results in presentation and plan for senior project. Prerequisite: Senior status and Department approval.
IME 485 Senior Project (1-6) 3 hrs.
Open-ended team projects involving systems design, analysis, or application. Results in a tangible system, written report, and presentation. Prerequisites: Grade of "C" or better in IME 483 and approved project.

IME 487 Manufacturing Productivity Techniques (3-0) 3 hrs.
Application of modern processes, principles of productive tooling and inspection methods to quality production. The impact of emerging materials on processing techniques, organization, and systems for automation.

IME 488 Applied Process Reengineering (3-0) 3 hrs.
Application of analytical and process measurement techniques to process design decisions. Benefits of process standardization and improvement. Prerequisites: Senior standing. ISM major or minor or permission of instructor.

IME 490 Independent Research and Development (Arr.) 1-4 hrs.
Individual research or special project in engineering. Open only to juniors and seniors having the approval of the faculty member under whom the student will work and the approval of the department chair. Students may register more than once, not to exceed 6 hours.

IME 491 Multidisciplinary Senior Proposal 2 hrs.
Problem definition, project planning and scheduling, follow-up and control techniques. Results in presentation and plan for multidisciplinary senior project. Prerequisite: Senior status and department approval.

IME 492 Multidisciplinary Senior Project 2 hrs.
Open-ended multidisciplinary team projects involving systems design, analysis, or application. Results in a tangible system, written report, and presentation. Prerequisite: Grade of "C" or better in IME 491 and approved project. Corequisite: IME 493.

IME 493 Multidisciplinary Senior Project Consultation 1 hr.
Supervision of open-ended multidisciplinary team projects involving systems design, analysis, or application. Results in a tangible system, written report, and presentation. Prerequisite: Grade of "C" or better in IME 491 and approved project. Corequisite: IME 492.

IME 495 Special Topics in Industrial and Manufacturing Engineering (3-0) 3 hrs.
A specialized course dealing, each time it is scheduled, with some particular aspect of industrial or manufacturing engineering not usually included in other course offerings. May be repeated for credit with a different topic. Prerequisite: Permission of instructor.

IME 498 Readings in Engineering (Arr.) 1-6 hrs.
Independent readings in engineering. Open only to juniors and seniors having the approval of the faculty member under whom the student will work and the approval of the department chair. Students may register more than once, not to exceed 6 hours.

IME 499 Studies in Engineering (Arr.) 1-6 hrs.
Independent studies in engineering. Open only to students having the approval of the faculty member under whom the student will work and the approval of the department chair. Students may register more than once, not to exceed 6 hours.

IME 500 Advanced Industrial Relations (3-0) 3 hrs.
Interplay among government agencies, labor organizations, and management. Particular emphasis is placed on collective bargaining procedures, issues, and applications through case studies. Prerequisite: IME 403 or permission of instructor.

IME 501 Survey of Industrial Engineering Topics (3-0) 3 hrs.
Course devoted to studying the basics of the industrial engineering profession. Subjects will include work analysis, engineering economy, statistical quality control, production planning and control, and material handling. Emphasis is placed on the application of these techniques to manufacturing related problems. This course cannot be applied for credit toward the Masters of Science degrees in Engineering Management or Industrial Engineering. Prerequisites: MATH 200, 260 or 366, or equivalent.

IME 502 Manufacturing Engineering Fundamentals (3-3) 4 hrs.
This course reviews the fundamental principles in Computer-Aided Design (CAD), Computer-Aided Manufacturing (CAM), and metrology used in the practice of manufacturing engineering. Topics covered include: CAD documentation techniques, CAD modeling, Computer-Aided Engineering (CAE), Tolerancing (GD & T), and Numerical Control (N/C) programming, graphical N/C programming systems, and Statistical Process Control (SPC). The laboratory includes hands-on experiences with commercial CAD/CAM systems, N/C machines, and instruments of precision measurement. This course cannot be applied for credit toward any masters or graduate program offered by the IME department. This course may be used to meet the stated prerequisite requirements normally satisfied by IME 246, IME 358, and IME 481 in the graduate program. Prerequisites: MATH 200, CS 105, IMM 142, IMM 154.

IME 503 Manufacturing Materials Fundamentals (2-3) 3 hrs.
The course is focused upon the study of identification, properties, processing, applications, and testing techniques of industrial materials. Topics discussed include: metals, ceramics, wood, and composites materials. Analysis of property behavior utilizing standardized (appropriate) testing techniques will be carried out for selected industrial materials. Processing of plastics and composites will be investigated. This course can not be applied for credit toward any masters or graduate program offered by the IME department. This course may be used to meet the stated prerequisite requirements normally satisfied by IME 250 and IME 258 in the graduate program. Prerequisites: CHEM 103, PHYS 115, IMM 150.

IME 505 Continuous Improvement in Operations (3-0) 3 hrs.
The purpose of this course is to introduce business and engineering students as well as managers to the process of kaizen (Continuous Improvement) and Total Employee Involvement.

IME 507 Computer Integrated Manufacturing (3-0) 3 hrs.
Topics related to computer integrated manufacturing. Topics include: computer process control, robotics, group technology, CNC, CAD, FMS. Hands-on experience with miniature computer controlled equipment will be included. Prerequisite: Course in computer programming.

IME 508 Advanced Quality Management (3-0) 3 hrs.
Analysis and application of new concepts in the field of quality control. Tests of significance, probability studies, and other uses of statistics as applied to quality control. Prerequisite: IME 318, or IME 328, or IME 501 or equivalent.

IME 512 Management of Service Operations (3-0) 3 hrs.
An analysis of service industries, exploring differences in planning and controlling operations. Emphasis will be on service system design, service quality, and comparing customer expectations with their perceptions.

IME 516 Design of Experiments and Regression Analysis (3-0) 3 hrs.
Topics related to experimental design and regression analysis. Topics include randomized blocks, Latin squares, factorial designs, multiple correlation and regression, and its application to response surfaces. Prerequisite: IME 261 or equivalent.

IME 542 Human Factors Engineering (3-0) 3 hrs.
The process of designing for human use. The course covers the study of the interactions between the user, equipment, products, and the environment in any human-task-environment system. Topics include human capabilities and limitations, human input, output, and control, work space design, and the work environment.

IME 546 Concurrent Engineering (3-0) 3 hrs.
The synthesis of automated design, analysis, and manufacturing processes through integrated computer systems. Topics include: N/C programming, boundary element analysis, and manufacturing process generation will be investigated. Prerequisites: CAD experience.

IME 550 Advanced Plastics Processing (3-0) 3 hrs.
Review of optimum machine components and systems. Identification of key process variables within injection molding and extrusion systems. Discussion of the causes of process instability. Determination of the process capability within injection molding and extrusion systems. Priorities, static and dynamic understanding of plastics processing.

IME 557 Special Topics in Industrial and Manufacturing Engineering (3-0) 3 hrs.
Group study of special topics in industrial engineering and technology. The specific topic will be shown in the course title when scheduled. May be repeated for credit with a different topic. Prerequisite: Consent of instructor.
 MANUFACTURING ENGINEERING

Richard E. Munsterman, Chair
William R. Peterson, Associate Chair

The Department of Manufacturing Engineering offers a curriculum leading to the degree of Bachelor of Science in Engineering (Manufacturing). The goal of this curriculum is to develop students who have the ability to take a product design or concept and design the manufacturing process. The curriculum includes mathematics, general education subjects, the basic sciences, the engineering sciences and specially designed courses for manufacturing engineering. The curriculum has extensive coverage of materials, manufacturing process, and design. Background is also provided in manufacturing mechanics, electronics and manufacturing management.

Manufacturing engineers work in industries to design, develop and implement manufacturing processes to manufacture consumer products. They can be found working in a broad range of industries such as automotive, aircraft, appliance, etc. They can be expected to troubleshoot a manufacturing problem, layout a manufacturing line, write purchase specifications for manufacturing equipment, to implement automation equipment or to supervise production operations. The intent of this program is to prepare students for a diverse role in a manufacturing enterprise.

This curriculum was designed with the aid of an industrial advisory committee. This committee included a wide representation of manufacturers and represents their collective thinking as to what a modern-day manufacturing curriculum should include.

Academic Advising

Students should contact an advisor at the WMU Regional Office, Muskegon Community College, Muskegon, Michigan (616) 777-0500, as early as possible in the program to set up an academic plan of work. Alternately, students can contact the Office of Advising and Admissions, College of Engineering and Applied Sciences, Room 203B, Kohrman Hall, Western Michigan University, Kalamazoo, Michigan (616) 387-4033.

Manufacturing Engineering Degree Program

Candidates for the Bachelor of Science in Engineering (Manufacturing) degree must satisfy the following requirements in addition to those required by Western Michigan University.

1. To satisfy professional engineering accreditation requirements, all students must complete a sequence of two courses (minimum of six credit hours) in the humanities, fine arts, social sciences, and/or behavioral sciences. The sequence must begin with a course at the 100-200 level and conclude with a course at the 300-400 level. Both courses must have the same course prefix, must provide depth, and must not be a selection of unrelated introductory courses. The sequence may be selected from General Education Areas I, II, III, IV, and/or V as part of the University General Education requirements. If the University General Education requirements have been otherwise satisfied, the sequence may be from any of the humanities, fine arts, social sciences, and/or behavioral sciences.

2. A grade point average of 2.0 or better must be earned in courses presented for graduation with MFE, ME, IME, and ECE prefixes.

3. No more than two grades of “D” or “DC” in courses presented for graduation may be counteracted by a grade of “C” or better received in subsequent attempts.

4. Complete the following program of 129 semester credit hours. Pre-engineering requirements are in darker, italicized print.

Baccalaureate Writing Requirement

Students who have chosen the Manufacturing Engineering curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing IME 316 Report Preparation.

First Semester — 16 hours

**MATH 122 Calculus I [4]**

**IME 150 Introduction to Manufacturing [3]**

**IME 102 Technical Communication [3]**

**IME 142 Engineering Graphics [3]**

**Area I Fine Arts* [3]**

Second Semester — 17 hours

**MATH 123 Calculus II [4]**

**CHEM 101 or 102 General Chemistry I [4]**

**MFE 120 Engineering Design and Verification [3]**

**PHIL 220 Critical Reasoning [3]**

**Area III The United States: Cultures and Issues* [3]**

Third Semester — 16 hours

**MATH 272 Vector and Multivariate Calculus [4]**

**PHYS 205 Mechanics and Heat [4]**

**PHYS 206 Mechanics and Heat Lab [1]**

**CS 200 Programming Language Experience [2]**

**COM 104 Public Speaking [3]**

**Area VIII Health and Well-Being* [2]**

Fourth Semester — 18 hours

**MATH 374 Introduction to Linear Algebra and Differential Equations [4]**

**PHYS 207 Electricity and Light [4]**

**PHYS 208 Electricity and Light Lab [1]**

**IME 261 Engineering Statistics [3]**

**ME 256 Statics [3]**

**MFE 220 Principles of NC/CNC Machining [3]**

Fifth Semester — 16 hours

**MFE 330 Manufacturing Materials I [4]**

**MFE 340 People at Work [3]**

**ECE 212 Electronic Circuits and Systems [3]**

**ME 258 Dynamics [3]**

**PHIL 316 Ethics in Engineering and Technology [3]**

Sixth Semester — 16 hours

**MFE 360 Computer Control of Manufacturing Operations [3]**

**ME 257 Mechanics of Materials [4]**

**ECE 312 Fundamentals of Electronics and Machines [3]**

**IME 316 Report Preparation [3]**

**IME 310 Engineering Economy [3]**

Seventh Semester — 15 hours

**MFE 430 Manufacturing Materials II [4]**

**MFE 442 Quality Assurance [3]**

**MFE 440 Production Engineering [3]**

**MFE 480 Senior Design I [2]**

**Area IV Other Cultures and Civilizations* [3]**

Eighth Semester — 16 hours

**MFE 420 Advanced Manufacturing Processes [4]**

**MFE 424 Tool Design [3]**

**MFE 444 Simulation of Industrial Operations [3]**

**MFE 482 Senior Design II [2]**

**Area V Social and Behavioral Sciences* [3]**


*At least two of these courses must be at the 300-400 level.

Manufacturing Engineering Courses (MFE)

A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog. Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-lab hours).

MFE 120 Engineering Design and Verification (2–3)

3 hrs. Study in the application of ANSI and ISO standards in the design of manufactured parts and assemblies. Linear and geometric dimensioning and tolerancing (GD&T) in both metric and customary units will be applied in functional designs. An introduction to statistical process control and quality assurance using precision measurement instruments and coordinate measuring systems. Prerequisites: IME 150; a course in computer-aided design or consent of instructor.

MFE 220 Principles of NC/CNC Machining (2–3)


MFE 330 Manufacturing Materials I (3–3)

4 hrs. Structure and properties of metallic materials. Considerations for selection in applications. Manufacturability. A three-hour laboratory is required. Prerequisites: CHEM 101 or 102; PHYS 205.

MFE 340 Design for People at Work (3–0)

3 hrs. The application of Human Factors/Ergonomics principles to the design of the workplace, equipment, and environment to provide safe and productive facilities for people at work. Topics will include a review of OSHA/Safety and ADA requirements. Prerequisite: PHYS 205.

MFE 360 Computer Control of Manufacturing Operations (2–3)

3 hrs. An introduction to concepts related to computer control of manufacturing operations. Brief coverage of analog/digital conversion, automation components, microprocessor and its applications, principles of classical control theory, NC/CNC systems, robotics, and programmable logic controllers (PLC). The classroom lectures are reinforced with a series of laboratory experiments. Prerequisite: Computer programming in C; ECE 212. Co-requisite ECE 312.

MFE 420 Advanced Manufacturing Processes (3–3)

MECHANICAL AND AERONAUTICAL ENGINEERING

Parviz Merati, Chair
Judah Ari-Gur
Christopher S. K. Cho
Jay Eastwood
Srinivas Girimella
Mehulam Groper
Philip J. Guetchelaar
Jerry H. Hamelink
Richard Hathaway
Arthur Hoadley
James Kamman
Daniel Kujawski
William W. Liu
Koorosh Naghshein
Iskender Sahin
Ramesh P. Sharma
Dennis J. Vander-Brink
Molly W. Williams

Adjunct Faculty
Jerome H. Hemmye
Raymond N. House, Jr.
Vikas Patnaik
Richard C. Schubert
William J. Stiefel III

The Department of Mechanical and Aeronautical Engineering offers programs leading to the degree of Bachelor of Science in Engineering (Mechanical or Aeronautical). The two programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The programs are designed to provide engineering expertise appropriate to the diversity of the specific engineering program selected. These programs include mathematics, general education subjects, the basic sciences, the engineering sciences, product design, and an integrated computer experience. Electives may be used to deepen or broaden the program.

Mechanical engineers are found in almost every industry. Examples of areas for career opportunities include manufacturing, machine tool design, and product development; land, sea, air, and space vehicles and systems; energy conversion and energy distribution; computer hardware and computer software; environmental systems; and construction and urban development. Opportunities for mechanical engineers continue to develop with the rapid expansion of our knowledge base and population growth.

Aeronautical Engineers find career opportunities in the aerospace industry and other engineering areas capitalizing on their strong applied engineering background. Much of their course work is specialized to the aerospace fields.

Scholarships and Awards
Several scholarships are available through the College of Engineering and Applied Sciences. These include, but are not limited to, scholarships through the Giffels Associates, Lakehead-Pipeline, Society of Manufacturing Engineers, H. H. Harris Foundation, and the College itself. Program announcements are distributed during the application period.

The Department of Mechanical and Aeronautical Engineering also annually presents several awards, which include:
• Dean E. Bluman Memorial Award—presented to an outstanding student of mechanical engineering who has demonstrated interest and ability in liberal studies. This is in honor and recognition of the late Dr. Bluman who, during his tenure as Professor and Chairman of Mechanical Engineering, was an active supporter of liberal education for engineering students.
• Outstanding Mechanical Engineering Scholar Award—presented to a mechanical engineering student who is outstanding scholarshiply involved in extra-curricular activities, and demonstrates leadership ability and the professionalism associated with mechanical engineering.
• Mechanical Engineering Presidential Scholar Award—presented to an outstanding mechanical engineering student who is a senior using University-wide criteria which includes senior standing, superior scholastic ability, extra-curricular involvement, and professional promise.

Cooperative Education
Students may elect the cooperative plan of education. In this plan, the student alternates a semester of study on campus with a semester of compensated industrial experience. Students may work in any area in which mechanical engineers may be found.

Additional Information
General information regarding advising, scholarships, and special programs of interest to students in this department may be found under the beginning of the Engineering and Applied Sciences section of this catalog. Enrollmment will not be honored in any course, when other students are requesting that course, if the student does not attend the first class meeting (lecture or lab) unless prior arrangements have been made with the instructor. Students not attending courses for whatever reasons are responsible for processing drop slips with the Registration Office if fees are to be refunded.

Aeronautical Engineering Degree Program
Candidates for the Bachelor of Science in Engineering (Aeronautical) degree must satisfy the following requirements in addition to those required by Western Michigan University:
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MECHANICAL AND AERONAUTICAL ENGINEERING

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part of the University General Education requirements. If the University General Education requirements have been otherwise satisfied, the sequence may be from any of the humanities, fine arts, social sciences, and/or behavioral sciences.

2. A grade point average of 2.0 or better must be earned in courses presented for graduation with AAE, ECE, IME, and ME prefixes.

3. A student is required to earn a grade of "C" or better in all 100-200 level departmental prerequisite courses before enrollment is permitted in the next sequence course.

4. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.

5. Complete the following program of 137 semester credit hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in the fall. Pre-engineering requirements are in darker, italicized print.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td>16 hours</td>
</tr>
<tr>
<td>MATH 122 Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 122 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 101 OR 102 General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CS 106 BASIC for Engineers</td>
<td>1</td>
</tr>
<tr>
<td>AREA I General Education</td>
<td>3</td>
</tr>
<tr>
<td>IME 102 Technical Communication</td>
<td>3</td>
</tr>
<tr>
<td>AREA VIII General Education</td>
<td>2</td>
</tr>
</tbody>
</table>

| Second Semester | 18 hours |
| MATH 123 Calculus II | 4 |
| PHYS 205 Mechanics and Heat | 4 |
| PHYS 206 Physics I Lab | 1 |
| IME 142 Engineering Graphics | 3 |
| ME 250 Materials Science | 3 |
| AREA II General Education* | 3 |

| Third Semester | 19 hours |
| MATH 272 Vector/Multivariable Calculus | 4 |
| PHYS 207 Electricity and Light | 4 |
| PHYS 208 Physics II Lab | 1 |
| ME 232 Thermodynamics I | 3 |
| ECE 210 Circuit Analysis | 4 |
| ME 256 Statics | 3 |

| Fourth Semester | 17 hours |
| MATH 374 Introduction to Linear Algebra and Diff. Eq | 4 |
| ME 258 Dynamics | 3 |
| AAE 261 Aircraft Systems and Propulsion | 3 |
| AREA III General Education | 3 |
| PHYS 309 AND PHYS 310 Introductory Modern Physics | 3 |
| OR | |
| CHEM 120 General Chemistry II | 4 |

| Fifth Semester | 16 hours |
| ME 362 Theory of Engineering Experimentation | 3 |
| ME 257 Mechanics of Materials | 4 |
| ME 358 Fluid Mechanics | 4 |
| ME 365 Fluid Mechanics | 4 |
| AREA V General Education | 3 |

| Sixth Semester | 16 hours |
| ME 335 Mechanical Engineering Laboratory | 3 |
| ME 360 Control Systems | 3 |
| ME 365 Machine Design I | 3 |
| AAE 431 Heat Transfer | 3 |
| AEE 361 Flight Vehicle Aerodynamics | 4 |

| Seventh Semester | 18 hours |
| ME 479 Mech/Aero Project Planning | 3 |
| AAE 483 Aircraft Structural Design | 3 |
| AAE 456 Aero Propulsion | 4 |
| AAE 450 Flight Vehicle Performance | 3 |
| ME 450 Non-metallic Materials | 3 |
| ME 450 Aircraft Stability and Control | 3 |

| Eighth Semester | 16 hours |
| AAE 469 Aircraft Design | 3 |
| ME 480 Mech/Aero Engineering Project | 3 |
| AAE 472 Compress. Aerodynamics | 3 |
| AREA IV General Education* | 4 |
| Approved Design Elective | 3 |
| OR | |
| AAE 459 Flight Test Engineering and Design | 3 |

*At least two of these courses must be at the 300-400 level.

**Baccalaureate Writing Requirement**

Students who have chosen the Aeronautical Engineering curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing ME 335 Mechanical Engineering Laboratory or ME 480 Mechanical Engineering Project.

| First Semester | 17 hours |
| MATH 122 Calculus I | 4 |
| ME 102 Tech Communication | 3 |
| OR | |
| CHEM 101 OR 102 General Chemistry I | 4 |
| IME 102 Tech Communication | 3 |
| AREA I General Education* | 3 |

| Second Semester | 16 hours |
| MATH 123 Calculus II | 4 |
| PHYS 205 Mechanics and Heat | 4 |
| ME 256 Statics | 4 |
| CS 106 BASIC for Engineers | 1 |
| AREA II General Education* | 3 |

| Third Semester | 19 hours |
| MATH 272 Vector/Multivariable Calculus | 4 |
| PHYS 207 Electricity and Light | 4 |
| ME 232 Thermodynamics I | 3 |
| ME 256 Statics | 4 |
| CS 106 BASIC for Engineers | 1 |
| AREA III General Education | 3 |

| Fourth Semester | 19 hours |
| MATH 374 Introduction to Linear Algebra and Diff. Equations | 4 |
| PHYS 309 AND PHYS 310 Introduction to Modern Physics | 3 |
| OR | |
| CHEM 120 General Chemistry II | 4 |
| ME 257 Mechanics of Materials | 4 |
| ME 258 Dynamics | 3 |
| ECE 210 Circuit Analysis | 4 |

| Fifth Semester | 18–19 hours |
| ME 365 Machine Design II | 3 |
| ME 358 Mechanism Analysis | 3 |
| ME 362 Theory of Engineering Experimentation | 3 |
| ME 365 Machine Design I | 3 |
| ECE 211 Machine and Electronic Circuits | 3 |
| ME Group 1 Elective | 3–4 |

| Sixth Semester | 15–16 hours |
| ME 360 Control Systems | 3 |
| ME 335 Mechanical Engineering Laboratory | 3 |
| ME Group 3 Elective | 3–4 |
| ME 431 Heat Transfer | 3 |
| AREA III General Education* | 3 |

| Seventh Semester | 15–17 hours |
| ME Group 2 Elective | 3 |
| ME 479 Project Planning | 1 |
| ME Group 3 Elective | 3–4 |
| ME Group 3 Elective | 3–4 |
| AREA V General Education* | 3 |
| AREA VIII General Education | 2 |
**Aeronautical Engineering Courses (AAE)**

Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-lab hours).

**AAE 261 Aircraft Systems and Propulsion (2-3)** 3 hrs.  
Introduction to aircraft systems, including airframe construction and design, propulsion systems, fluid power systems, and auxiliary systems, such as cabin environment, ice and rain control, fire warning and control, and fuel systems. Prerequisites: MATH 122, PHYS 205, PHYS 206.

**AAE 361 Flight Vehicle Aerodynamics (3-3)** 4 hrs.  
A study of incompressible aerodynamics of flight vehicles with emphasis on the effects of aerodynamics on vehicle design. Computer applications to the solution of the problems of flight vehicle aerodynamics. Prerequisite: ME 356.

**AAE 450 Flight Vehicle Performance (3-0)** 3 hrs.  
A study of flight vehicle performance with an emphasis on the effect of aerodynamics on vehicle design. Computer applications to the solution of the problems of flight vehicle performance. Prerequisite: AAE 361.

**AAE 459 Flight Test Engineering and Design (1-6)** 3 hrs.  
Analysis and design of in-flight experiments, excluding expansion of the aircraft's flight envelope. Includes microprocessor-based data acquisition system and electronic sensor interfacing. Laboratory projects emphasize the pre-test, flight and post-flight phases of flight testing with an emphasis on safety of flight issues. Prerequisite: ME 356 and AAE 450.

**AAE 460 Aircraft Stability and Control (3-0)** 3 hrs.  
Analysis and synthesis of aircraft stability and control. Design of the aircraft control surfaces for different configurations to provide the required stability and control power. Man-machine interaction and effect on control surface sizing. Prerequisite: AAE 361, ME 356.

**AAE 463 Aircraft Structural Design (4-0)** 4 hrs.  
Structural design of aircraft emphasizing structural integrity under imposed static and dynamic loads. Design considerations include weight, cost, and mission constraints. Prerequisite: ME 356.

**ME 220 Processes and Materials in Manufacturing (3-3)** 4 hrs.  
Manufacturing principles and organization, principal processes used to make metal, plastic and ceramic parts, design considerations for computer-integrated manufacturing, simultaneous engineering.

**ME 232 Thermodynamics (1-3)** 3 hrs.  
Fundamental laws of classic thermodynamics including ideal and non-ideal processes. Applications are studied in relationship to the traditional thermodynamic cycles and to alternate energy systems such as solar and wind energy. Prerequisites: MATH 123, PHYS 205, PHYS 206.

**ME 250 Materials Science (3-0)** 3 hrs.  
First course in the science of engineering materials. Relationships between microscopic structure and the mechanical properties of metals, polymers and ceramics are developed. Includes treatment of environmental effects on all materials and optical and electronic properties. Prerequisites: CHEM 101 or 102, MATH 122.

**ME 253 Statics and Mechanics of Materials (4-0)** 4 hrs.  
Forces and moments acting upon structural bodies under static loads. Concepts of vectors, free-body diagrams, shear and moment diagrams, centroids, moments of inertia and friction. Compression, tension, shear, torsion, and bending in structural members, including stress distribution, deflection, and buckling. (Not for students required to take ME 257). Prerequisites: MATH 123, CS 106.

**ME 256 Statics (3-0)** 3 hrs.  
Forces and moments acting upon structural bodies under static loads. Concepts of vectors, free-body diagrams, shear and moment diagrams, centroids, moments of inertia and friction. Prerequisites: MATH 123, CS 106.

**ME 257 Mechanics of Materials (4-0)** 4 hrs.  
Compression, tension, shear, torsion, and bending in structural members including stress distribution, deflection, buckling, and fatigue on engineering materials. Design and selection of simple machine members and a knowledge of design codes and standards are applied. Prerequisite: ME 256.
ME 258 Dynamics (3–0)
3 hrs.
Kinematics and kinetics of particles, rigid bodies in translation, rotation, and plane motion. Includes impulse-momentum and work-energy methods. Introduction to vibrations. Prerequisites: ME 256 or ME 253, PHYS 205, PHYS 206.

ME 335 Mechanical and Aeronautical Engineering Laboratory (2–3)
3 hrs.

ME 356 Fluid Mechanics (3–0)
3 hrs.
Analysis of fluid systems and problems. Incompressible and compressible fluids, turbulent and laminar flows, subsonic and supersonic flows are covered. Pipe systems, flow orifices, and open channels. (Credit may not be earned in both ME 356 and ME 364.) Prerequisites: ME 258, MATH 374.

ME 358 Mechanism Analysis (3–0)
3 hrs.
Analysis of displacement, velocity, and acceleration in mechanisms by analytical and graphical methods. Introduction to mechanism synthesis with computer applications. Prerequisite: ME 258.

ME 360 Control Systems (3–0)
3 hrs.

ME 362 Theory of Engineering Experimentation (3–0)
3 hrs.
Principles of experimental design using a statistical approach. Statistical analysis of experimental data with computer applications. Prerequisites: MATH 123, CS 106.

ME 365 Machine Design I (2–3)
3 hrs.
The application of engineering principles to the fundamental design of machine mechanisms and basic systems. Prerequisites: ME 220 or AEE 261, ME 250, ME 257, ME 358. ME 358 may be taken concurrently.

ME 367 Internal Combustion Engines I (2–3)
3 hrs.
Introduction to internal combustion engine systems and mechanical design. Consideration of factors affecting engine design and principles of engineering science. Analysis of common engine systems for reciprocating and continuous flow internal combustion engines. Prerequisite: ME 272, MATH 258, MATH 259.

ME 375 Experimental Stress Analysis (2–3)
3 hrs.
Principles and methods of non-destructive testing including internal and surface industrial methods using biomechanical techniques, planning of test procedures, interpretation of test results, and technical report preparation. NOT FOR ENGINEERING CREDIT. Prerequisites: ME 251, CM 256.

ME 431 Heat Transfer (3–0)
3 hrs.
Steady state and transient conduction, radiation functions, radiation networks, natural and forced convection, design of heat exchangers, and computer applications. Prerequisites: ME 232, ME 356.

ME 432 Thermodynamics II (3–0)
3 hrs.
Advanced topics including gas-vapor mixtures, combustion, and compressible flow. Prerequisites: ME 232, ME 356. ME 356 may be taken concurrently.

ME 433 Environmental Systems Design in Buildings (3–1)
3 hrs.
Theory of the conditioning of air, applications to the design of systems to control temperature, humidity, distribution, and ventilation. Computer simulation of buildings and systems. Prerequisites: ME 431, ME 432.

ME 439 Design of Thermal Systems (2–3)
3 hrs.
Application of energy concepts to thermal fluid flow problems. Open-ended design projects in incompressible and compressible fluid flows, thermodynamics, heat transfer, power generation, alternate energy systems including computer simulations. Experimentation and theoretical analysis verification with data analysis and report preparation. Prerequisites: ME 335; ME 431; ME 432.

ME 450 Non-Metallic Materials (3–0)
3 hrs.
Advanced course in the science of non-metallic engineering materials - polymers, elastomers, composite materials and ceramics. Mechanical properties useful to design are related to atomic structure and fabrication processes. Includes fracture mechanics of polymers and composites. Prerequisites: ME 250, ME 365.

ME 451 Design of Solar Systems (3–0)
3 hrs.
Analysis of alternate energy options. Design of complete solar system including collector, storage, and controls. Economics and long-term performance of solar systems using computer-aided design programs. Prerequisites: ME 335.

ME 453 Machine Design II (2–3)
3 hrs.
The application of mechanical engineering concepts to the mechanical synthesis process. Computer-aided design, computer modeling, and optimization applied to the synthesis of a system. Prerequisites: ME 362, ME 365.

ME 456 Subsonic Aerodynamics (3–0)
3 hrs.
Subsonic aerodynamics for engineers. The study of incompressible and compressible flow around bluff bodies. Computer applications to the solution of aerodynamic problems. Prerequisite: ME 356.

ME 457 Experimental Solid Mechanics (2–3)
3 hrs.
Stress analysis theories; Principles and methods of non-destructive testing including electrical resistance strain gage techniques, photoelasticity, and laser-based techniques. Experimentation and theory evaluation including planning, testing, and data analysis with report preparation. Prerequisites: ME 250, ME 257, ME 335.

ME 459 Dynamics of Machinery (3–0)
3 hrs.
Analysis of static, dynamic, and combined forces in the design of machines. Balancing of machines including multicylinder engines. Gyrosopic forces. Computer applications. Prerequisite: ME 358.

ME 465 Vehicle Dynamics (3–0)
3 hrs.
Design of ground vehicle suspension and steering systems. Vehicle ride, handling and safety systems. Passive and active suspension control. Prerequisites: ME 358, ME 360, ME 365.

ME 467 Internal Combustion Engines II (3–0)
3 hrs.

ME 468 Engine Design (2–3)
3 hrs.
Application of the knowledge of the mechanics, thermodynamics and fluid mechanics to the design of internal combustion engines to meet specific mission requirements. Optimization of the design using computer modeling and parametric studies. Prerequisites: ME 358, ME 467 or ME 432.

ME 470 Vehicle Structural Design (3–0)
3 hrs.
Structural design of surface and air vehicles to meet specific mission requirements. Design of structures with minimum weight and cost while maintaining structural integrity under the imposed loads. Prerequisites: ME 358 and ME 365.

ME 479 Mechanical and Aeronautical Engineering Project Planning (1–0)
1 hr.
An introductory to the design process, including problem definition, decision making and project planning. Goal of the course is to develop a project proposal and work plan for a major design project. Prerequisite: ME 335; ME 360, and approval of advisor or a minimum of two upper level design courses.

ME 480 Mechanical and Aeronautical Engineering Project I (1–6)
3 hrs.
An engineering experience in completing an open-ended design project including synthesis, analysis, evaluation, and presentation. Classroom discussion subjects include legal, ethical and professional aspects of engineering practice. Prerequisites: ME 479; ME 453 or ME 439 or AEE 469 or ME 470.

ME 481 Vehicle Design (2–3)
3 hrs.
Design of vehicle systems and/or subsystems. Prerequisites: ME 232, ME 257, ME 258, ME 250, or by permission of instructor.

ME 490 Independent Research and Development 1–4 hrs.
Individual research or special project. Available only by special arrangement with an instructor and approved by the department chair. Prerequisite: Consent of department.

ME 495 Topics in Mechanical Engineering: Variable Topics 1–4 hrs.
A specialized course dealing with some particular area of mechanical engineering not included in other course offerings. May be repeated for credit with a different topic up to six credits. Prerequisite: Consent of department.

ME 498 Independent Readings 1–6 hrs.
An independent readings assignment, the description and purpose of which will be set forth on a form available at the department office. Prerequisite: Consent of department.

ME 499 Independent Studies 1–6 hrs.
An independent studies assignment available only by special arrangement with an instructor and approved by the department chair. Prerequisite: Consent of department.
ME 530 Theoretical and Computational Fluid Mechanics (3-0)
3 hrs.
The theory and numerical implementation of ideal flow, viscous effects, and exact solutions of Navier-Stokes equations. Special emphasis will be on planning methods, conformal mapping, and singular distributions for flows around two- and three-dimensional bodies. Familiarity with IMS and some Fortran experience are required. Prerequisites: ME 356 and MATH 506, or consent of instructor.

ME 540 Automatic Control of Flight Vehicles (3-0)
3 hrs.
Synthesis of basic auto pilot and stability augmentation systems for flight vehicles. Advanced flight control structures including integrated flight control, control of inertial cross-coupling. Human pilot plus airframe and the relationships with flying qualities requirements. Extensive use of commercial software tools. Prerequisite: ME 360.

ME 542 Flight Simulation (3-0)
3 hrs.
Introduction to nonlinear, non real-time six degree-of-freedom computer simulations of aircraft. Modeling and buildup of aerodynamic and thrust data bases and modeling of control surfaces, actuators, and power plants. Implementation of continuous and sampled-data flight control laws. Some use of commercial software tools. Prerequisites: ME 360, AAE 460.

ME 545 Computational Fluid Dynamics I (3-0)
3 hrs.
Basics of Computational Fluid Dynamics (CFD) including classification of partial differential equations, finite difference formulations, parabolic partial differential equation, stability analysis, elliptic equations, hyperbolic equations, scalar representation of the Navier-Stokes equations and grid generation. Prerequisites: ME 356, CS 201 or CS 306.

ME 553 Advanced Product Engineering (3-0)
3 hrs.
An engineering design project from concept to adoption. Static and dynamic analysis, Mechanical systems design and layout. Prerequisites: ME 360, ME 453.

ME 555 Intermediate Dynamics (3-0)
3 hrs.
Three dimensional kinematics and dynamics of rigid bodies, equations of motion, Lagrange's equations; work and energy; impulse and momentum; virtual work; stability; computer simulation intro to vibrations. Prerequisites: ME 258, MATH 374.

ME 558 Mechanical Vibrations (3-0)
3 hrs.
A study of the oscillatory motion of physical systems with emphasis on the effects of vibrations on the performance and safety of mechanical systems. Prerequisites: ME 258, MATH 374.

ME 559 Machine Dynamics (3-0)
3 hrs.
Static and dynamic force analysis of mechanisms such as linkage, cams, and shafts, dynamics of reciprocating engines, balancing, and spatial mechanisms. Prerequisite: ME 358.

ME 560 Engineering Analysis (3-0)
3 hrs.
Application of vector analysis and differential equations to the solution of complex engineering problems. Prerequisite: ME 360 or equivalent.

ME 561 Finite Element Method (3-0)
3 hrs.
Weighted residual methods, finite element techniques in one-, two- and three-dimensional problems of heat transfer, fluid flow, structures and elasticity, time dependent problems, higher order elements, and non-linear problems. Prerequisite: MATH 506 or equivalent.

ME 562 Application of Numerical Methods in Engineering (3-0)
3 hrs.
Finite difference methods for initial value and boundary value problems; 2D finite differencing, boundary element methods applications to differential equations of heat transfer, fluid flow, and solid mechanics. Prerequisite: MATH 506 or equivalent.

ME 564 Engineering Noise Control (3-0)
3 hrs.

ME 571 Gas Dynamics (3-0)
3 hrs.
Basic equations of compressible flow, isentropic relationships, and normal and oblique shock. Prandtl-Meyer expansion, Faroo line, and Rayleigh line flow. Applications to nozzle, diffusers, and supersonic wind tunnels. Linearized flows, method of characteristics. Prerequisites: ME 431 and ME 432.

ME 572 Advanced Thermodynamics (3-0)
3 hrs.
Topics including the conditions of equilibrium, process and thermodynamic engines, the extremum principle, Maxwell relations, stability of thermodynamic systems, phase transitions, chemical thermodynamics, irreversible thermodynamics, and an introduction to the statistical thermodynamics. Prerequisites: ME 431 and ME 432.

ME 573 Engineering Materials (3-0)
3 hrs.
Material selection for resistance to both load and environment. Design parameters for material selection and various metal systems, corrosion, service failures, and mechanical behavior of engineering alloys at high and low temperatures. Prerequisite: ME 250.

ME 575 Tribology—Principles and Applications (3-0)
3 hrs.
Surface chemistry, topographical measurement and description, contact mechanics, wear mechanisms, lubrication and film formation, application to friction and wear situations in machine elements. Prerequisites: ME 356, ME 365.

ME 576 Principles of Heat Exchanger Design (3-0)
3 hrs.
Overall heat transfer coefficients, UA-LMTD method, E-NNTU method, counterflow and cross flow heat exchangers, heat transfer enhancement, phase-change heat exchangers, fouling phenomena, heat exchanger systems, and optimization of heat exchangers. Prerequisite: ME 431.

ME 577 Vapor-Compression Refrigeration (3-0)
3 hrs.

ME 580 System Modeling and Simulation (3-0)
3 hrs.
This is a first course in the principles of mathematical modeling of stochastic and deterministic systems. It will focus on analytical models, mathematical rigor and computer simulation of problems. Students will simulate a number of systems using appropriate stochastic and deterministic models using a computer. This course is cross-listed as ECE 580. Prerequisites: ECE 371, ECE 380 or equivalent.

ME 585 Mechatronics (3-0)
3 hrs.
A course in fundamentals of motion control, primarily as it is applied to robotics. Students will learn the basics of control systems as applied to multi-axis servo systems. Appropriate time will be devoted to develop a sound basis in the electro-mechanical discipline. This course is cross-listed as ECE 585. Prerequisites: ECE 210, ME 258 and ECE 371 or ME 360.

ME 586 System Identification (3-0)
3 hrs.
This is a course in model determination. Students will learn the basics of defining system structure and techniques for finding parametic values. The emphasis will be placed on the application of modeling to practical problems in the student's specific discipline. This course is cross-listed as ECE 586. Prerequisite: ECE 580 or ME 580.

ME 595 Topics in Mechanical Engineering
1-4 hrs.
A specialized course dealing with some particular area of Mechanical Engineering not included in other course offerings. May be repeated for credit with a different topic up to six total credits. Prerequisite: Consent of department.
PAPER AND PRINTING SCIENCE AND ENGINEERING

Raja G. Aravamuthan
John H. Cameron
Dennis E. Darling
Paul D. Flemming
Thomas W. Joyce
Lois Lemon
Peter E. Parker
David K. Peterson
Dewei Qi
Brian L. Scheller
Gerald Wouch
Adjunct Faculty
Do Ik Lee
Jay Unwin

The Department of Paper and Printing Science and Engineering offers three B.S. programs in Paper Science, Paper Manufacturing, and Paper Engineering, and minor programs in Paper Science and Engineering, Chemical Engineering, and Industrial and Manufacturing Engineering. The academic advisors provide extensive scientific and technical education to prepare graduates for professional employment in the research and development, technical-manufacturing, and technical-marketing areas of the paper, pulp, environmental, printing and related fields. The breadth and depth of the programs are such that a significant number of graduates have progressed into research, production, management and marketing positions and into graduate studies.

Academic Advising

Students should contact the Paper and Printing Science and Engineering academic advisor as early as possible. An advisor is available to assist in individual program planning, recommend electives appropriate to a student’s educational objectives, discuss employment opportunities, and to help solve academic problems. Substitutions and transfer credits must be approved by a department advisor, curriculum committee, and department chairman. The academic advisor for Paper Science and Paper Engineering is Barbara Vienisko, located in Room 2630 McCracken Hall. Appointments may be made by calling (616) 387-2800. By calling (616) 387-2775. The academic advisor for Printing is Karen Moses, located in Room 1104 Welborn Hall. Appointments may be made by calling (616) 387-2800.

Work Experience

Industrial experience is encouraged through employment by paper, printing or related companies for at least one of the three summers, as well as through employment in the outstanding pilot plants of the department. The pilot plants and laboratory facilities are among the best in the world.

Additional Information

General information regarding advising, scholarships, and special programs of interest to students in this department may be found in the beginning of the College of Engineering and Applied Sciences’ section of the catalog.

REQUIRED PREREQUISITE GRADE

Students graduating from Paper Science, Paper Engineering/Process, Paper Engineering/Enrollment, and Paper Science and Engineering minor must have a grade of “C” or better in all PAPP prefixed prerequisite courses.

MINOR A minor in paper science and engineering may be earned by completing the following 20 semester hours of departmental courses: PAPP 100, PAPP 103, PAPP 204, PAPP 306 and PAPP 352. The minor is most suitable for other engineering graduates and those with a degree in physics and chemistry graduates, as they will have most of the prerequisites for these courses.

Bachelor of Science Degree

Requirements

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to University requirements stated elsewhere in this bulletin:

1. Students must earn a “C” or better grade in all PAPP prefixed prerequisite courses. The requirement of a PAPP prefixed prerequisite course will not be fulfilled with a grade less than “C”.
2. No more than two grades of “D” or “DC” may be presented for graduation.
3. At least two of the General Education courses must be at the 300-400 level.
4. Students must complete the following program of 136 semester credit hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall.

Baccalaureate Writing Requirement

Students who have chosen the Paper Science major will satisfy the Baccalaureate Writing Requirement by successfully completing PAPP 310 Work Experience/Coop and PAPP 485 Research Design.

First Semester — 17 hours
PAPP 100 Introduction to Pulp and Paper Manufacture 3
CHEM 101 General Chemistry I OR CHEM 102 General Chemistry I 4
CS 106 BASIC for Engineers 1
PENN Physical Education 2
AREA I General Education 3

Second Semester — 16 hours
PAPP 103 Printing Processes 2
CHEM 120 General Chemistry II 4
MATH 123 Calculus I 4
IME 102 Technical Communication 1
AREA II General Education 3

Third Semester — 18 hours
PAPP 203 Pulping and Bleaching 4
IME 261 Engineering Statistics OR MATH 261 Engineering Statistics 3
PHYS 205 Mechanics and Heat 4
CHEM 360 Organic Chemistry I 4
AREA III General Education 3

Fourth Semester — 19 hours
PAPP 204 Stock Preparation and Papermaking 4
PAPP 261 Environmental Engineering 3
MATH 272 Vector and Multivariate Calculus 4
PHYS 207 Electricity and Light 4
AREA IV General Education 4

Fifth Semester — 17 hours
PAPP 305 Paper Physics 4
PAPP 306 Material and Energy Balance 4
PAPP 333 Carbohydrate and Lignin Chemistry 3
AREA V General Education (ECON 201) 3
*ELECTIVE 3

Sixth Semester — 17 hours
PAPP 311 Unit Operations in Chemical Engineering I 3
PAPP 312 Unit Operations in Chemical Engineering II 3
PAPP 342 Coating 4
PAPP 352 Recycling and Denking 3
MATH 374 Introduction to Linear Algebra and Differential Equations 4

Seventh Semester — 16 hours
PAPP 310 Work Experience/Co-op 1
PAPP 440 Seminar 1
PAPP 483 Process Control I 4
PAPP 485 Research Design 3
CHEM 430 Physical Chemistry I 3
*ELECTIVE 4

Eighth Semester — 16 hours
PAPP 430 Surface and Wet End Science 3
PAPP 440 Seminar 1
CHEM 436 Physical Chemistry Lab 2
*ELECTIVE 3
*ELECTIVE 3
*ELECTIVE 4

*ELECTIVES — Students must select a minimum of 17 credit hours from the following.

PAPP 310 Work Experience/Co-op 2
PAPP 341 Converting Processes 2
PAPP 484 Process Control III 3
PAPP 486 Independent Research 3
CHEM 222 Quantitative Analysis 4
CHEM 361 Organic Chemistry II 4
CHEM 431 Physical Chemistry II 3
CHEM 436 Physical Chemistry Lab 1
CHEM 520 Instrumental Methods 3
MATH 567 Statistical Design and Analysis 4

Priority Electives are shown in italic type.

Paper Engineering

Bachelor of Science in Engineering (Paper) Degree

Admission

1. To be admitted to this Engineering curriculum, a student must complete all Pre-engineering requirements and/or behavioral sciences. The sequence of “C” or better. These requirements may be found in the beginning of the College of Engineering and Applied Sciences section. The Pre-engineering course requirements for this curriculum are in darker print in the schedule below.
2. Students seeking admission to this curriculum must submit an application following procedures established by the College of Engineering and Applied Sciences. Upper level transfer students should complete an application prior to their first semester of enrollment. Only those students in good academic standing as defined by the University will be admitted to this curriculum.

Paper Engineering Program Requirements

Candidates for the Bachelor of Science in Engineering (Paper) degree must satisfy the following requirements in addition to those required by Western Michigan University:

1. All students must complete a sequence of two courses (minimum of six credit hours) in the humanities, fine arts, social sciences, and/or behavioral sciences. The sequence must begin with a course at the 100-200 level and conclude with a course at the 300-400 level. Both courses must have the same course prefix, must provide depth, and must not be a selection of unrelated introductory courses. The sequence may
be selected from General Education Areas I, II, III, IV, and V as part of the University General Education requirements. If the University General Education requirements have been otherwise satisfied, the sequence may be from any of the humanities, fine arts, social sciences, and/or behavioral sciences.

2. Students must earn a "C" or better grade in all PAPR prefixed prerequisite courses. The requirement of a PAPR prefixed prerequisite course will not be fulfilled with a grade less than "C."

3. No more than two grades of "D" or "DC" may be presented for graduation.

4. At least two of the General Education courses must be at the 300-400 level.

5. Students must complete the following program of 136 semester credit hours which includes the courses in one of the following elective sequences: Paper Engineering/Process or Paper Engineering/Environmental. One sequence must be elected and taken in its entirety.

The schedules below are examples leading to graduation in eight semesters, beginning in fall.

Pre-engineering requirements are in darker italic print.

Baccalaureate Writing Requirement
Students who have chosen the Paper Engineering major will satisfy the Baccalaureate Writing Requirement by successfully completing PAPR 310 Work Experience/Co-op and PAPR 48S Research Design.

Paper Engineering/Process

First Semester — 17 hours
PAPR 100 Introduction to Pulp and Paper Manufacture 3
CHEM 101 General Chemistry I OR
102 General Chemistry I 4
MATH 122 Calculus I 4
CS 106 BASIC for Engineers 4
PEGN Physical Education 2
AREA I General Education 3

Second Semester — 16 hours
PAPR 103 Printing Processes 2
CHEM 120 General Chemistry II 4
MATH 123 Calculus II 4
IME 102 Technical Communications 3
AREA II General Education 3

Third Semester — 18 hours
PAPR 203 Pulping and Bleaching 4
IME 261 Engineering Statistics OR
MATH 261 Engineering Statistics 3
PHYS 205 Mechanics and Heat 4
CHEM 360 Organic Chemistry I 4
AREA III General Education 3

Fourth Semester — 19 hours
PAPR 204 Stock Preparation and Papermaking 4
PAPR 261 Environmental Engineering 3
MATH 272 Vector and Multivariate Calculus 4
PHYS 207 Electricity and Light 4
AREA IV General Education 4

Fifth Semester — 17 hours
PAPR 305 Paper Physics Fundamentals 4
PAPR 306 Material and Energy Balance 4
PAPR 333 Carbohydrate and Lignin Chemistry 3
AREA V General Education (ECON 201) 3
*ELECTIVE 3

Sixth Semester — 17 hours
PAPR 311 Unit Operations in Chemical Engineering I 3
PAPR 312 Unit Operations in Chemical Engineering II 3
PAPR 342 Coating 4
PAPR 352 Recycling and Denking 3
MATH 374 Introduction to Linear Algebra and Differential Equations 4

Seventh Semester — 16 hours
PAPR 310 Work Experience/Co-op 1
PAPR 440 Seminar 1
PAPR 483 Process Control 4
PAPR 485 Research Design 3
CHEM 430 Physical Chemistry I 3
*ELECTIVE 4

Eighth Semester — 16 hours
PAPR 430 Surface and Wet End Science 3
PAPR 440 Seminar 1
PAPR 460 Process Engineering and Design 4
*ELECTIVE 4

*ELECTIVES — Students must select a minimum of 15 credit hours from the following:
PAPR 310 Work Experience/Co-op 2
PAPR 341 Converting Processes 2
PAPR 484 Process Control II 4
PAPR 486 Independent Research 3
MATH 567 Statistical Design and Analysis 4
MAE 253 Statistics and Mechanics of Materials 4
ECE 210 Circuit Analysis 4
IME 310 Engineering Economy 3
*MGMT 300 Fundamentals of Management 3
*MGMT 453 Organizational Behavior 3

Priority electives are shown in italics. Not more than one of these courses can be selected.

Paper Engineering/Environmental

First Semester — 17 hours
PAPR 100 Introduction to Pulp and Paper Manufacture 3
CHEM 101 General Chemistry I OR
CHEM 102 General Chemistry I 4
MATH 122 Calculus I 4
CS 106 BASIC for Engineers 4
PEGN Physical Education 2
AREA I General Education 3

Second Semester — 16 hours
PAPR 103 Printing Processes 2
CHEM 120 General Chemistry II 4
MATH 123 Calculus II 4
IME 102 Technical Communications 3
AREA II General Education 3

Third Semester — 18 hours
PAPR 203 Pulping and Bleaching 4
IME 261 Engineering Statistics OR
MATH 261 Engineering Statistics 3
PHYS 205 Mechanics and Heat 4
CHEM 360 Organic Chemistry I 4
AREA III General Education 3

Fourth Semester — 19 hours
PAPR 204 Stock Preparation and Papermaking 4
PAPR 261 Environmental Engineering 3
MATH 272 Vector and Multivariate Calculus 4
PHYS 207 Electricity and Light 4
AREA IV General Education 4

Fifth Semester — 17 hours
PAPR 305 Paper Physics Fundamentals 4
PAPR 306 Material and Energy Balance 4
PAPR 333 Carbohydrate and Lignin Chemistry 3
AREA V General Education (ECON 201) 3
*ELECTIVE 3

Sixth Semester — 17 hours
PAPR 311 Unit Operations in Chemical Engineering I 3
PAPR 312 Unit Operations in Chemical Engineering II 3
PAPR 342 Coating 4
PAPR 352 Recycling and Denking 3
MATH 374 Introduction to Linear Algebra and Differential Equations 4

Seventh Semester — 16 hours
PAPR 310 Work Experience/Co-op 1
PAPR 440 Seminar 1
PAPR 483 Process Control 4
PAPR 485 Research Design 3
CHEM 430 Physical Chemistry I 3
*ELECTIVE 4

Eighth Semester — 16 hours
PAPR 430 Surface and Wet End Science 3
PAPR 440 Seminar 1
PAPR 460 Process Engineering and Design 4
*ELECTIVE 4

*ELECTIVES — Students must select a minimum of 19 credit hours from the following:
PAPR 310 Work Experience/Co-op 2
PAPR 341 Converting Processes 2
PAPR 484 Process Control II 4
PAPR 485 Research Design 3
CHEM 430 Physical Chemistry I 3

Priority electives are shown in italics. Not more than one of these courses can be selected.

Paper Engineering/Environmental

First Semester — 17 hours
PAPR 100 Introduction to Pulp and Paper Manufacture 3
CHEM 101 General Chemistry I OR
CHEM 102 General Chemistry I 4
MATH 122 Calculus I 4
CS 106 BASIC for Engineers 4
PEGN Physical Education 2
AREA I General Education 3

Second Semester — 16 hours
PAPR 103 Printing Processes 2
CHEM 120 General Chemistry II 4
MATH 123 Calculus II 4
IME 102 Technical Communications 3
AREA II General Education 3

Third Semester — 18 hours
PAPR 203 Pulping and Bleaching 4
IME 261 Engineering Statistics OR
MATH 261 Engineering Statistics 3
PHYS 205 Mechanics and Heat 4
CHEM 360 Organic Chemistry I 4
AREA III General Education 3

Fourth Semester — 19 hours
PAPR 204 Stock Preparation and Papermaking 4
PAPR 261 Environmental Engineering 3
MATH 272 Vector and Multivariate Calculus 4
PHYS 207 Electricity and Light 4
AREA IV General Education 4

Fifth Semester — 17 hours
PAPR 305 Paper Physics Fundamentals 4
PAPR 306 Material and Energy Balance 4
PAPR 333 Carbohydrate and Lignin Chemistry 3
AREA V General Education (ECON 201) 3
*ELECTIVE 3

Sixth Semester — 17 hours
PAPR 311 Unit Operations in Chemical Engineering I 3
PAPR 312 Unit Operations in Chemical Engineering II 3
PAPR 342 Coating 4
PAPR 352 Recycling and Denking 3
MATH 374 Introduction to Linear Algebra and Differential Equations 4

Seventh Semester — 16 hours
PAPR 310 Work Experience/Co-op 1
PAPR 440 Seminar 1
PAPR 483 Process Control I 4
PAPR 485 Research Design 3
CHEM 430 Physical Chemistry I 3
*ELECTIVE 4

Eighth Semester — 16 hours
PAPR 430 Surface and Wet End Science 3
PAPR 440 Seminar 1
PAPR 460 Process Engineering and Design 4
*ELECTIVE 4

*ELECTIVES — Students must select a minimum of 19 credit hours from the following:
PAPR 310 Work Experience/Co-op 2
PAPR 341 Converting Processes 2
PAPR 484 Process Control II 4
PAPR 485 Research Design 3
CHEM 430 Physical Chemistry I 3

Priority electives are shown in italics.
## College of Engineering and Applied Sciences

### Bachelor of Science Degree

Candidates for the Bachelor of Science degree in printing must satisfy all of the requirements of 127 hours of either the Marketing or the Management Option. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall.

### Baccalaureate Writing Requirement

Students who have chosen the printing major will satisfy the Baccalaureate Writing Requirement by successfully completing PAPR 358 Flexographic Presswork, PAPR 359 Gravure Presswork, and PAPR 454 Advanced Lithographic Technology.

### MANAGEMENT OPTION

#### First Semester — 17 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>MATH 116</td>
<td>Finite Mathematics</td>
<td>3</td>
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<tr>
<td>PAPR 150</td>
<td>Introduction to Graphic Arts*</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 157</td>
<td>Line and Halftone Photography</td>
<td>3</td>
</tr>
<tr>
<td>AREA V</td>
<td>General Education College Writing (IE 102 or BIS 142 or ENGL 105, recommended)</td>
<td>3</td>
</tr>
<tr>
<td>AREA I</td>
<td>General Education**</td>
<td>3</td>
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#### Second Semester — 16 hours

<table>
<thead>
<tr>
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<tr>
<td>CHEM 103</td>
<td>General Chemistry I</td>
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<tr>
<td>PAPR 253</td>
<td>Imaging</td>
<td>3</td>
</tr>
<tr>
<td>BIS 102</td>
<td>Introduction to Information Processing</td>
<td>3</td>
</tr>
<tr>
<td>CS 105</td>
<td>Introduction to Computers</td>
<td>3</td>
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<tr>
<td>ECON 201</td>
<td>Principles of Economics</td>
<td>3</td>
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<td>AREA II</td>
<td>General Education**</td>
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#### Third Semester — 18 hours

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<tbody>
<tr>
<td>PAPR 151</td>
<td>Typographic Layout and Design</td>
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<tr>
<td>PAPR 250</td>
<td>Lithographic Presswork</td>
<td>3</td>
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<tr>
<td>PAPR 251</td>
<td>Electronic Publishing</td>
<td>3</td>
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<tr>
<td>PAPR 259</td>
<td>Introduction to Gravure</td>
<td>3</td>
</tr>
<tr>
<td>MATH 216</td>
<td>Business Statistics</td>
<td>3</td>
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<tr>
<td>IME 150</td>
<td>Introduction to Manufacturing</td>
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#### Fourth Semester — 15 hours

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<tbody>
<tr>
<td>PAPR 357</td>
<td>Color Separation Processes</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 258</td>
<td>Introduction to Flexography</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 201</td>
<td>Accounting Concepts and Applications</td>
<td>3</td>
</tr>
<tr>
<td>IME 305</td>
<td>Work Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202</td>
<td>Principles of Economics</td>
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#### Fifth Semester — 15 hours

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<tbody>
<tr>
<td>PAPR 160</td>
<td>Introduction to Industrial Environmental Control</td>
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<tr>
<td>PAPR 362</td>
<td>Estimating</td>
<td>3</td>
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<tr>
<td>MGMT 300</td>
<td>Fundamentals of Management</td>
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<td>IME 326</td>
<td>Operations Planning and Control</td>
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</tr>
<tr>
<td>IME 328</td>
<td>Quality Assurance and Control</td>
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#### Sixth Semester — 15 hours

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<tbody>
<tr>
<td>PAPR 100</td>
<td>Introduction to Pulp and Paper Manufacturing</td>
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<tr>
<td>PAPR 462</td>
<td>Computer Estimating</td>
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<td>IME 402</td>
<td>Supervision of Industrial Operations</td>
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<td>**</td>
<td>General Education**</td>
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</tr>
<tr>
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#### Seventh Semester — 17 hours

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<th>Course</th>
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<th>Hours</th>
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<tbody>
<tr>
<td>PAPR 359</td>
<td>Gravure Presswork</td>
<td>3</td>
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<tr>
<td>PAPR 466</td>
<td>Printing Production Management</td>
<td>3</td>
</tr>
<tr>
<td>IME 403</td>
<td>Industrial Labor Relations</td>
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<td>**</td>
<td>General Education Electives**</td>
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#### Eighth Semester — 14 hours

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<th>Course</th>
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<th>Hours</th>
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<tbody>
<tr>
<td>PAPR 358</td>
<td>Flexographic Presswork</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 454</td>
<td>Advanced Lithographic Technology</td>
<td>3</td>
</tr>
<tr>
<td>IME 322</td>
<td>Safety in Industry</td>
<td>3</td>
</tr>
<tr>
<td>**</td>
<td>General Education Elective**</td>
<td>3</td>
</tr>
</tbody>
</table>

*Where judged appropriate by the department, an approved replacement course for PAPR 150 will be used.

**At least two of these courses must be at the 300-400 level.

***Electives to be selected with the Printing curriculum advisor.

### MARKETING OPTION

#### First Semester — 18 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 116</td>
<td>Finite Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 150</td>
<td>Introduction to Graphic Arts*</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 157</td>
<td>Line and Halftone Photography</td>
<td>3</td>
</tr>
<tr>
<td>AREA I</td>
<td>General Education**</td>
<td>4</td>
</tr>
<tr>
<td>AREA V</td>
<td>General Education Writing Requirement (IE 102 or BIS 142 or ENGL 105 recommended)</td>
<td>3</td>
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</table>

#### Second Semester — 16 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CHEM 103</td>
<td>General Chemistry</td>
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</tr>
<tr>
<td>PAPR 253</td>
<td>Imaging</td>
<td>3</td>
</tr>
<tr>
<td>BIS 102</td>
<td>Introduction to Information Processing</td>
<td>3</td>
</tr>
<tr>
<td>CS 105</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics</td>
<td>3</td>
</tr>
<tr>
<td>AREA I</td>
<td>General Education**</td>
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#### Third Semester — 15 hours

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>PAPR 151</td>
<td>Typographic Layout and Design</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 250</td>
<td>Lithographic Presswork</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 251</td>
<td>Electronic Publishing</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 259</td>
<td>Introduction to Gravure</td>
<td>3</td>
</tr>
<tr>
<td>MATH 216</td>
<td>Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>IME 150</td>
<td>Introduction to Manufacturing</td>
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#### Fourth Semester — 16 hours

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<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>PAPR 357</td>
<td>Color Separation Processes</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 258</td>
<td>Introduction to Flexography</td>
<td>3</td>
</tr>
<tr>
<td>BIS 260</td>
<td>Programming and Applications with Microcomputers</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202</td>
<td>Principles of Economics</td>
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<td>AREA I</td>
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#### Fifth Semester — 16 hours

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<th>Hours</th>
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<tr>
<td>PAPR 160</td>
<td>Introduction to Industrial Environmental Control</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 362</td>
<td>Estimating</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 370</td>
<td>Marketing Principles</td>
<td>3</td>
</tr>
<tr>
<td>**</td>
<td>General Education Elective**</td>
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#### Sixth Semester — 15 hours

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<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>PAPR 100</td>
<td>Introduction to Pulp and Paper Manufacturing</td>
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<td>PAPR 462</td>
<td>Computer Estimating</td>
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<td>MKTG 371</td>
<td>Marketing Research</td>
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<tr>
<td>MKTG 372</td>
<td>Purchasing Management</td>
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#### Seventh Semester — 16 hours

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<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>PAPR 359</td>
<td>Gravure Presswork</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 466</td>
<td>Printing Production Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 374</td>
<td>Advertising</td>
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#### Eighth Semester — 14 hours

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<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>PAPR 358</td>
<td>Flexographic Presswork</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 454</td>
<td>Advanced Lithographic Technology</td>
<td>3</td>
</tr>
<tr>
<td>IME 322</td>
<td>Safety in Industry</td>
<td>3</td>
</tr>
<tr>
<td>**</td>
<td>General Education Elective**</td>
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</tbody>
</table>

*Where judged appropriate by the department, an approved replacement course for PAPR 150 will be used.

**At least two of these courses must be at the 300-400 level.

***Electives to be selected with the Printing curriculum advisor.

### Paper and Printing Science and Engineering Courses (PAPR)

A list of General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog. Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-lab hours).

**PAPR 100 Introduction to Pulp and Paper Manufacturing** (2–3) 3 hrs.

A lecture-laboratory consideration of the fundamentals of paper manufacturing and equipment. Some time will also be spent on coating, printing, and other uses of paper. The student should acquire a basic understanding of the nature and scope of the paper industry. Prerequisite: High school chemistry, CHEM 101 or CHEM 102 or equivalent (concurrently).

**PAPR 103 Printing Processes** 2 hrs.

A course designed to provide non-printing majors a working knowledge of various printing processes: printability, performance factors of substrates, and different types of printing inks. Prerequisite: PAPR 100.

**PAPR 150 Introduction to Graphic Arts** (2–3) 3 hrs.

An introductory course describing the printing industry. Work is undertaken in copy preparation, composition, presswork, and bindery. A comparison of all printing methods will be included. Lithography and screen process printing will be stressed.

**PAPR 151 Typographic Layout and Design** (2–3) 3 hrs.

The principles of design and typography are studied and applied to the completion of a printed job. Practical experience in the elements of design, tools, and methods used by the graphic artist are included. Prerequisite: PAPR 150.

**PAPR 157 Line and Halftone Photography** (2–3) 3 hrs.

Line and halftone information and laboratory experience will include photographic materials, lenses and light, copy selection and preparation, camera and processing techniques, densitometry, and exposure calculation devices. Prerequisite: PAPR 150.

**PAPR 160 Introduction to Environmental Technology** (3–0) 3 hrs.

Designed for non-engineering majors, the course presents the major concepts and tools of environmental control applied to industrial processes.
as well as municipal emissions. The sources, behavior, effects and detection of pollutants are studied along with efficient management methods and regulations. The topics are covered in concert with public health, ethical, social, legal and economic concerns.

PAPR 203 Pulping and Bleaching (3–6, Lab Alternate Weeks) 4 hrs.
An advanced study of the processes involved in the production of paper-making fibers. Areas covered include refining, fourdriner and multi-plex operation, pressing and drying. Internal and surface treatment of the paper is discussed along with the effects of additives and fiber types. Analysis is made using chemical, physical, and engineering principles. Lectures are augmented by laboratory exercises and field trips. Prerequisite: PAPR 100 or PAPR 354, CHEM 101 or CHEM 102.

PAPR 204 Stock Preparation and Papermaking (3–6, Lab Alternate Weeks) 4 hrs.
A study of the processes involved in the formation, conditioning, and drying of a web of paper. Areas covered include refining, fourdriner and multi-plex operation, pressing and drying. Internal and surface treatment of the paper is discussed along with the effects of additives and fiber types. Analysis is made using chemical, physical, and engineering principles. Lectures are augmented by laboratory exercises, pilot plant operation, and field trips. Prerequisite: PAPR 100.

PAPR 250 Lithographic Presswork (2–3) 3 hrs.
Experience will be given on basic offset equipment regarding lithographic principles, press operations, mechanical adjustments, simple chemical reactions, as well as the advantages and disadvantages of lithography. Other areas to be studied are multi-color processes, inks, and papers. Prerequisite: PAPR 150.

PAPR 251 Electronic Publishing (2–3) 3 hrs.
A study of the reproductions of text for printing. The evolution of typesetting from handset type, hotmetal typesetting, phototypesetting, modern electronic page assembly will be traced. Basic composition fundamentals will be covered and modern composition will be examined. Prerequisite: PAPR 150, BIS 102, or CS 105.

PAPR 253 Imaging (2–3) 3 hrs.
Emphasis will be placed on determining correct page impositions. Register requirements, step and repeat procedures, color stripping, proofing and other related skills will be covered. Lithographic platemaking and processes will be emphasized. Prerequisite: PAPR 150.

PAPR 258 Introduction to Flexography (3–0) 3 hrs.
A study of the flexographic printing process focusing on the process, application, technology, and hardware. Prerequisite: PAPR 150.

PAPR 259 Introduction to Gravure Printing (3–0) 3 hrs.
A study of gravure printing focusing on the process, application, technology, and hardware. Prerequisite: PAPR 150.

PAPR 261 Environmental Engineering (3–0) 3 hrs.
The sources, impacts and management practices for gas, liquid and solid by-products of natural, industrial and municipal sources. Legal, ethical and economic implications included in evaluation of applicable emission reduction and emission control techniques and processes will be stressed. Prerequisite: CHEM 101 or 102, MATH 123, PHYS 113 or 205.

PAPR 305 Paper Physics Fundamentals (3–3) 4 hrs.
A lecture and laboratory study of wood fibers and their properties. Fundamentals of fiber and sheet strength properties are critically discussed, including the effect of paper-making operations. Both fracture and optical properties of paper are considered. Basics of paper testing and recaimed fibers are also studied. The laboratory consists of fiber identification and a papermaking trial. Prerequisites: PAPR 204, IME 261 or MATH 364.

PAPR 306 Material and Energy Balance (3–3) 4 hrs.
Fundamentals of chemical engineering dealing with behavior of gases, thermophysical properties of gases, liquids and solids, thermodynamics, and associated problem solving. Emphasis is on mass and energy balances. The laboratory period is utilized as a problem solving workshop. Prerequisites: CHEM 101 or CHEM 102, MATH 123, PHYS 205, PAPR 203 or PAPR 204.

PAPR 307 Process Engineering II (3–3) 4 hrs.
A continuation of PAPR 306 dealing with the unit operations of chemical engineering in the areas of fluid mechanics and heat transfer. Emphasis is on principles and equipment design and application. The laboratory period is devoted to problem solving and equipment design. Prerequisite: PAPR 306.

PAPR 310 Work Experience / Co-op 1–3 hrs.
Full-time employment in a pulp, paper, printing, or related industry that provides first-hand experience in a job capacity directly related to the student's major. A written report is required. Departmental consent is required. Open only to department majors. Prerequisite: Junior standing.

PAPR 311 Unit Operations in Chemical Engineering I (3–0) 3 hrs.
Unit operations in the area of fluid mechanics with extensive examples from pulp and paper process operations. Emphasis is on principles, equipment design, and application. The laboratory is centered around problem solving, design, and optimization issues. Relevant software will be used both in visualizing and solving industrial problems. Prerequisite: PAPR 306.

PAPR 312 Unit Operations in Chemical Engineering II (3–0) 3 hrs.
Unit operations in the area of heat transfer with extensive examples from pulp and paper process operations. Emphasis is on principles, equipment design, and application. The laboratory is centered around problem solving, design, and optimization issues. Relevant software will be used both in visualizing and solving industrial problems. Prerequisite: PAPR 306.

PAPR 333 Carbohydrate and Lignin Chemistry (3–0) 3 hrs.
Consideration of the chemistry of wood, pulp, and pulp by-products. Included topics are cellulose, lignin, accessory carbohydrates, extractives, extractives and paper and paperboard properties, special manufacturing processes, and other packaging materials will be covered. Prerequisite: PAPR 100 or PAPR 204.

PAPR 342 Coating (3–3) 4 hrs.
A lecture-lab course dealing with the fundamentals of pigmented and functional coating of paper and board. Coating rheology, evaluation of coated paper, and the performance of paper in the graphic arts will also be covered. Prerequisite: PAPR 305.

PAPR 348 Water Quality and Regulations (2–0) 2 hrs.
Physical, chemical and biological characteristics of water. Hydrology, governmental regulations, water and wastewater evaluation and treatment processes. Prerequisite: CHEM 101 or 102.

PAPR 349 Water Quality and Regulations (Lab) (0–3) 1 hr.
Physical, chemical and biological characteristics of water and wastewater treatment processes. Prerequisites: CHEM 101 or 102. Co-requisite: PAPR 348.

PAPR 350 Water Quality and Microbiology (2–3) 3 hrs.
A study of the physical, chemical, and biological characteristics of water. Topics stressed include hydrology, treatment of water, water quality, governmental regulations, evaluation, and the microbiology of water. Prerequisite: CHEM 101 or CHEM 102.

PAPR 351 Water Quality and Microbiology (2–0) 2 hrs.
A discussion of the physical, chemical, and biological characteristics of water. Topics stressed include hydrology, treatment of water, water quality, governmental regulations, evaluation, and the microbiology of water. (This is a non-laboratory course offered for adult education. Credit may not be earned in PAPR 351 by paper science or paper engineering majors.)

PAPR 352 Recycling and Denking (3–0) 3 hrs.
The recovery of waste paper and other fiber sources for use in the manufacturing of paper and paperboard products and other commercial applications. Waste fiber collection, dispersion, contaminant separation, denking, and product characteristics. Prerequisite: PAPR 203.

PAPR 353 Wastewater Treatment Systems (3–3) 4 hrs.
A study of the fundamental principles, design considerations, and use of the unit processes and operations employed in waste water treatment. Physical, physiochemical, and biological treatments are considered. Prerequisites: PAPR 305, PAPR 348, PAPR 349.

PAPR 357 Color Separation Processes (2–3) 3 hrs.
An analysis of various production color separation techniques, color correction, under color removal, and color proofing systems. Color theory, masking systems, desktop color indirect separations, and electronic scanner techniques will be investigated. Prerequisite: PAPR 157.
PAPR 358 Flexographic Presswork (2-3)
3 hrs.
A lecture/lab course which will emphasize rubber and photopolymer plate manufacture, mounting and proofing, water and solvent inks, substrates, and flexographic press operation. Prerequisite: PAPR 258.

PAPR 359 Gravure Presswork (2-3)
3 hrs.
This lecture/lab course will emphasize traditional cylinder manufacturing, proofing and gravure press operation. Press components, register controls, ink variables, doctor blades, and electrostatic assist will be stressed. Prerequisite: PAPR 259.

PAPR 360 Printing Processes (1-3)
2 hrs.
A course designed to provide Paper Science and Engineering students with a working knowledge of the various printing processes and their relation to the performance factors of paper. Prerequisite: PAS or PAE majors only.

PAPR 362 Estimating (3-0)
3 hrs.
Study of methods used in estimating the price of printed matter before manufacture and in the final pricing of that printed matter after manufacture. Prerequisite: Junior standing.

PAPR 371 Introduction to Independent Research (1-0)
1 hr.
Methods of approaching and planning independent research will be discussed. Familiarity with problems which may be encountered will be gained by attendance at the senior seminars. At the end of the course, the student will have selected a senior thesis or problem topic and an advisor. Prerequisite: Junior standing.

PAPR 403 Surface and Wet End Science (3-0)
3 hrs.
This course presents the important concepts of surface science, colloid chemistry and polymers. The concepts are illustrated by considering their application to operations in the paper industry. Subjects covered include surface tension, adsorption and wetting, colloids, foams and emulsions and wet additives such as retention aids, strength resins, defoamers and drainage aids. Prerequisites: CHEM 360 or CHEM 365; PAPR 261.

PAPR 421 Process and Design (3-0)
4 hrs.
General principles of design used to review, develop and optimize pulp and paper manufacturing processes and facilities. Installation and operating costs, environmental and resource concerns, and performance and safety standards will be used to evaluate alternative solutions. Oral and written reports of individual and team efforts. Prerequisites: PAPR 362; PAPR 261; PAPER 261; PAPR 312; PAPR 352; or permission of instructor.

PAPR 422 Computer Estimating (1-2)
2 hrs.
A study of methods used in estimating the price of printed materials before manufacture and in the final pricing of that printed matter. Computerized estimating systems and techniques will be used in a lab setting. Prerequisite: PAPR 362.

PAPR 464 Modern Printing Practices (2-0)
2 hrs.
Study, development, application of printing management/marketing production practices. Technical short courses offered by production and service industries may be utilized. May be elected in two hour blocks to a maximum of six hours. Prerequisite: Junior standing.

PAPR 466 Printing Production Management (3-0)
3 hrs.
Managerial procedures used in printing industries to forecast, plan, schedule, and record production to control production costs. Hourly costs of printing machines will be developed by students. Prerequisite: Junior standing.

PAPR 470 Senior Thesis I (0-4 Min.)
2 hrs.
This course is intended to increase the student's ability to solve a research or technical problem. The student will analyze a problem and use this analysis to design an experimental investigation. The student will commence experimental work and give written summaries of literature search and experimental program. Each student will be assigned an advisor for the problem. Weekly participation at student-staff seminars and participation at PAPR 440, Current Topics, is required. Prerequisites: PAPR 371, paper science major.

PAPR 471 Senior Thesis II (0-6 Min.)
3 hrs.
A continuation of PAPR 470, including completion of laboratory work and preparation of a formal final report. A formal oral presentation will be given. Weekly participation at student-staff seminars and participation at PAPR 440, Current Topics, is required. Prerequisite: PAPR 470.

PAPR 472 Senior Engineering Problem I (0-4 Min.)
2 hrs.
This course is intended to increase the ability of an engineering student to analyze and solve a design problem. An individual advisor will be assigned. The student will analyze a problem, design an experimental investigation as needed, and present a completed program in both written and oral form. Weekly participation at student-staff seminars and participation at PAPR 440, Current Topics, is required. Prerequisites: PAPR 371, paper engineering major.

PAPR 473 Senior Engineering Problem II (0-6 Min.)
3 hrs.
A continuation of PAPR 472, including completion of laboratory or design work and preparation of a formal report. A formal oral presentation will be given. Weekly participation at student-staff seminars and participation at PAPR 440, Current Topics, are required. Prerequisites: PAPR 472.

PAPR 481 Instrumentation and Process Control (3-0)
3 hrs.
An introduction to automatic control covering the areas of control methods, theory, loop analysis, and industrial control equipment including sensors, transmitters, controllers, and control valves. Prerequisites: CHEM 101 or CHEM 102, MATH 123, PHYS 211.

PAPR 482 Application of Control Systems (3-0)
3 hrs.
The use of instrument systems and digital computers to control pulping and paper-making processes. Deals with the design of combination control systems, digital computer components, and computer control strategies in the paper industry. Prerequisite: PAPR 481.

PAPR 483 Process Control I (4-0)
4 hrs.
Introduction to automatic control covering control methods, theory, loop analysis, and control loop hardware including sensors, transmitters, controller and control valves. Includes the necessary secondary loop topics such as circuits (RC and RL) and circuit laws. Prerequisites: PAPR 311; PAPR 312.

PAPR 484 Process Control II (4-0)
4 hrs.
The use of instrument systems, digital computers and programmable logic controllers to control pulping, papermaking and chemical recovery processes. Design of control systems, principles of analog and digital systems, digital signal processing and architecture of programmable logic controllers. Prerequisite: PAPR 483.

PAPR 485 Research Design (3-0)
3 hrs.
Research selection, planning, design, and writing. A research problem selected in consultation with faculty. Students will define and analyze the problem, do a critical review of the literature; and design and write a documented research program to increase understanding and knowledge about the problem. Prerequisite: Senior standing in major.

PAPR 486 Independent Research (3-0)
3 hrs.
Adds the laboratory research component to PAPR 485. Students may continue the problem defined and analyzed in PAPR 485 or select a new topic. A detailed report which includes literature analysis, experimental design, results and conclusions is required. Prerequisite: PAPR 485.

PAPR 495 Topics in Paper and Printing 1-4 hrs.
A special course dealing in some particular subject of interest in Pulp and Paper and/or Printing. May be repeated for credit with different topics. Prerequisite: Permission of instructor.

PAPR 499 Independent Studies 1-6 hrs.
Offers paper science and engineering and printing majors with good scholastic records a program of independent study in an area arranged in consultation with the instructor. One to three hours credit per semester, cumulative to six hours. Prerequisite: Permission of instructor.
The College of Fine Arts offers a variety of curricula and subjects in the principal interest areas of the visual and performing arts.

The Department of Art offers the following degree programs: Bachelor of Fine Arts with a major in Art and an emphasis in either Ceramics, Jewelry/Metalsmithing, Painting/Watercolor, Photography, Printmaking, or Sculpture; Bachelor of Fine Arts with a major in Graphic Design; Bachelor of Arts with a major in Art; Bachelor of Arts with a major in Art Teaching.

The Department of Dance offers two undergraduate degrees: Bachelor of Fine Arts in Dance and Bachelor of Arts in Dance. The Department of Dance participates with the School of Music and Department of Theatre in offering the music theatre performance program.

Three undergraduate degree programs in music are available: Bachelor of Music with majors in music performance, composition, jazz studies, music education, music history, music theory, and music therapy; Bachelor of Science with a major in music and a minor in another academic area. Teacher certification is earned in the music education and elementary education programs. The School of Music participates with other University departments in offering a music theatre performance degree.

Theatre programs lead to the Bachelor of Arts degree in areas of performance, design-technical theatre, and theatre education. The department also participates with other University departments in offering a music theatre performance program.

Students are encouraged to inquire about curricular combinations not listed specifically in the catalog.

In the belief that arts understanding, involvement, and appreciation are an important part of liberal education, the College of Fine Arts offers many opportunities for the non-arts major to participate in applied, theoretical, and appreciatinal curricular and co-curricular activities, such as general art and art history courses, dance, musical ensembles, and theatre productions.

ART
Charles Stroh, Chair
Barbara Brotherton
John M Carney
Cat Crotchett
Richard dePeaux
Edward Harkness
Tricia Hennessy
Keith Jones
Richard J. Keaveny
Donald E. King
Joyce Kubiski
Albert LaVergne
John Link
Charles LoVerme
Paul S. Mergen
Bruce Naftel
Mary Eleanor Neu
Curtis A. Rhodes
Louis B.M. Rizzolo
Paul A. Robbert
Paul Solomon
Phillip Vander Weg

As a teaching community of artists and scholars engaged in shaping culture, the Department of Art at Western Michigan University provides an environment which inspires emotional, intellectual and social awareness of art through its contribution to the process by which art is defined. The department provides educational opportunities that lead to careers in the practice and teaching of art, application of art to other professions, enhanced critical thinking and cultural enrichment.

We educate undergraduate and graduate students within their chosen art disciplines as well as provide general arts education to the wider university student population. Artists at all stages of development pursue their individual creative process in courses organized around a variety of media. Arts educators and scholars study the creative process, how it is passed from one generation to the next, its results and the culture that both creates and is created by it.

The department is also a cultural resource serving the many communities with which it coexist. By exhibiting our creative work, publishing our scholarship and participating in organizations affecting art and culture at local, regional, national and international levels, we seek to advance the arts and its role in our civilization.

Accreditation
Western Michigan University is an accredited member of the National Association of Schools of Art and Design and subscribes to the recommendations of this organization.
Programs

The Department of Art offers the following degree programs: Bachelor of Fine Arts with a major in Art and an emphasis in either Ceramics, Jewelry/Metalsmithing, Painting/Watercolor, Photography, Printmaking or Sculpture; Bachelor of Fine Arts with a major in Graphic Design; Bachelor of Arts with a major in Art; Bachelor of Arts with a major in Art Teaching. All programs are within the Art curriculum, which is composed of the General Education requirements of the University and the Art major requirements of the B.A. or B.F.A. degrees.

For specific information see the description of each program.

Transfer Credit

Transfer credit may be used to fulfill no more than half the number of credit hours required for the students Art major or minor. Art credits earned at a college accredited by the National Association of Schools of Art and Design, or a regionally recognized accrediting agency, in which a grade of “C” or better is earned, will transfer in most cases. Many beginning level art courses will transfer with direct WMU course equivalents. Some beginning and most intermediate level courses will receive general “art credit”.

If you receive general art credit for any course you feel would fulfill a required art course, or for any course needed to fulfill a prerequisite for a course you wish to take, you must present a portfolio for consideration. Based on the results of this portfolio review, the course in question will either receive a direct course equivalent number or remain general art credit. General art credits can be used to fulfill the elective art category or be used as electives you may need to complete the minimum number of hours needed for graduation (122).

If you do not wish to show a portfolio for any courses in which you have received general “art credit”, you do not have to do so. These credits will automatically be used as electives wherever needed.

For portfolio guidelines please write to: Screening Committee, Department of Art, Western Michigan University, Kalamazoo, MI 49008, or call (616) 387-2440.

Advising

All art majors and minors are required to see an advisor as soon as they are on campus and at least once each Fall and Winter semester thereafter. To make an appointment please call (616) 387-2440.

Miscellaneous

Baccalaureate Writing Requirement

Students who major in Art or Graphic Design will satisfy the Baccalaureate Writing Requirement by successfully completing Art 325 Writing About Art.

Computer Usage

The Department of Art utilizes computers in virtually all aspects of the visual arts. Our computer lab is open to all Art majors and minors.

Computer usage and design plays a vital role in our Graphic Design Program, and our Design Center is also fully equipped for the use of the Graphic Design students exclusively.

Exhibition Requirement

Each Bachelor of Fine Arts candidate must present a graduating exhibition as stated in the Art 490-497 in the B.F.A. degree requirements. The B.F.A. candidate is to arrange such an exhibition in consultation with their BFA Committee Chairperson. The Department of Art may retain one work of art from each student for the departmental collection. B.F.A. candidates must submit to the department a minimum of two sets of 18 slides of their art work before receiving a grade for their graduation presentation.

Grading

Art majors and minors receiving a grade below a “C” in a required course must repeat the course.

Studios

Advanced undergraduates are occasionally given studios. All other students may work in the regular classroom studios at night and on Saturdays. The department and its instructors cannot be responsible for student work left in studios after the end of each semester or term. Studio classes are usually limited to 15 to 20 students.

Programs

Bachelor of Fine Arts Degree

ART MAJOR

85 credit hours

This degree is designed for qualified students who intend to become professional artists or pursue graduate study in art. Art majors must make specific application to a departmental committee for admission to B.F.A. candidacy in a specific area of emphasis after completing 30 hours in art. Art majors must complete the requirements of the Department of Art and the College of Education and Art History requirements of one of the studio areas of emphasis. The requirements of the B.F.A. curriculum of the College of Fine Arts have to be satisfied. Eighty-five hours in art satisfy both the major and the minor requirements of this curriculum and are distributed as follows:

BASIC STUDIES REQUIREMENT ............. 5

Select any five (5) courses from the following:

FOUNATION COURSES

ART 101 Foundation Drawing ............ 3
ART 102 Foundation 2D Design ............ 3

2D COURSES

ART 240 Painting I .................. 3
ART 241 Intaglio Relief .................. 3
ART 242 Watercolor Painting ............ 3
ART 243 Lithography .................. 3
ART 245 Graphic Design (Non BFA) .... 3
ART 248 Photography .................. 3

3D COURSES

ART 230 Ceramics .................. 3
ART 231 Sculpture .................. 3
ART 238 Jewelry and Metalsmithing .... 3

ART HISTORY REQUIREMENT ............. 12

ART 220 History of Art .................. 3
ART 221 History of Art .................. 3

Two Art History courses ............ 6

WRITING REQUIREMENT ............. 3

ART 325 Writing About Art ............ 3

STUDIO EMPHASIS .................. 21

Areas include: Ceramics, Jewelry/Metalsmithing, Painting/Watercolor, Photography, Printmaking, and Sculpture.

ART ELECTIVES .................. 31

Electives and required art courses must be determined in consultation with a faculty advisor within the studio area of emphasis.

GRADUATION PRESENTATION ............. 3

Select one from:

ART 490 Graduation Presentation and Seminar—Painting/Watercolor ............ 3
ART 491 Graduation Presentation and Seminar—Sculpture ............ 3
ART 493 Graduation Presentation and Seminar—Photography ............ 3
ART 494 Graduation Presentation and Seminar—Printmaking ............ 3
ART 495 Graduation Presentation and Seminar—Jewelry/Metalsmithing ............ 3
ART 496 Graduation Presentation and Seminar—Ceramics ............ 3

GRAPHIC DESIGN MAJOR

85 credit hours

This degree is designed for qualified students who intend to become professional graphic designers or pursue graduate study in graphic design. Art majors must make specific application for B.F.A. candidacy with a major in graphic design to a departmental committee of graphic design faculty. Courses in the program are sequential beginning in the fall semester of each year and will take a minimum of three years to complete after admission. Application requires a portfolio review, personal interview, submission of an unofficial transcript, and completion of application forms and recommendations. Reviews are held only in the winter semester for admission into the fall semester. Students must have completed or be enrolled in 15 hours of the basic required courses and 3 hours of art history.

Student’s portfolios are reviewed for understanding of perspective, composition, and color acquired in drawing courses, two-dimensional design courses, and courses dealing with color theory. Additional abilities demonstrated with work in beginning courses in life drawing, painting, photography, printmaking, jewelry and metalsmithing, ceramics, and sculpture will also be evaluated. Academic abilities reflected in the grade point average and an ability to articulate the fundamentals acquired at the basic level of study are also considered as part of the interview process.

The requirements of the B. F. A. curriculum of the Department of Art and the College of Fine Arts must be satisfied. Eighty-five hours in art satisfy the major requirements of this curriculum and are distributed as follows:

BASIC COURSES .................. 15

ART 101 Foundation Drawing OR
ART 210 Life Drawing ............ 3
ART 102 Foundation 2D Design ............ 3
ART 248 Photography ............ 3

SELECT TWO (2) COURSES FROM:

ART 101 Foundation Drawing OR
ART 210 Life Drawing ............ 3
ART 230 Ceramics ............ 3
ART 231 Sculpture ............ 3
ART 238 Jewelry and Metalsmithing ............ 3
ART 240 Painting I ............ 3
ART 241 Intaglio Relief ............ 3
ART 242 Watercolor Painting ............ 3
ART 243 Lithography ............ 3

ART 220 History of Art ............ 3
ART 221 History of Art ............ 3

Two Art History courses ............ 6

ART 325 Writing About Art ............ 3
ART 245 Graphic Design (Non BFA) 3

ART 247

GRAPHIC DESIGN COURSES 43
ART 250 Color for Graphic Design 3
ART 251 Typography I 3
ART 260 Graphic Design I: Visual Aesthetics 3
ART 261 Graphic Design II: Graphic Form 3
ART 350 Typography II 3
ART 351 Typography III 3
ART 360 Graphic Design III: Visual Systems 3
ART 361 Graphic Design IV: Design Applications 3
ART 371 Special Topics 3
ART 460 Graphic Design V: Advanced Problems 3
ART 461 Graphic Design VI: Senior Projects 3
ART 492 2D Project Graphic Design 3
ART 570 Intern I 3
ART 571 Intern II 3

PHOTOGRAPHY COURSE 3
ART 348 Photography 3

WRITING REQUIREMENT COURSE 3
ART 325 Writing About Art 3

ART HISTORY COURSES 12
ART 220 History of Art 3
ART 221 History of Art 3
Select from 500-level Art History courses 6

ART ELECTIVES 9
Select from Art Studio courses.

Art Major
Bachelor of Arts 54 credit hours

This program is designed for the liberal arts-oriented student who wants to major in the visual arts. It provides maximum flexibility in terms of electives in art and non-art courses. Professionally oriented art students may start in this program and apply for admission to the B.F.A. program when eligible.

The requirements of the art curriculum of the College of Fine Arts have to be satisfied. Fifty-four hours in art satisfy both the major and the minor requirements of this curriculum and are distributed as follows:

15 hours in the basic studies program; choose any five (5) courses. (101, 102, 103, 210, 240, 241, 242, 243, 245, 246, 230, 231, 238)
12 hours in Art History. (220 and 221; Art history electives)
3 hours in Writing Requirement (325)
24 hours in Art electives (Art major studio credits)

Art Teaching Major
Bachelor of Arts 60 credit hours

This program is intended to develop artist-teachers certified to teach art at the elementary and secondary levels and prepare to continue their studies at a graduate school. The requirements of the secondary curriculum of the College of Education must be satisfied. Sixty credit hours in art satisfy the major and minor requirements of this curriculum and are distributed as follows:

100-LEVEL REQUIREMENT 9
ART 101 Foundation Drawing 3
ART 102 Foundation 2D Design 3
ART 103 Theory of Art 3

200-LEVEL REQUIREMENT 15
ART 210 Life Drawing 3
ART 230 Ceramics 3
ART 231 Sculpture 3
ART 240 Painting I 3
ART 248 Photography 3
ART 241 Intaglio Relief 3

ART HISTORY REQUIREMENT 9
ART 220 History of Art 3
ART 221 History of Art 3
Art History elective 3

ART EDUCATION REQUIREMENT 12
ART 252 Art Education Workshop 3
ART 352 Preparation for Art Teaching (Elementary) 3
ART 452 Preparation for Art Teaching (Secondary) 3
ART 552 Preparation for Art Teaching 3

ART ELECTIVES 15
Electives must be determined in consultation with an art advisor.

Art teaching courses (252, 352.452.552) must be taken in sequence and may not be taken concurrently. Therefore, Art teaching majors must enroll in Art 252 in the fall semester of the sophomore year and continue taking one art education course, in sequence, in each subsequent term. It is necessary in order to complete the intern teaching in the senior year and complete the degree in a four-year span.

One semester of intern teaching in art, preferably in both elementary and secondary situations, is required.

Art Minor
24 credit hours

This program is designed to expose the student to the field of art. Art minors must register with the art advisor before completing any art courses. A minor slip is required.

12 hours in the basic studies program; choose four (4) courses from ART 101, 102, 103, 210, 240, 241, 242, 243, 245, 246, 230, 231, 238
12 hours in art electives, Art major/minor studio including ART 252 and 352 for education majors.

Art History Minor
18 credit hours

This program is designed for liberal arts students interested in art history. A minor slip is required. The 18 credit hours are distributed as follows:
6 hours of Art History 220 and 221
12 hours of electives chosen from the remaining Art History courses in the department, in consultation with the Art advisor.

Art Courses for Non-Art Majors or Minors

Any 100 level course may be taken by non-art students. Those seeking a broadly inclusive studio experience in art are advised to take ART 130 and/or 140. Further recommended courses include specific media for non-art majors include Drawing, Acrylic Painting, Printmaking, Sculpture, Ceramics, Jewelry, and Watercolor. ART 120, ART 130, ART 140, ART 148, ART 220, and ART 248 are recommended to non-art majors or minors as introductory courses to the humanities requirements of General Education.

Art Courses (ART)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

ART 101 Foundation Drawing 3 hrs.
The visual elements and principles of organization in relationship to the two and three-dimensional world. Prerequisite: No minors in art or art education.

ART 102 Foundation 2D Design 3 hrs.
The study of the elements of visual arts and their application in the student's major and minor courses.

ART 103 Theory of Art 3 hrs.
A lecture course introducing the philosophy of art with understanding of the aesthetic values that are reflected by the student's major or minor courses.

ART 120 Introduction to Art 3 hrs.
A topical introduction to the visual arts: painting, sculpture, architecture, and crafts. Discussions and slide presentations on such themes as the meaning of modern art, art as cultural and sociological expression, as well as the play and form. This course will enable the non-art student to develop an art vocabulary and gain insights into man's quest for creative expression.

ART 130 Studio Experience—(3-D) 3 hrs.
A course designed for the non-art student as an enriching experience in three-dimensional media. (May not be elected by majors or minors in art or art education. It is designed primarily for the general university student who wishes to have some experience in art. This course meets Area I, Fine Arts, General Education requirement.

ART 140 Studio Experience—(2-D) 3 hrs.
A course designed for the non-art student as an enriching experience in two-dimensional media. (May not be elected by majors or minors in art or art education.

ART 148 Direct Encounter with the Arts ($35 fee) 4 hrs.
A course that uses a direct approach to introduce students to their cultural world by guiding them through first-hand experiences in a number of areas: cinema, photography, theatre, sculpture, music, poetry, dance, and architecture. Classroom discussions are held following the student's participation in the various art events scheduled each semester, with students expected to write journals and response papers about the major events of the course. There will be a course charge in lieu of textbooks. Cross listed with DANCE 148, MUS 148, THEA 148. May be taken only once from College of Fine Arts Departments.

ART 150 Art Education Workshop 3 hrs.
A studio course structured to provide the classroom teacher with the opportunity to explore, experiment and develop concepts related to art, creativity, and perception. Such concepts are explored and developed through the use of a variety of art materials and techniques. Prerequisite: For the Elementary Education Minor only. May not be taken by Integrated Creative Arts minors, or Art majors or minors.
ART 200 The Creative Process Through Art 3 hrs.
Individual involvement in the creative process related to human growth and development by means of exploration with many art media. For the Integrated Creative Arts Minor only. This course waives the ART 150 requirement for the Elementary Education majors.

ART 201 Non Art Major: Drawing 3 hrs.
This course is a non-professional enrichment experience in basic drawing. The course objectives are 1) to learn basic drawing techniques and their relationships to various media such as graphite, charcoal, and conte crayon, 2) to learn proper usage of papers and drawing tools, and 3) to develop personal expression through drawing. Not applicable to art majors or minors.

ART 202 Non-Art Major: Acrylic Painting 3 hrs.
This course is a non-professional enrichment experience in basic acrylic painting. The course objectives are 1) to develop a basic understanding of color and composition, 2) to learn the fundamental techniques of application for acrylic paint, and 3) to develop a personal expressive use of the medium. Not applicable to art majors or minors.

ART 203 Non Art Major: Printmaking 3 hrs.
This course is a non-professional enrichment experience in basic Printmaking. The course objective is to learn the fundamental techniques of etching, lithography, and block printing. Studio time will be provided for students to work on a project in each of these media. A class fee will be charged to cover the cost of materials and supplies. Not applicable to art majors or minors.

ART 205 Non Art Major: Sculpture 3 hrs.
This course is a non-professional enrichment experience in Basic Sculpture. The course objectives are 1) to learn basic techniques of clay modeling and plaster casting, and 2) to develop personal expression in these media. A class fee will be charged for materials and supplies. Not applicable to art majors or minors.

ART 206 Non Art Major: Ceramics 3 hrs.
This course is a non-professional enrichment experience in basic Ceramics. The course objectives are 1) to learn the fundamental of Ceramic construction, including coil building, and limits of clay as a material. A class fee will be charged for clay and glaze supplies. Not applicable to art majors or minors.

ART 207 Non Art Major: Jewelry 3 hrs.
This course is a non-professional enrichment experience in basic Jewelry. The course objectives are 1) to learn the proper use of metal-making tools and equipment, 2) to learn the basic techniques of making hand-wrought jewelry, and 3) to develop an awareness of the technical and creative range of metal as a medium for body decoration. A class fee will be charged for materials and supplies. Not applicable to art majors or minors.

ART 208 Non Art Major: Watercolor 3 hrs.
This course is a non-professional enrichment experience in basic Watercolor. The course objectives are 1) to learn the proper use of watercolor brushes and tools, 2) to learn basic techniques for manipulating watercolor, and 3) to understand presentation models for finished watercolor paintings. A class fee will be charged for materials and information handouts. Not applicable to art majors or minors.

ART 210 Life Drawing 3 hrs.
The study of the essential aspects of life drawing such as gesture, contour, proportions, anatomy, structure, and articulation and their synthesis into a coherent drawing attitude. Prerequisites: ART or ATE major and minors only.

ART 220 History of Art 3 hrs.
An historical survey of art from prehistoric ages to the Renaissance. Prerequisites: ART or ATE major and minors only.

ART 221 History of Art 3 hrs.
An historical survey of art from the Renaissance through the contemporary period. Prerequisites: ART or ATE major and minors only.

ART 222 Art of Africa, Oceania and the Americas 3 hrs.
A survey of the diversity of media forms and context within which Africans, Pacific Islanders and Native Americans make and use art, including contemporary expressions. Art will be discussed in relation to wider cultural contexts, historical and political ideas, and aesthetic approaches.

ART 223 Introduction to Asian Art History 3 hrs.
This course will investigate the history of Asian art from the prehistoric to the modern periods, including arts of the cultures of China, Japan, Korea, East Asia and India. Art will be discussed in relation to wider cultural contexts, historical and political ideas, and aesthetic approaches.

ART 230 Ceramics 3 hrs.
A course devoted to a survey of pottery process, including handbuilding, technical information and a limited experience with the potter's wheel. Prerequisite: ART or ATE major and minors only.

ART 231 Sculpture 3 hrs.
A fundamental course in sculpture exploring the theories and concepts of three-dimensional art forms in space. Mechanical, structural and compositional principles will be studied. An overview of historical sculpture forms will be presented. Prerequisite: ART or ATE major and minors only.

ART 238 Jewelry and Metalsmithing 3 hrs.
A survey of jewelry projects with instruction in design and metal craft. Copper, brass, and silver are the principal materials. Basic stone setting and casting procedures are usually included. Students generally fashion several jewelry pieces in this class. Prerequisite: ART or ATE major and minors only.

ART 240 Painting I 3 hrs.
A fundamental course in painting to assist the student in realizing visual observations, compositional sensitivities, and personal expression through basic painting techniques. Seeing color, mixing color, and making specific color decisions are the vehicles for studying basic painting methods and space. An overview of historical painting styles will be presented. Prerequisites: ART or ATE major and minors only.

ART 241 Intaglio and Relief 3 hrs.
A fundamental exposure to the techniques of Intaglio and Relief and an introduction to Print aesthetics. Prerequisite: ART or ATE major and minors only.

ART 242 Watercolor Painting 3 hrs.
A survey of the application, techniques, and limitations of the watercolor medium. Prerequisite: ART or ATE major and minors only.

ART 243 Lithography 3 hrs.
A basic, confidence-building, introduction to Lithography through Aluminum Plate techniques. Fundamental discussion of Stone lithography and aesthetic possibilities of the medium. Prerequisite: ART or ATE major and minors only.

ART 244 Hand Papermaking 3 hrs.
An introduction to the basic techniques of hand papermaking as an art form. Prerequisites: ART or ATE major and minors only.

ART 245 Graphic Design—Non BFA in Graphic Design 3 hrs.
An introduction to problem-solving for visual communication through typographic images—the fundamentals of calligraphy, typography, and typographic design are investigated in experimental and practical projects. Incorporates research in the communicative potential of color and structure. Prerequisite: ART or ATE majors and minors only.

ART 246 Screenprint 3 hrs.
Introduction to screenprint fundamentals, techniques and procedures, exploring at length the expressive potentials of the medium—to include basic color printing procedures. Prerequisite: ART or ATE major and minors only.

ART 248 Photography 3 hrs.
Introductory course covering the function of the camera, exposure meters, lenses, b/w films, processing and printing. Emphasis is placed upon perceptive imagery and development of a technical proficiency. Prerequisite: ART or ATE major and minors only.

ART 250 Color for Graphic Design 3 hrs. Fall
Studies in color theory emphasizing issues and problem solving related to graphic design. This includes investigations in additive and subtractive color theories as applied to reflective and transmitted media as well as color systems used in graphic reproduction. Prerequisites: 15 hours basic courses and ART 220; acceptance into BFA in graphic design by portfolio review.

ART 251 Typography I 3 hrs. Winter
Studies in the design of letterforms and typographic structure. Emphasis is on developing an understanding of typographic form through drawing and compositional exercises and discussion of perceptual, historical, and technological influences. Computer technology will be investigated. Prerequisites: ART 250, ART 260.

ART 252 Art Education Workshop (Majors) 3 hrs.
A studio course involving projects, media and materials, handled on an aesthetic level but appropriate for the creative and maturational ability of the K-12 art student. Prerequisite: ART 101, ART 102, ART 103, ART 231 and ART 240 or 242, or ART 231 and ART 240 or 242 concurrently.

ART 256 3 hrs.
Introduction to computer graphics as an image-making process and as manipulation of scanned (found) images. After a basic
orientation on computer processing several programs will be used for the development of images as formal fine art, illustration, and as visual communication. Prerequisite: ART or ATE major only.

ART 260 Graphic Design I: Visual Aesthetics
3 hrs. Fall
Theoretical visual studies in graphic design involving point, line, and shape, dealing with formal values and composition. Emphasis on problem solving, skill development, perceptual acuity and an understanding of visual aesthetics. Prerequisites: 15 hours basic courses and ART 220; acceptance into BFA with a major in graphic design by portfolio review.

ART 261 Graphic Design II: Graphic Form
3 hrs. Winter
A continuation of Graphic Design I. Studies in space, form and composition involving an integration and application of formal values and problem solving. Visual systems of address technical issues of writing, exploring through organic and geometric drawing exercises. Computer technology will be investigated. Prerequisites: ART 250, ART 260.

ART 305 Inter-Related Arts Process: Art, Dance, and Music
3 hrs.
Art, dance, and music will be dealt with as the expressive means at the core of the creative and educative process. The student will be exposed to the craftsmanship of each art form, the experiences of synthesizing art forms so that each form contributes to the aesthetic value of the final product.

ART 310 Intermediate Drawing
3 hrs.
Drawing as the study of form and as a conclusive aesthetic statement. Model available during approximately 1/3 of the class meetings. Prerequisite: ART 210.

ART 325 Writing About Art
3 hrs.
Development of the ability to think, verbalize, and write about art and design. Instruction will address technical issues of writing, exploring with the introduction of organic and geometric drawing exercises. Computer technology will be investigated. Prerequisites: ART 250, ART 260.

ART 331 Sculpture
3 hrs.
Development of individual sculptural direction: all media. Advanced weidng, molding and casting techniques are among the media explored. Prerequisite: ART 231 or consent of department.

ART 338 Jewelry and Metalsmithing
3 hrs.
Intermediate level metalsmithing work. Continued skill development in jewelry design, stone setting, and solder fabrication. Basic lapidary skills usually included. Prerequisite: ART 238.

ART 340 Painting II
3 hrs.
Continuation of ART 240. Prerequisite: ART 240.

ART 341 Intaglio and Relief
3 hrs.
An intermediate course continuing the investigation of basic and advanced intaglio and Relief techniques with the introduction of color printing. The artist-student should begin to discover and adapt media and/or techniques (or synthesis of media and/or techniques appropriate to individual aesthetic intentions. Prerequisite: ART 241.

ART 342 Watercolor
3 hrs.
Advanced problems in watercolor techniques to include composition. Prerequisite: ART 242.

ART 343 Lithography
3 hrs.
An intermediate investigation of Lithography based on basic skills with the introduction of color printing and other advanced techniques. The artist-student should begin to discover methods and techniques adaptable and appropriate to his aesthetic intent. Prerequisite: ART 243.

ART 344 Hand Papermaking
3 hrs.
The techniques of producing paper to be used as support for various media. Prerequisite: ART 244.

ART 345 Graphic Design-Non BFA in Graphic Design
3 hrs.
The study and practice of graphic design for two-dimensional media. Emphasis is placed on the conceptual development of geometric, figurative, and decorative imagery for posters, covers, promotions, magazine and newspaper advertising. Includes thematic development, graphic planning, comprehensive and finished art production. Prerequisite: ART 245.

ART 346 Screenprint II
3 hrs.
An intermediate course continuing the investigation of basic and advanced screenprint stencil techniques with the introduction of photo-stencil methods. The artist-students should begin to discover and apply method of technique appropriate to their aesthetic intent. Prerequisite: ART 246.

ART 348 Photography
3 hrs.
Introduction to the view camera, color processing/printing, and various studio lighting techniques involved in product photography. Emphasis is placed upon exploring the potential of color photography and the development of individual imagery. Prerequisite: ART 248 and ownership of a 35mm slr or 2 1/2 X 2 1/4 camera.

ART 350 Typography II
3 hrs. Fall
Exploring compositional relationships involving the single word, line, column, page arrangement and structural systems. Semantic and syntactic issues will be investigated in projects and exercises. Computer technology will be investigated. Prerequisites: ART 261, ART 251.

ART 351 Typography III
3 hrs. Winter
Dealing with systems, sequence and series as complex typographic problems. Application of theoretical, pragmatic and technical issues to problems common in publication and institutional communication. Computer technology will be investigated. Prerequisites: ART 350, ART 360.

ART 352 Preparation for Art Teaching (Elementary)
3 hrs.
A teaching laboratory course designed to familiarize the elementary art teacher with teaching philosophies, methods and creative teaching procedures using varied media and materials. Emphasis is placed upon qualitative art programming in the elementary school. Prerequisite: ART 252.

ART 356 Computer Imaging II
3 hrs.
3 hrs.
Comprehensive study of computer graphics as an art making medium and as an auxiliary to other media. Experimentation with various programs, development of an integrative approach to composing images and pictures, and exploration of hard copy output. Prerequisite: ART 256 or equivalent experience.

ART 360 Graphic Design III: Visual Systems
3 hrs. Fall
The study of grids and other systems in graphic design and their application to communication problems. Functions as a transitional phase from theoretical issues to applied problems. Computer technology will be investigated. Prerequisites: ART 251, ART 261.

ART 361 Graphic Design IV: Design Applications
3 hrs. Winter
Continuation of Graphic Design III as a transitional phase from the theoretical to the applied design problem. The evolution of design process is explored and developed. Involves the visual study of grids and systems and their applications. Computer technology will be investigated. Prerequisites: ART 350, ART 360.

ART 371 Special Topics
3 hrs.
Topics offered could be any of the following: package design, exhibit design, sign/symbol design, interactive electronic media, photography, type as image, applied color, visual translation, and any additional topic of interest. Prerequisites: ART 350, ART 360.

ART 452 Preparation for Art Teaching (Secondary)
3 hrs. Fall
A teaching laboratory course specifically designed to familiarize the middle and high school art teacher with philosophies, methods and creative teaching procedures using varied media and materials. Emphasis is placed upon qualitative art programming in the secondary school. Prerequisite: ART 352 and art major status.

ART 460 Graphic Design V: Advanced Problems
3 hrs. Fall
Applied design problems of an advanced complex nature emphasizing design methodology and research. Input from the community and outside sources will be a focus for the problem solving process. The problems will deal with a series of related parts and involve conventional and new media. The emphasis will be on analysis as it applies to the theoretical and applied project. This will include the experiences of design teams. Computer technology will be utilized. May be taken in conjunction with ART 580, Intern I. Prerequisites: ART 351, ART 361.

ART 461 Graphic Design VI: Senior Projects
4 hrs. Winter
Individual Senior Thesis projects. Involves complex textographic problems. Application of theoretical, pragmatic and technical issues to problems common in publication and institutional communication. Computer technology will be utilized. Prerequisites: ART 460.

ART 490 Graduation Presentation and Seminar—Painting/Watercolor
3 hrs.
Investigation and evaluation of contemporary topics and trends in painting/watercolor. Students will be exposed to how painters express their ideas through varied art forms, including but not limited to, paintings, exhibitions, workshops and seminars encouraging students to select and develop their own research topic. Preparation
and presentation of graduating exhibition in painting/watercolor to include slide documentation and oral examination or written thesis. Evaluation by a departmental reviewing committee. Prerequisites: Senior standing and BFA candidacy.

ART 491 Graduation Presentation and Seminar—Sculpture 3 hrs. Investigation and evaluation of contemporary topics and trends in sculpture. Students will be exposed to how sculptors express their ideas through visiting artist programs, exhibitions, workshops, and seminars encouraging students to select and develop their own research topic. Preparation and presentation of graduating exhibition in sculpture to include slide documentation and oral examination or written thesis. Evaluation by a departmental reviewing committee. Prerequisites: Senior standing and BFA candidacy.

ART 492 Graduation Presentation and Seminar—Graphic Design 3 hrs. Investigation and evaluation of contemporary topics and trends in graphic design. Students will be exposed to how graphic designers express their ideas through visiting artist programs, exhibitions, workshops and seminars encouraging students to select and develop their own research topic. Preparation and presentation of graduating exhibition in graphic design to include slide documentation and oral examination or written thesis. Evaluation by a departmental reviewing committee. Prerequisites: Senior standing and BFA candidacy.

ART 493 Graduation Presentation and Seminar—Photography 3 hrs. Investigation and evaluation of contemporary topics and trends in photography. Students will be exposed to how photographers express their ideas through visiting artist programs, exhibitions, workshops and seminars encouraging students to select and develop their own research topic. Preparation and presentation of graduating exhibition in photography to include slide documentation and oral examination or written thesis. Evaluation by a departmental reviewing committee. Prerequisites: Senior standing and BFA candidacy.

ART 494 Graduation Presentation and Seminar—Printmaking 3 hrs. Investigation and evaluation of contemporary topics and trends in printmaking. Students will be exposed to how printmakers express their ideas through visiting artist programs, exhibitions, workshops and seminars encouraging students to select and develop their own research topic. Preparation and presentation of graduating exhibition in printmaking to include slide documentation and oral examination or written thesis. Evaluation by a departmental reviewing committee. Prerequisites: Senior standing and BFA candidacy.

ART 495 Graduation Presentation and Seminar—Jewelry/Metalsmithing 3 hrs. Investigation and evaluation of contemporary topics and trends in jewelry/metalsmithing. Students will be exposed to how jewelers express their ideas through visiting artist programs, exhibitions, workshops and seminars encouraging students to select and develop their own research topic. Preparation and presentation of graduating exhibition in jewelry/metalsmithing to include slide documentation and oral examination or written thesis. Evaluation by a departmental reviewing committee. Prerequisites: Senior standing and BFA candidacy.
variable due to the fact that larger more intense projects are sometimes given an othe credits are determined by the depth of the project. Prerequisites: ART 460, ART 580.

ART 583 History of Medieval Art 3 hrs.
Discussion of art and architecture from the decline of the Roman Empire through the Gothic Period (Third to Thirteenth Centuries). Prerequisite: ART 220.

ART 585 History of Renaissance Art 3 hrs.
The development of art through the early Renaissance to the Late Renaissance and Mannerism. Some of the major artists discussed are: Giotto, Donatello, Da Vinci, Michelangelo, Titian, Van Eyck, Brueghel and Durer. Prerequisite: ART 221.

ART 586 History of Baroque Art 3 hrs.
Art of the late Sixteenth, Seventeenth, and early Eighteenth Centuries. Major artists and architects discussed are: Caravaggio, the Carracci, Rembrandt, Rubens, Poussin, Velasquez, Bernini, Borromini, and Neumann. Prerequisite: ART 221.

ART 587 History of American Art Colonial to 1900 3 hrs.
Art in the United States from the Colonial Period to 1900. Emphasized are Federal and Georgian Eighteenth Century styles; Nineteenth Century Realism, Romanticism and Nativism; and development of distinctly "American" consciousness and styles. Prerequisite: ART 221.

ART 588 History of Nineteenth Century European Art 3 hrs.
Major developments, such as Neo-Classicism, Romanticism, Realism, Impressionism, and Post-Impressionism are discussed. Key figures whose works lie at the roots of modern art are considered in relationship to their times. Prerequisite: ART 221.

ART 589 History of European Art 1900-1945 3 hrs.
Emphasis is placed upon the roots of contemporary trends and the contributions of individuals to new modes of presentation. Major developments including Fauvism, Cubism, Expressionism, and Surrealism are discussed. Prerequisite: ART 221.

ART 590 History of Twentieth Century Art 1945 to Present 3 hrs.
Major trends in art since World War II are discussed. Included are Abstract Expressionism, Pop and Op Art, the New Realists, and Conceptual Art. Prerequisite: ART 221.

ART 591 History of Prints 3 hrs.
Major developments in printmaking, including origins of woodcut and engraving. Renaissance and Baroque master etchers and engravers (Durer, Rembrandt). Lithography in the Nineteenth Century (Delacroix, Daumier, Toulouse-Lautrec). Twentieth Century printmaking.

ART 592 Twentieth Century Design History 3 hrs.
Major trends in design in the past 100 years, beginning with the arts and crafts movement through post modernism. Major developments include Art Nouveau, Art Deco and the Bauhaus. Art forms include architecture, interior design, graphics, illustration and crafts. Prerequisite: ART 221.

ART 593 History of American Art: 1900-1945 3 hrs.
Art of the United States and Canada from 1900 to present; Realism, introduction of European Modernism; National and American Modernist traditions of the '20s, '30s, and '40s. Prerequisite: ART 221.

ART 597 History of Modern Architecture 3 hrs.
Major developments in architecture since c.1750 with emphasis on late nineteenth century and twentieth century developments in domestic and commercial architecture and city planning in the West and in Asia. Especial consideration given the works and influences of Wright, Le Corbusier, and Mies van der Rohe.

DANCE
Jane Baas, Chair
Trudy Cobb
Wendy Cornish
David Curwen
Sharon Garber
Nina Nelson
Lindsey Thomas

The Department of Dance seeks to fulfill its responsibility to further the development of the art in Michigan through creating and publicly producing dance which reflects the highest aesthetic standards; sponsoring events which enrich the dance life of the community; conducting research on dance; and providing dance experiences which have artistic and educational value. The Department endeavors to produce versatile graduates who delight in the practice of dance, who can integrate theory and practice with discerning sensibilities, who have a firm foundation upon which to carve their own careers, who have the conviction to hold firm in their aesthetic goals and who have the skills necessary for survival in an ever-changing field. For the general student, the Department endeavors to foster an understanding and appreciation of dance by providing opportunities to practice, study and view dance. Western Michigan University is an accredited institutional member of the National Association of Schools of Dance.

Programs
The Department of Dance offers three programs in dance: Bachelor of Fine Arts in Dance (80 hours); Bachelor of Arts in Dance (53 hours); and a Dance Minor (18 hours). The BFA program emphasizes performance, choreographic and aesthetic training and is designed for the student seeking employment at the professional level. The BA program offers an opportunity to explore the diversity of the dance profession within a string liberal arts component, and BA students individualize their program by choosing electives that support their dance career goals. The Dance Minor is designed for students who wish to continue their dance studies as an avocation. Dance courses include four levels of ballet, jazz, and modern dance, three levels of choreography, three dance history courses, dance science and analysis, conditioning, pedagogy and production. An audition is required for acceptance into all dance programs. For additional information, please refer to specific Program Requirements.

COURSES FOR GENERAL STUDENTS
Introductory dance courses are offered for general students. Dance technique courses open to general students without audition include: DAN201, 102, 103, 104, and 181. A fee is required for each student enrolled in DAN201, 102, and 103 in order to provide a musical accompanist. DAN202, 145, a dance survey course, may be elected by any student to satisfy Area I — Fine Arts of the University General Education Program beginning in Fall. A $10 fee is required for each student to provide funding for guest artists.

Admission
Admission to the University is granted only by the Office of Admissions and Orientation for undergraduate students. Applications are available by writing to the Office of Admissions and Orientation, calling at (616) 387-2000, or via WMU's World Wide Web site. Enrollment in all dance programs at WMU is contingent upon admission to the University and acceptance to the department via an audition. Auditions for acceptance into the
dance department are normally held in November, February and April. The audition consists of taking class in ballet, jazz and modern, including sections designed to showcase quick-study and improvisation skills. Prospective dance majors must place into the technique level I in at least one dance idiom to be accepted. Prospective dance minors must place at the technique level I in at least one dance idiom to be accepted. Prospective students may also elect to apply for scholarships via the November or February audition dates. In addition to the three classes, scholarship candidates also write an essay on-site and have an interview with a member of the faculty. Candidates must submit a two-page recommendation, all of which must be from a dance teacher. Awards range from $200 to $2,000 per academic year, some of which may be renewable.

Students interested in pursuing the Bachelor of Fine Arts program may petition for entrance after completion of: at least one semester each of ballet, jazz and modern major technique courses; DANC 180 Choreography I, DANC 181 Improvisation and at least one dance major theory course. The eligibility of transfer students to apply for the BFA degree will be evaluated on an individual basis. The results of all of the above are communicated in writing to the student within three weeks following the audition or petition. Further information is available by calling the dance department at (616) 387-5830 or contacting the dance academic advisor on email at: wendy.cornish@wmich.edu. Transfer Credit

Dance credit from other institutions transfers as a direct equivalent to a WMU course, as an unspecified dance credit, or as credit by department recommendation only. Transfer students should schedule an appointment with the dance academic advisor immediately after admission to the University to evaluate dance credits taken at other institutions.

Advising

Dorothy U. Dalton Center, Room 3123; (616) 387-5845

Upon admission to the University and acceptance into the dance program, each major and minor student should complete a Declaration Form with the dance academic advisor. It is the responsibility of the student to make an appointment with the advisor each semester in order to prepare for the next semester's registration. Each student should meet with the advisor during his/her minor year to secure a Graduation Audit Statement before registration for the final semester.

The dance academic advisor is also available to assist students on selection of appropriate majors/minors, selection of General Education courses, and other University requirements. Matters which are beyond the advisor's qualifications will be referred to offices, on- and off-campus, qualified to assist. Graduation requirements must be completed as stipulated in the Undergraduate Catalog in the second semester of the student's enrollment. Requirements cannot be added during the student's enrollment, but the student may take advantage of course and curriculum alterations if these changes enhance the student's education. Each student is responsible for knowing the requirements of the degree and for taking the steps necessary for completion of these requirements. All dance students are urged to take advantage of advising services in the Department of Dance for assistance in making educational choices and for interpretation of requirements stated in the Undergraduate Catalog.

Miscellaneous

FOCUS OF MAJOR TECHNIQUE COURSES

Ballet courses emphasize the understanding of the classical ballet vocabulary with attention to stylistic variations, and piano accompaniment is provided. Students are exposed to a variety of modern dance styles such as Cunningham, Limon, and Hawkins as well as Barretti Fundamentals and elements of Laban Movement Analysis. Courses emphasize understanding of the anatomical principles and movement theories that support these and other modern dance styles. Piano or percussion accompaniment is provided. Jazz courses support technique concepts used in ballet and modern, in addition to exploring rhythmic and dynamic qualities inherent in jazz and social dance styles. Recorded and/or live accompaniment is used in jazz courses.

MAJOR TECHNIQUE COURSES

Progression is expected that the dance major/minor will spend at least two semesters in each level of technique. This is consistent with level advancement in professional schools. A passing grade in a technique class does not imply automatic progression to the next level. Faculty determine a student's ability to move to the next level just prior to Phase I registration for the following semester.

CLASS FEES FOR MAJOR TECHNIQUE COURSES

A fee is required from each student enrolled in DANC 110, 120, 130, 210, 220, 230, 310, 320, 330, and 425. A majority of the fee is used to provide a musical accompany. The remainder is used to pay the fees and related expenses to provide such special events as classes, performances, choreography, and lectures by guest artists.

SCHOLARSHIPS

Scholarships, awards and assistantships are available to current students. Award recipients are selected by the faculty on the basis of outstanding achievement in the field and overall academic excellence. Entering students who wish to be considered for scholarships must audition, submit two letters of recommendation, as well as have an interview with the faculty at either the November or February Audition Day. Current students apply in February for the next academic year. For specific information, refer to the chapter for Financial Assistance and Scholarships in this catalog or contact the Department of Dance.

ANNUAL MEETINGS

Departmental meetings are held the day before classes begin for the fall semester to prepare the student for the academic year. At these meetings, students will receive a calendar of events and an overview of Department policies and procedures. Attendance is mandatory for all dance majors and minors. Juniors and seniors enrolled in the Bachelor of Fine Arts program will be required to attend an additional meeting regarding BFA required projects on the same day of the department meeting. A winter department meeting is held in January to summarize additional events and changes that affect them.

ADDITIONAL STUDY OPTIONS

Students are encouraged to study with dance professionals whenever possible and to afford themselves the opportunity for study with artists-in-residence on Western's campus. Limited scholarships may be available for off-campus study. For specific information, contact the Department of Dance.

PERFORMANCE AND CHOREOGRAPHIC OPPORTUNITIES

Students have a variety of opportunities to perform in department concerts, informal showings, graduate presentations, special class-related performances, musicals and operas, and the department performing ensemble. Students must be enrolled in at least one major/minor technique course during rehearsal and performance periods and be in good academic standing in order to perform in department concerts. Students whose cumulative GPA falls below 2.5 may not audition for Undergraduate concerts. The Department is committed to publicly presenting the dances of students who demonstrate choreographic proficiency. Special opportunities in performance and choreography are available on- and off-campus and are posted as they occur.

Program Requirements

Bachelor of Fine Arts in Dance

80 hours

Students may petition for entrance into the BFA program after completion of:
1. at least one semester each of ballet, jazz, and modern major technique courses
2. DANC 180 Choreography I
3. DANC 181 Improvisation
4. at least one dance theory course

Eligibility of transfer students to petition will be determined on an individual basis by the dance department advisor. Petition forms are posted in November and March.

Continuation in the BFA program will be determined by the dance faculty during the second semester of the student's enrollment. In order to continue in the BFA program, the student must: demonstrate potential to succeed as a professional dancer and/or choreographer; have at least B-level skills in technique and performance, and have demonstrated professional commitment in dance coursework and dance-related activities. Any student discontinued from the program may reapply for the BFA after a minimum of one additional semester at WMU. Upon the end of the student's junior year, the BFA student must create and perform a solo dance in a public showing which exhibits his/her choreographic, technical, and performance skills. At this time, the student must also submit an essay addressing his/her strengths and weaknesses in choreography, technique and performance. In order to enroll in DANC 480 Graduating Presentation, the dance and essay must be acceptable to the dance faculty.

A grade of "C" or better is mandatory in all required dance courses.

GENERAL EDUCATION REQUIREMENTS

The student enrolled in the BFA in Dance must complete all General Education Requirements as described in this catalog. Students who have chosen the Dance major will satisfy the Baccalaureate-Level Writing Requirement by successfully completing DANC 345 Twentieth Century American Dance. Since the BFA in Dance is a credit-hour intensive curriculum, the BFA student may petition DANC 481.5 Experiencing Dance in both the dance major and in Area I of the General Education Distribution Program.
**REQUIRED COURSES IN TECHNIQUE AND PERFORMANCE—32 total hours**

BFA students must enroll in two major technique courses (DANC 110, 120, 130, 210, 220, 230, 310, 320, 330) each semester of the freshman, sophomore, and junior years. During the senior year, candidates must: enroll in at least one major technique course each semester; serve as a demonstrator in one technique course during the fall semester; and, through enrollment in DANC 400, serve as a teaching assistant in a technique course during the winter semester. Courses must be selected to ensure the student is participating in a technique class five days per week. At least four hours must be selected from performance courses (DANC 450, 460). The student must complete at least two semesters each of ballet, modern, and jazz technique courses, and at least one semester of two of the following: DANC 250, 270, 290, 320, 330. DANCE 425 may be used to complete the Technique/Performance requirement.

**RELATED STUDIES—9 total hours**

The Department of Dance believes that the professionally oriented student must augment his/her education via study in the related arts and sciences which complement specific career goals. The student will consult with the dance academic advisor in selecting 9 hours from the courses listed below, some of which may also meet General Education requirements:

- **ANTH** 220 Cultural Anthropology
- **ART** 140 Studio Experience (2-D)
- **ART** 148
- **DANC** 148
- **MUS** 148
- **THEA** 148 Direct Encounter with the Arts

- **ART** 220 History of Art
- **ART** 221 History of Art

**REPRESENTED COURSES IN THEORY—29 total hours**

**HISTORY—9 hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DANC 145</td>
<td>Experiencing Dance (also counts in General Education Area II)</td>
</tr>
<tr>
<td>DANC 245</td>
<td>Ballet History (Prereq: 145)</td>
</tr>
<tr>
<td>DANC 345</td>
<td>Twentieth Century American Dance (Prereq: 145)</td>
</tr>
</tbody>
</table>

**MUSIC—4 hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 195</td>
<td>Music Fundamentals for Dancers (Preq: approved application)</td>
</tr>
<tr>
<td>DANC 285</td>
<td>Music Style and Form for Dancers (Preq: 185)</td>
</tr>
</tbody>
</table>

**PRODUCTION AND MANAGEMENT—4 hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DANC 369</td>
<td>Lighting and Staging for Dance (Preq: Approved application)</td>
</tr>
<tr>
<td>DANC 469</td>
<td>Dance Management (Preq: Approved application)</td>
</tr>
</tbody>
</table>

**DANCE SCIENCE/ANALYSIS—8 hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 195</td>
<td>Introduction to Bartenieff Fundamentals</td>
</tr>
<tr>
<td>DANC 196</td>
<td>Conditioning for Dancers</td>
</tr>
<tr>
<td>DANC 295</td>
<td>Introduction to Dance Science and Kinesiology</td>
</tr>
<tr>
<td>DANC 296</td>
<td>Laban Movement Analysis (Preq: Sophomore standing)</td>
</tr>
</tbody>
</table>

**PEDAGOGY—2 hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DANC 440</td>
<td>Teaching Dance Technique (Preq: Consent of advisor)</td>
</tr>
<tr>
<td>DANC 400</td>
<td>Practicum (Preq: Approved application during the semester)</td>
</tr>
<tr>
<td>DANC 445</td>
<td>Senior Seminar (Preq: Senior standing)</td>
</tr>
</tbody>
</table>

| (DANC 480 Graduating Presentation is also considered a capstone experience in choreography, production, and management for the BFA student.) |

**BACHELOR OF ARTS IN DANCE**

**53 hours**

Bachelor of Arts in Dance

- During the second year of enrollment in the program, the student will be evaluated by the dance faculty regarding his/her progress in the program. The student is required to schedule an appointment with the assigned dance faculty member to receive the faculty feedback.

- By the beginning of the junior year, the BA student is expected to declare an area of focus in dance electives, including choreography and theory courses. By the end of the junior year, the student must design and propose a practicum project as a capstone experience which will further develop the focus area. The practicum proposal must be approved by a member of the dance faculty, who agrees to supervise the practicum experience, prior to the student's enrollment in DANC 400 in the senior year. A grade of "C" or better is mandatory in all required courses.

**GENERAL EDUCATION REQUIREMENT**

The student enrolled in the BA in Dance must complete all General Education Requirements as described in this catalog. Students who have chosen the Dance major will satisfy the Baccalaureate-level Writing Requirement by successfully completing DANC 345 Twentieth Century American Dance.

**LIBERAL ARTS REQUIREMENTS**

In addition to the minimum University General Education Proficiency and Distribution Requirements, the student enrolled in the BA in Dance must take 30 credit hours from approved General education courses. One course each must be selected from approved General Education courses in Art, Music, and Theatre. The remaining credit hours may be taken from any course approved for General Education, or may include a minor in a liberal arts area. Any other courses must have specific approval of the dance academic advisor in order to satisfy the Liberal Arts Requirement.

**REQUIRED COURSES FOR DANCE STUDIES—55 total hours**

<table>
<thead>
<tr>
<th>College</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>College of Natural and Health Sciences</td>
<td>23</td>
</tr>
<tr>
<td>College of Business Management</td>
<td>20</td>
</tr>
<tr>
<td>College of Social Science and Education</td>
<td>12</td>
</tr>
</tbody>
</table>

**CHOREOGRAPHY—5 hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 180</td>
<td>Choreography I (Preq: consent of advisor)</td>
</tr>
<tr>
<td>DANC 181</td>
<td>Choreography II (Preq: 180, 181)</td>
</tr>
<tr>
<td>DANC 290</td>
<td>Choreography III (Preq: 290)</td>
</tr>
<tr>
<td>DANC 480</td>
<td>Graduating Presentation (Preq: 380)</td>
</tr>
</tbody>
</table>

**RELATED STUDIES—9 total hours**

- **PHIL** 145 Philosophy of Art
- **PHIL** 180 Introduction to Philosophy
- **PHIL** 200 Introduction to Philosophy
- **PHIL** 312 Philosophy of Art
- **REL** 111 Myth and Ritual
- **THEA** 100 Introduction to Theatre
- **THEA** 105 Introduction to African-American Theatre
- **THEA** 141 Improvisation
- **THEA** 142 Acting I

**DANCE SCIENCE/ANALYSIS—8 hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 195</td>
<td>Introduction to Bartenieff Fundamentals</td>
</tr>
<tr>
<td>DANC 196</td>
<td>Conditioning for Dancers</td>
</tr>
<tr>
<td>DANC 220</td>
<td>Introduction to Dance Science and Kinesiology</td>
</tr>
<tr>
<td>DANC 220</td>
<td>Laban Movement Analysis (Preq: Sophomore standing)</td>
</tr>
</tbody>
</table>

**THEORY ELECTIVES—3–5 hours selected from:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 296</td>
<td>Laban Movement Analysis (Preq: Sophomore standing)</td>
</tr>
<tr>
<td>DANC 325</td>
<td>Special Studies in Dance Theory</td>
</tr>
<tr>
<td>DANC 380</td>
<td>Choreography III (Preq: 280)</td>
</tr>
<tr>
<td>DANC 385</td>
<td>Introduction to Dance Notation (Preq: 110, 130, 185)</td>
</tr>
<tr>
<td>DANC 489</td>
<td>Dance Management (Preq: Approved application required)</td>
</tr>
</tbody>
</table>
Dance Minor
18 hours

REQUIRED COURSES IN TECHNIQUE—12
total hours
Twelve hours from dance major techniques courses including at least one course in each of the three forms: Ballet Technique (110, 210, 310); Jazz Technique (120, 220, 320); Modern Technique (130, 230, 330). DANC 425, 460 and 465 may also be used to complete the technique requirement.

REQUIRED COURSES IN
CHOREOGRAPHY/THEORY— 4 total hours
DANC 145 Experiencing Dance 3
DANC 181 Dance Improvisation 1

ELECTIVES—2 total hours
Two hours to be elected from the following courses, in consultation with the dance academic advisor.
DANC 195 Introduction to Bartenieff Fundamentals 1

DANCE COURSES (DANC)

DANC 101 Beginning Ballet 2 hrs.
Elementary ballet technique for the general student. The emphasis is placed on line, control, alignment, and musicality. Students will learn simple combinations utilizing fundamental classical ballet vocabulary.

DANC 102 Beginning Jazz 2 hrs.
Elementary jazz technique for the general student. Rhythmic integration of isolated movements with emphasis on dynamics, style and performance is stressed.

DANC 103 Beginning Modern 2 hrs.
Elementary modern technique for the general student. The emphasis is placed on body integration, locomotor skills, dynamic variety, and musicality.

DANC 104 Beginning Tap 2 hrs.
Elementary tap technique for the general student, emphasizing the basic terminology as well as an investigation of rhythm and improvisation as audibly produced by the feet. Some turns and stylized arm movements may be included.

DANC 110 Ballet Technique I 2 hrs.
An introduction to the art of ballet, designed for dance majors and minors, primarily concerned with development of technique. The emphasis is placed on control, balance, musicality and strength of movement through the Russian method of training. Students will continue in DANC 110 until advanced to DANC 210 by the instructor. Repeatable for credit. Prerequisite: Advisor consent.

DANC 120 Jazz Technique I 2 hrs.
An introduction to the art of jazz dance, designed for dance majors and minors, primarily concerned with development of technique. The emphasis is placed on alignment, movement isolation, rhythm awareness of vocabulary and both percussive and free-flow combinations. Students will continue in DANC 120 until advanced to DANC 220 by the instructor. Repeatable for credit. Prerequisite: Advisor consent.

DANC 130 Modern Technique I 2 hrs.
An introduction to the art of modern dance, designed for dance majors and minors, primarily concerned with development of technique. The emphasis is placed on alignment, range of movement, dynamic quality, rhythm, dynamic balance and the application of kinesiological principles. Students will continue in DANC 130 until advanced to DANC 230 by the instructor. Repeatable for credit. Prerequisite: Advisor consent.

DANC 145 Experiencing Dance 3 hrs.
An introduction to the art of dance through historical and multicultural perspectives including direct experiences in the studio and viewing of live and recorded performances. Readings, lectures, videos/films, discussions, writings, and movement classes will be used to introduce the student to: non-Western dance, ballet, modern, jazz, tap, and other theatrical dance forms. The course also addresses training in dance, the development of movement vocabulary, and the creative process from literal and metaphorical perspectives. Activities are designed to stimulate the perception and enjoyment of dance on a kinesthetic, musical and visual level. The course meets Area I, Fine Arts, General Education requirement.

DANC 148 Direct Encounter with the Arts 4 hrs.
A course that uses a direct approach to introduce students to their cultural world by guiding them through first-hand experiences in a number of arts: cinema, photography, theater, sculpture, music, poetry, dance, and architecture. Classroom discussions are held following the students' participation in the various art events scheduled each semester, with students expected to write journals or respond to questions about the major events of the course. There will be a course charge in lieu of textbooks. Cross listed with ART 148, MUS 148, THEA 148. May be taken only once from College of Fine Arts Departments.

DANC 180 Choreography I 2 hrs.
A practical experience in dealing with the basic elements of dance composition. Emphasis will be placed on completion of choreographic studies. Prerequisite: Advisor consent.

DANC 181 Dance Improvisation 1 hr.
Exploration of movement through spontaneous problem-solving. The course is designed to evoke the student's creative individuality and sense of ensemble.

DANC 185 Music Fundamentals for Dancers 2 hrs.
Designed for the novice in music, the course places emphasis on rhythmic skills, but also teaches basic concepts of music through various forms, including word, meter, key signatures, intervals and triads. The rhythm begins with reading of simple and compound meters and progresses through complex syncopations and polyrhythms. Students will be able to read and perform rhythmic patterns using a variety of percussion instruments. Additionally, students will be introduced to formal concepts in music such as phrase, period, cadence and abstract formal designs. Prerequisite: Dance majors and minors only.

DANC 195 Introduction to Bartenieff Fundamentals™ 1 hr.
This course introduces Irmgard Bartenieff's theories of functional movement. Through practice students will explore major Fundamentals concepts such as body connection, sequencing, movement initiation, mobility/stability and spatial intent. Students will also learn the "Basic Six," a series of movement sequences that are distillations of Bartenieff's theories.

DANC 196 Conditioning for Dancers 2 hrs.
An introduction to the principles of physical conditioning with a focus on specific application of the information to individual needs and capacities. The course covers methods of building strength, flexibility and cardiorespiratory endurance as a means of enhancing dance performance, including instruction on equipment such as rotator disks, Therabands, and the Current Concepts Reformer utilizing the Dancer Specific™ technique.

DANC 210 Ballet Technique II 2 hrs.
A development of ballet technique at the intermediate level. Emphasis is on increased strength and flexibility, jumps, turns, and an introduction for women to pointe technique. Students will continue in DANC 210 until advanced to DANC 310 by the instructor. Repeatable for credit. Prerequisite: Placement audition or approval of Ballet Technique I instructor.

DANC 220 Jazz Technique II 2 hrs.
A development of jazz technique at the intermediate level. Emphasis is on musical integration of isolated movements, sequential combinations involving multiple turns, and skills in performance and quick study. Students will continue in DANC 220 until advanced to DANC 320 by the instructor. Repeatable for credit. Prerequisite: Placement audition or approval of Jazz Technique I instructor.

DANC 230 Modern Technique II 2 hrs.
A development of modern technique at the intermediate level. Emphasis is on lyrical integration of isolated movements, sequential combinations involving multiple turns, and skills in performance and quick study. Students will continue in DANC 230 until advanced to DANC 330 by the instructor. Repeatable for credit. Prerequisite: Placement audition or approval of Modern Technique I instructor.

DANC 245 Ballet History 3 hrs.
A survey of the historical development of ballet. Course content includes: roots in 16th century European peasant and court dance forms; refinement and reform in the 17th and 18th centuries; romantic and classic periods in the 19th century, and trends of the 20th century, including modernism, neo-classicism
and the influences of other dance forms. Prerequisite: DANC 145.

DANC 280 Choreography II
2 hrs.
Further exploration of the compositional elements as used in group choreography. Prerequisites: DANC 180 and DANC 181.

DANC 285 Musical Style and Form for Dancers
2 hrs.
The course surveys composers and musical style from the Renaissance through the twentieth century. There will be an emphasis on the chief stylistic characteristics of the major composers of each period, and discussion of the particular compositions in relation to their suitability for choreographic treatment. Score-reading is an important aspect of the course. Prerequisite: DANC 185.

DANC 290 Dance in the Elementary School
3 hrs.
This course covers the principles, materials, and techniques of teaching creative movement and dance activities to elementary school children as they can be applied in various learning environments. Lecture, observation, and laboratory experiences are provided.

DANC 295 Introduction to Dance Science and Kinesiology
3 hrs.
An introduction to the field of Dance Science for dance majors. Emphasis is placed on anatomical analysis, conditioning principles and injury prevention, with special attention given to application of information to technique class, rehearsal, choreography and individual anomalies.

DANC 296 Introduction to Laban Movement Analysis
2 hrs.
An overview of the theoretical framework and language for describing movement which was developed by Rudolf von Laban. This course includes the history of the development of Laban Movement Analysis, motif writing, and discussion and practice of the theories of Effort, Space, Shape and their relationship to Barteneff Fundamentals™. Prerequisite: sophomore standing.

DANC 310 Ballet Technique III
2 hrs.
Ballet technique for the advanced/pre-professional student in the classical idiom. Emphasis is placed on complex pas de deux, ensemble awareness, bonne pointe technique and men’s combinations. Repeatable for credit. Prerequisite: Placement audition or approval of Ballet Technique II instructor.

DANC 320 Jazz Technique III
2 hrs.
Jazz technique at the advanced/pre-professional level with work on quick-study and theatrical skill. Combinations will address a variety of jazz styles and develop the student’s own dynamic style. Repeatable for credit. Prerequisite: Placement audition or approval of Jazz Technique II instructor.

DANC 325 Special Studies in Dance Theory
1–6 hrs.
A study of areas of dance theory not included in existing courses. Examples of possible topics include: writing and criticism; costuming; make-up, technology (e.g., audio and video techniques; computer applications for music, lighting design, notation or choreography); and dance for the exceptional student. May be offered with a visiting instructor or artist-in-residence. Repeatable for credit up to 6 hours. Prerequisite: Advisor consent.

DANC 330 Modern Technique III
2 hrs.
Technique for the advanced/pre-professional student in the modern idiom. Emphasis is placed on the ability to quickly analyze and skillfully reproduce complex movement combinations within the technique. Performance skills are emphasized throughout the course. Repeatable for credit. Prerequisite: Placement audition or approval of Modern Technique II instructor.

DANC 345 Twentieth Century American Dance
3 hrs.
A survey of the purposes, functions, and manifestations of American dance forms from the beginning of the twentieth century to the present. Relationships are examined between dance and general cultural developments in the United States in each decade of this century. Topics covered include: the forerunners and pioneers of modern dance, avant-garde and post-modernists, and artists of jazz, tap, Broadway, movies, and the current media. Students will write several short papers and prepare a research paper. Examinations will emphasize essay writing. Dance majors use this course to meet the Baccalaureate Level Writing Requirement. Prerequisite: DANC 145.

DANC 380 Choreography III
2 hrs.
Concert and musical theatre choreography in the student’s area of concentration. Prerequisite: DANC 280.

DANC 385 Introduction to Dance Notation
2 hrs.
A study of dance notation systems which provide practical methods of recording human movement for purposes of analysis and reading. The course includes reading (interpretation), theory, and practice at the introductory level. Prerequisites: DANC 110, DANC 130, and DANC 185.

DANC 389 Lighting and Staging for Dance
2 hrs.
An introduction to dance production from a lighting and staging viewpoint. Course content includes: stage equipment and terminology, stage management, lighting instruments, distribution, and color, and lighting control via both manual and computer lighting board. Students will have hands-on experience in producing dance concerts through crew assignments completed outside of class, including lighting, rigging, and striking crew. The culminating assignment for the course is designing and executing lighting for a dance. Prerequisite: Approved application required.

DANC 400 Practicum
1–4 hrs.
An individual approach to a practical field experience in dance. The student must file an approved application for his/her project with the dance academic advisor prior to registration for the course. Through reading and practice, the student will have an opportunity to explore a topic of interest in depth. Repeatable for credit up to 4 hours. Prerequisite: Approved application required.

DANC 425 Special Studies in Dance Technique
1–6 hrs.
A study of areas in dance technique not included in existing courses. Examples of possible topics include: repertory, African-American dance, pre-classical dance forms, pointe, partnering, contact or advanced improvisation and advanced tap. May be offered with a visiting instructor or artist-in-residence. Repeatable for credit up to 6 hours. Prerequisite: Advisor consent.

DANC 440 Teaching Dance Technique
2 hrs.
This course is designed to develop the skills to teach introductory ballet, jazz and modern dance techniques to children and adults in both academic and private studio environments. The student will serve concurrently as a demonstrator two days per week in a dance technique course, as arranged by the course instructor. Prerequisite: Advisor consent.

DANC 445 Senior Seminar
1 hr.
An exploration of current trends, literature and developments in dance in a seminar format. Students will discuss, compare and analyze ideas generated by assigned readings, as well as their work on capstone projects. Prerequisite: Senior standing.

DANC 460 Performance Variable
An experience in student or faculty choreographed dance works, in fully produced projects not encompassed in specific dance courses. Application with approval of the dance advisor, the faculty evaluator, and the department chair, must be completed and submitted to the dance advisor at least one month prior to performance. Registration occurs after performance has been completed. Repeatable for credit up to 6 hours. Prerequisite: Advisor consent.

DANC 465 Dance Ensemble
1–3 hrs.
An experience in a performing ensemble which provides one or more of the following: master classes, residencies, lecture-demonstrations, and concerts in various dance styles in the region. Members must show proficiency in performance, improvisation, teaching, and public speaking. Members must concurrently enroll in at least one technique course at the 200 or 300 level as specified by the ensemble director. Repeatable for credit. Prerequisite: Sophomore, Junior or Senior standing required and audition or consent of ensemble director.

DANC 480 Graduating Presentation
3 hrs.
The preparation and presentation of an advanced choreographed project accompanied by a portfolio and an oral examination. Prior to registration the student must complete an application, select a faculty advisory committee, and receive the approval of the dance academic advisor. Course guidelines are available from the Department and should be reviewed by the student at least one semester prior to enrollment. Prerequisite DANC 380, successful completion of BFA junior sophomore requirement and approved application.

DANC 489 Dance Management
2 hrs.
The course covers front-of-house management and publicity, budget, programming, organization of elements involved in company management, and grantsmanship. Practical application of these principles will be evaluated wherever possible. Prerequisite: Approved application required.

DANC 495 Performance Workshop
2 hrs.
Students will perform a variety of roles and styles from a broad spectrum of music theatre repertoire. Scenes will be performed before a public or invited audience. Performers will be directed and evaluated by a faculty team from Dance, Music and Theatre. Prerequisite: MUS 395.
DANC 496 Performance in Music Theatre
2 hrs.
Students will perform in music theater productions both on and off WMU campus. Their performance will be evaluated by a team of evaluators, to include at least two WMU faculty/staff and/or two full-time professional staff members of the producing theater.

DANC 498 Readings in Dance
1-4 hrs.
Advanced undergraduate students with good academic standing may elect to independently pursue a program of readings in areas of special interest. Repeatable for credit up to 4 hours. Prerequisite: Approved application required.

DANC 499 Non-Reading Independent Study in Dance
1-4 hrs.
Advanced undergraduate students with good academic standing may elect to independently pursue the study of some area of dance through the creative process. Topics are chosen and arrangements are made to suit the needs of each particular student. Repeatable for credit up to 4 hours. Prerequisite: Approved application required.

DANC 598 Readings in Dance
1-4 hrs.
Advanced students with good academic standing may elect to independently pursue a program of readings in areas of special interest. Repeatable for credit up to 4 hours. Prerequisite: Approved application required.

DANC 599 Non-Reading Independent Study in Dance
1-4 hrs.
Advanced students with good academic standing may elect to independently pursue the study of some area of dance through the creative process. Topics are chosen and arrangements are made to suit the needs of each particular student. Repeatable for credit up to 4 hours. Prerequisite: Approved application required.

MUSIC
William Appel
Craig S. Arnold
John Campos
David Loberg Code
Curtis Curtis-Smith
Dorothy Gauthier
Ellen Greggs-Drane
Nancy Guy
Robert Humiston
Daniel Jacobson
Stephen Jones
Renata Artman Knific
Thomas Knific
Trent P. Kynaston
David L. Lapp
John A. Lychner
James McCarthy
Judy Moonert
Richard O'Hearn
Johnny Pherigo
Robert J. Ricci
Silva Roederer
Wendy Rohn
David A. Sheldon
Eric Shumsky
Lori Sims
Christine Smith
David S. Smith
Robert Spradling
Matthew Steel
Scott W. Stronburg
Linda Trotter
Bruce Uchimura
Robert L. Whaley
Karen Wicks
Brian Wilson
Steve M. Wollinberger
Bradley Wong
Stephen Zegeer

The School of Music at Western Michigan University is dedicated to music as an art form that elevates the lives of all who experience it; that embraces and transcends the entire range of human emotion, expression and communication; and that is vital to the cultural enrichment of society. The School of Music regards the music profession and all those associated with it as entrusted with and responsible for the advocacy of this living art form in all aspects. Specifically, the School of Music is committed to excellence in teaching as its foremost priority, believing that there is no more important task than providing a superlative musical education for students, both graduate and undergraduate, whether they be in professional programs in music education, performance, or therapy; liberal arts programs with an emphasis in music; or music courses and experiences for the general university population. In addition, the School of Music strives to preserve established musical traditions and to advance the frontiers of all types of music through scholarly research, creative performance, and innovative composition of the highest quality. As a public institution, the School of Music at Western Michigan University recognizes and accepts its obligation to serve the community, region, state and profession at large with all its resources, and it is committed to the basic principle that participating in the development of a musically enlightened citizenry is the most significant contribution it can make to society.

The School of Music is a member of the National Association of Schools of Music. The requirements for entrance and for graduation are in accordance with the published regulations of NASM and the National Council for Accreditation of Teacher Education. The School's program in music therapy is sanctioned by the American Music Therapy Association (formerly the National Association for Music Therapy).

Programs
The School of Music offers courses of study that lead to the Bachelor of Music, the Bachelor of Science, and the Bachelor of Arts degrees. The Bachelor of Music degree offers the student an opportunity to elect a major in performance, composition, music studies, music education, music history, music theory, and music therapy. The Bachelor of Arts and Bachelor of Science degrees afford the student the opportunity to major in music and minor in another academic area.

Three majors carry certification upon completion of degree requirements: the Bachelor of Music with a major in music education carries certification to teach music in the public schools, grades K-12; the Bachelor of Science with a major in music and a minor in elementary education carries certification to teach in the elementary classroom and/or to teach as a music specialist in the classroom, grades K-8. The student with a Bachelor of Music in music therapy is eligible to sit for the national board exam administered by the Certification Board for Music Therapists in order to earn the credential of Music Therapist - Board Certified. A music minor program is offered through the School of Music for students who have a background in music and who wish to extend their formal education in that field of study.

Admission
Admission to Western Michigan University is granted only by the Office of Admission and Orientation for undergraduate students. Application forms may be obtained by writing to the Office of Admission and Orientation.

Enrollment in a music curriculum is contingent upon admission to the University, which is achieved through the application process; and approval of the School of Music, which is achieved through the audition process. The student should begin by making application to the University and requesting audition information from the School of Music. Both procedures should be commenced early in the senior year, or early in the final year at a community college.

Approval to become a music major is based upon the student's background in music, as demonstrated on the major instrument or voice, the student's musical aptitude, and upon academic abilities reflected in grade point average and various scholastic test scores as they are available. Efforts are made to evaluate the student on the basis of musical potential and not upon desire to enter a specific professional area of music. All students commence a major in music with common "core" requirements and are, therefore, considered for entry into the major with this common basis in mind.

A student considering a music major should have a good background in applied music (instrumental or vocal study or performance). Preparation in piano, as a secondary instrument, is also helpful to the student, but not a requisite. Prior to entry into Basic Music 160, which is required of all music majors in the first year of study, the student must demonstrate knowledge of fundamentals. A fundamentals examination will be administered at the time the student is initially advised about classes.

The School of Music's audition and testing program has helped many students make a more intelligent choice regarding their
educational careers. Further information regarding admission to a music curriculum may be obtained by writing the Music Student Advisor in the School of Music. The School welcomes the opportunity to confer with prospective students, parents, and counselors regarding educational goals and plans.

Transfer Credit

Music credit from another institution is normally acceptable providing course substance is equivalent to a similar course required in the student's curriculum at Western and the student has earned a grade of "C" or better in that course. No credit hours exceeding the number granted for parallel work at Western will be accepted for transfer from another institution. In order to earn a Bachelor of Music degree from Western Michigan University, a student may not transfer more than thirty-seven (37) semester credit hours in music courses taken at a community college toward music curriculum requirements. If the "Performance Electives" requirement has not been completed at the time of the transfer, at least two of the remaining hours must be completed in major ensembles. Advisors will assist transfer students in finding ways of applying transferable hours not applicable to music curriculum requirements, toward General Education electives or free electives. Three areas—applied music, music theory, and piano proficiency for non-pianists—are by nature, skills courses which require competency at one level before the student is ready for the next level of course in a sequence. This competency can only be determined by demonstration and/or examination, which precludes the automatic transfer of credit in these areas.

Presumably, the transfer student will have completed many of the core requirements (see below) before enrolling at Western. In that case, the student must elect a major area of concentration within the music curriculum prior to enrollment. In order to maintain good standing as a major in music performance, composition, jazz studies, music history, or music theory, the student must earn a minimum grade point average of 3.25 in the first two courses that apply to the major area of concentration. The student who elects music education or music therapy as a major must maintain a grade point average of 3.0 in all courses in the major area of concentration in order to be recommended for intern teaching (music education) or music therapy internship. All transfer students must take a Piano Placement Examination before admission in order to project the feasibility of completion of piano proficiency requirements.

For further information regarding the transfer of music credits, contact the Music Advisor in the School of Music.

Advising

Advisor: Margaret J. Hamilton
Appointments: 2146 Dalton Center (616-387-4672)

The Music Student Advising Office provides one-stop advising for all students in a music curriculum. Advice on general education and major/minor requirements can be provided by consulting the music student advisor. Only when a student pursues a minor outside of the School of Music is an appointment required with another advisor.

Graduation requirements must be completed as stipulated in the Undergraduate Catalog, which is in effect at the time the student is admitted. Requirements may not be added in the midst of the student's enrollment, but the student may take advantage of course and curriculum alterations that may occur while work on the degree is in progress if these changes enhance the student's education. Each student is responsible for knowing the requirements that must be completed for the degree and for taking the steps necessary for completion of requirements. All music students are urged to take advantage of the advising services in the School of Music for assistance in making educational choices and for interpretation of requirements as they are stated in the Undergraduate Catalog.

Miscellaneous

In addition to required coursework, all students must present music requirements in recital performance and recital attendance.

The requirement for recital attendance: All music majors are required to attend Music Convocation (MUS 101) each semester they are in residence. Each student is allowed to be absent from one convocation per semester. Without exception, no more than one convocation per semester will be excused. Any absences beyond "one" will be recorded in the student's record. Absences must be made up by attending other presentations of Music concerts and recitals in which the student is not a participant. Absences in the student's record which have not been made up will prevent graduation.

The requirement(s) for recital performance are as follows:

1. Bachelor of Music candidates with a major in music performance must present at least one successful recital performance on a student recital (scheduled public recitals, convocations, or area recitals) prior to graduation. Individual students may be required to give additional presentations on student recitals at the discretion of their private teachers. Prerequisite to performance on any student recital shall be a recommendation by the student's applied teacher. Prerequisite to the presentation of Senior Recitals is an approved hearing of that recital by the student's area faculty. Recitals should be scheduled in the Concerts Office in the School of Music as far in advance as possible.

2. Bachelor of Music candidates with a major in areas other than music performance must present at least one successful solo performance on a student recital (scheduled public recitals, convocations, or area recitals) prior to graduation. Individual students may be required to give additional presentations on student recitals at the discretion of their private teachers. Prerequisite to performance on any student recital shall be a recommendation by the student's applied teacher. Prerequisite to the presentation of Senior Recitals is an approved hearing of that recital by the student's area faculty. Recitals should be scheduled in the Concerts Office in the School of Music as far in advance as possible.

Competency Examinations are available to students who qualify for advanced placement or a waiver of requirements in music courses even if no formal education at the college level may have been completed. Common areas of competency are applied music, secondary instruments, and music theory. Examinations may be scheduled in these areas to allow qualified students to demonstrate competency.

In the event that a student demonstrates competency in an area of study that is required in the curriculum, the student may elect two alternatives for fulfilling degree requirements: (1) request a waiver of the requirement, and elect an equivalent number of hours in music courses of the student's choice or (2) receive credit for the course(s) in which competency is demonstrated by paying an examination fee and according to the schedule approved by the Board of Trustees.

Scholarships and Grants in Music are awarded by the School of Music. Awards are made on the basis of musical talent and/or scholastic achievement. New students are eligible for consideration for these awards at the time of their audition/admission to the music curriculum. Decisions on music scholarships are made beginning in mid-March, so early auditions are advised.

For a listing of music grants and scholarships see "WMU College and Departmental Scholarships" elsewhere in the undergraduate catalog.

Music majors may also be eligible for any number of general University scholarships as described in the Student Financial Aid and Scholarships section of the Undergraduate Catalog.

Curricula

When a student is admitted to the music curriculum, a major area of concentration is usually not declared. Before any student may declare a major area of concentration the student must complete requirements in the music "core", which are courses required of all music majors, regardless of professional or vocational interests in the field. Core requirements will normally be taken in the first two years. For students who are interested in an in-depth introduction to professions for which this university offers certification courses (music education and music therapy), an opportunity will be provided for them to register for Field Experience courses.

Baccalaureate Writing Requirement

Students who have chosen any music major will satisfy the Baccalaureate Writing Requirement by successfully completing MUS 352 Non-Western Music.

Core Requirements—Bachelor of Music Degree

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 190</td>
<td>Theory Fundamentals 120 and 121</td>
<td>2</td>
</tr>
<tr>
<td>MUS 190</td>
<td>Conducting 215</td>
<td>1</td>
</tr>
<tr>
<td>MUS 190</td>
<td>General Education Electives</td>
<td>37</td>
</tr>
<tr>
<td>MUS 190</td>
<td>Major Area of Concentration</td>
<td>13-41</td>
</tr>
<tr>
<td>MUS 190</td>
<td>Free Electives to make a minimum of 122 semester credit hours</td>
<td></td>
</tr>
<tr>
<td>MUS 190</td>
<td>Music Clearance (verification of completion of recital performance and attendance requirements)</td>
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</tbody>
</table>

EXCEPTIONS TO CORE REQUIREMENTS

Jazz Studies majors may fulfill two of the four semester major ensemble requirements by electing MUS 118, 119, 210 or 211. Music Therapy majors complete only 8 hours of Applied Music 200 (including successful completion of a Sophomore Hearing), only 4 hours of Performance Electives; and are not required to complete a theory/history elective.

Composition majors complete only eight hours of Applied Music 200 (including successful completion of a Sophomore Hearing) and four hours of Applied Music 300; and only four hours of Performance Electives.

Keyboard majors are to replace Keyboard Fundamentals 120 and 121 with MUS 190 Accompanying (1 credit) in freshman-sophomore years and MUS 100 Organ (1 credit) in junior-senior years.
Music Education: Choral/General Music majors complete only 7 semesters of Performance Electives. Students for whom keyboard is the applied instrument must elect MUS 190 as one of the required performance electives, and may choose to substitute one credit of MUS 100 Organ for one credit of MUS 300 Piano. It is recommended that all Music Education majors have at least one jazz experience/ensemble.

Music Education: Instrumental majors complete only 6 semesters of Performance Electives plus 2 semesters of Marching Band. Students for whom keyboard is the applied instrument must elect MUS 190 Accompanying in the freshman-sophomore years as one of the required performance electives, and may choose to substitute one credit of MUS 100 Organ for one credit of MUS 300 Piano. Instrumental Education majors must also sing in Grand Chorus (or other choral ensemble) for two semesters. It is recommended that all Music Education majors have at least two jazz experience/ensemble.

All students wishing to earn a teaching certificate should have minimal keyboard skills upon entry to the major. Therefore, Keyboard Fundamentals (120-121) may not be applied towards any major that leads to a teaching certification.

Electives
Performance electives may be selected from the following list of courses:
1. All students are required to elect four semesters of a major ensemble. The major ensembles are: 107, 108, 110, 111, 112, and 113.
   Please note the following:
   • At least two of the required four semesters of major ensemble must be taken during the junior-senior years.
   • The four semesters MUST be taken in an ensemble in the student’s applied area.
   (Keyboard majors may elect any large ensemble, except that Keyboard/Music Education—Choral/General Music majors must elect a vocal ensemble and Keyboard/Music Education—Instrumental majors must elect an instrumental ensemble.)
2. The remaining four semester hours of performance electives may be selected from the following: MUS 107, 108, 109, 110, 111, 112, 113, 118, 119, 190, 210, 211, 212, 218, 317, 517.
   Please note: All keyboard majors are required to elect one semester of MUS 190 Accompaniment (therapy majors excluded). The student is expected to complete one performance elective during each term of enrollment.

Music History majors are required to complete two semesters of MUS 517, Collegium Musicum.

Theory electives may be selected from the following:
MUS 423, 460, 518, 555, 556, 560, 565, 566, 567.

Music History/Literature electives may be selected from the following list of courses:
MUS 570, 571, 572, 573, 574, 577, 578, 579, 580, 581, 583, 585, 586, 587.

Electing a Major Area of Study—Bachelor of Music Degree

Music majors will elect a major area of concentration in the fourth semester of study. The student will be accepted in the area of choice if he/she qualifies under the following guidelines:

Music History, Composition, Theory, Therapy
The student must have a minimum grade point average of 3.25 in “Core” courses which are in the same area as the elected major.

Music Performance and Jazz Studies
The student must have a minimum grade point average of 3.25 in “Core” courses which are in the same area as the elected major, as well as be approved for this major by taking a performance qualifying exam which should be passed not later than the Sophomore Hearing.

Music Education and Elementary Education
The student must have met the standards of the College of Education; must have completed all Music Core courses; with no grade of less than a “C” and a 2.5 average in those courses, and must complete the formal admission procedure as described in the Music Student Handbook.

Music Therapy
Prior to beginning practicum (400 level) courses in music therapy curriculum, the student must have 36 hours of coursework completed, the core music in theory/history/literature/comprehension/conducting with a GPA of 2.5 or better, and have a GPA of 3.5 in music therapy core courses, and have an overall GPA of 2.5. See the Music Student Handbook for a complete description of admission procedures and standards.

Music Therapy and Music Education
Students must earn a minimum grade point average of 3.0 in courses in the area of the major in order to be recommended for an internship (music therapy) or for a internship teaching assignment (music education).

If the student does not qualify according to the guidelines outlined above, the application will be submitted to the faculty committee in the area of the major for approval. In the event that approval is denied and the student does not qualify for any other major area of concentration the music advisor will outline other courses in music which may be applied toward the Bachelor of Arts degree with a major in music.

Music Education:
Choral/General Major

Grants certification to teach music at any grade level (K-12) 18 hrs.
Instrumental Methods I (344) 2
Methods Elective I 2
Select from the following: String Methods (345), Instrumental Methods II (347), Choral Methods (340), or General Music Methods (336).
Teaching and Learning in Music (348) 2
Conducting (331) 2
Class Instruments 6
Band—Complete these courses:
Flute/Saxophone (145); Oboe/Bassoon (142); Trumpet/French Horn (143); Trombone/Tuba (144); Percussion (130); Clarinet (133)
String—Complete three courses from those listed above for band emphasis and complete three semesters of study on a minimum of two string instruments other than own major string instrument, or complete MUS 128 and 129 plus four courses from those listed above for band emphasis.

Note: Those who test out of any of the above must fulfill their class instrument requirements by completing one or more of the following: String Class—Cello, Double Bass (128). String Class—Violin, Viola (129). Vocal Techniques for Music Educators (117); Music 130, 133, 142, 143, 144, 145, 146.

Methods Elective II 2
Select from the following: Music for the Special Student (385), Technology in Music Education (386), Keyboard Musicianship 220-221 2
Those who “comp out” of keyboard will complete this requirement by selecting courses from the class instrument or methods elective areas. Students who do not qualify for entry at the 220 level must complete Keyboard Fundamentals (120 and/121) as a deficiency. No class is to be counted twice. Those students who test out of a course or courses in the Keyboard Musicianship sequence will select courses from the instrument or methods elective areas to complete course requirements.

Voice Pass exam for Keyboard Musicianship 321, given by the Keyboard and Professional Education areas. The student should take Vocal Techniques for Music Educators 117 as part of four semesters of voice study. Four semesters of voice study are required, with one semester at 200 level voice.

College of Education Courses 25
Human Development 250 3
Teaching of Reading Methods (301) 3
Teaching and Learning. Secondary (302) 4
School and Society 396 3
Seminar in Intern Teaching (410) 2
Intern Teaching 10

Before the student will be recommended for intern teaching, she/he must have completed all courses in the major with a minimum grade point average of 3.0. The application for intern teaching assignment must be made in the Office of Professional Field Experiences prior to one full year before the assignment is to begin.

Music Education:
Instrumental Emphasis

Grants certification to teach music at any grade level (K-12) 18 hrs.
Instrumental Methods I (344) 2
Methods Elective I 2
Select from the following: String Methods (345), Instrumental Methods II (347), Choral Methods (340), or General Music Methods (336).
Teaching and Learning in Music (348) 2
Conducting (331) 2
Class Instruments 6
Band—Complete these courses:
Flute/Saxophone (145); Oboe/Bassoon (142); Trumpet/French Horn (143); Trombone/Tuba (144); Percussion (130); Clarinet (133)
String—Complete three courses from those listed above for band emphasis and complete three semesters of study on a minimum of two string instruments other than own major string instrument, or complete MUS 128 and 129 plus four courses from those listed above for band emphasis.

Note: Those who test out of any of the above must fulfill their class instrument requirements by completing one or more of the following: String Class—Cello, Double Bass (128). String Class—Violin, Viola (129). Vocal Techniques for Music Educators (117); Music 130, 133, 142, 143, 144, 145, 146.

Methods Elective II 2
Select from the following: Music for the Special Student (385), Technology in Music Education (386), Keyboard Musicianship 220-221 2
Those who “comp out” of keyboard will complete this requirement by selecting courses from the class instrument or methods elective areas. Students who do not qualify for entry at the 220 level must complete Keyboard Fundamentals (120 and/121) as a deficiency. No class is to be counted twice. Those students who test out of a course or courses in the Keyboard Musicianship sequence will select courses from the instrument or methods elective areas to complete course requirements.

Voice Pass exam for Keyboard Musicianship 321, given by the Keyboard and Professional Education areas. The student should take Vocal Techniques for Music Educators 117 as part of four semesters of voice study. Four semesters of voice study are required, with one semester at 200 level voice.
Intern Teacher (475) .......................... 10
Wind/Percussion students must complete two
semesters of Marching Band (109). All
other instrumental emphasis majors are
also strongly urged to elect MUS 102 (see
“Exceptions To Core Requirements”).

Before the student will be recommended for
intern teaching, he/she must have completed
courses in the major with a minimum grade
point of 3.0. The application for intern teaching
assignment must be made in the Office
of Professional Field Experiences prior to one
full semester before the assignment is to begin.

Music Therapy Major
Core (minus exceptions) Hrs.
Courses in Music Therapy 281, 289, 290, 380,
381, 383, 472, 473, 479, 480, 481 ... 22
* Keyboard Musicianship 220, 221, 320, 322... 4
Fundamentals of Guitar 126 ... 1
Voice Class 117 ... 1
Instruments of the Band and Orchestra 279 and
Instruments of the Music Classroom 280 ... 2
Professional Electives: select from 123, 128,
Performance Electives (selected from
electives listed under Core
Requirements) ... 5
Psychology 100 and 250 ... 6
Special Education 530 ... 3
* All music therapy majors who have passed a
piano competency exam may be excused
from an introductory Musicianship requirements
except MUS 322.

The student must achieve a 3.0 grade point
average in the major in order to be
recommended for MUS 481. In completing the
General Education requirements the therapy
major must complete BIOS 112 and SPPA 200.
The therapy major must complete at least one
course in dance.

Music Performance: Instrumental Major
In order to be permitted to major in music
performance the student must achieve a
minimum grade point average of 3.25 in MUS
200 and pass a performance qualifying
examination (see “Electing a Major Area of
Study”).

Applied Music (in addition to Core
requirements ) 200 ... 4
Applied Music (in addition to Core
requirements ) 300 ... 10
Performance Electives (in addition to Core
Requirements; see Electives above) ... 2
Chamber Music 218 ... 2
Composition 262 ... 2
Advanced History/Literature (in addition to
Core Requirements) ... 2
Counterpoint 560 ... 2
Musical Electives ... 6
Senior Recital (required for Music
Clearance) ... 0

Music Performance: Vocal Major
In order to be permitted to major in music
performance the student must achieve a
minimum grade point average of 3.25 in Applied
MUS 200 and pass a performance qualifying
examination (see “Electing a Major Area of
Study”).

Applied Music (in addition to Core
requirements ) 200 ... 4
Applied Music (in addition to Core
requirements ) 300 ... 10
Performance Electives (in addition to Core
Requirements; see Electives above) ... 2
Chamber Music 218 ... 2
Composition 262 ... 2
Advanced History/Literature (in addition to
Core Requirements) ... 2
Counterpoint 560 ... 2
Musical Electives ... 6
Senior Recital (required for Music
Clearance) ... 0

Music Theory
Hrs.
Composition 262 ... 2
Introduction to Musicology 570-571 ... 6
Seminar in Music Theory 565
(2 semesters) ... 4
Music History/Literature Elective (see Electives
above) ... 4
Counterpoint 560-561 ... 4
Orchestration 567-568 ... 8
Professional Electives (choose from
Composition 263, Seminar in Electronic
Music Composition 564, Seminar in Music
Composition 262, Musical Acoustics 566,
Style Analysis 360, Improvisation 518,
Jazz Arranging 555, Jazz Improvisation
558) ... 8
All Bachelor of Music: Music Theory
Candidates must pass a piano proficiency
examination as outlined below.

Composition
Hrs.
Composition 262-263 ... 4
Musical Acoustics 566 ... 3
Seminar in Music Composition 362 ... 8
Seminar in Electronic Music
Composition 564 ... 8
Counterpoint 560-561 ... 4

Music History
Hrs.
GER 200-201 and FREN 400 or FREN
200-201 and GER 400 ... 12
Introduction to Musicology 570-571 ... 6
Music History Electives (see Electives
above) ... 10
Counterpoint 560-561 ... 4
Professional Electives (choose from
Composition 262, Seminar in Music Theory
565, Orchestration 567, Musical Acoustics
566, Improvisation 518, Medieval Music 585, Renaissance
Music 566) ... 4
All Bachelor of Music: Music History
Candidates must demonstrate a level of
proficiency equal to that of MUS 290.

Advanced Keyboard Musicianship. This may
be done through a placement exam or the
successful completion of the course.
Jazz Studies

Applied Music (in addition to Core Requirements) 300
Jazz Ensembles 119 or 212 2
Jazz Combo 219 2
Jazz Composition 264 2
Jazz Arranging 555, 556 4
Jazz Improvisation 558, 559 4
Jazz History and Literature 583 4
Keyboard Musicianship 220, 221, 320, 322 4
Electronic Media 594 2
Professional Electives (choose from Piano 100, Composition 262/263, Conducting 330/331, Technology in Music and Music Education 386, Counterpoint 561, Seminar in Composition 564, Orchestration 567, Musical Acoustics 568) . . . . . 3

All Bachelor of Music: Jazz Studies candidates are required to present a senior recital.

Bachelor of Arts Degree

Music Curriculum

124 total hours Hrs.

1. General Education Electives 37

2. A major in music:
   Music Convocation 101 (6 semesters) 0
   Applied Music 200 (must pass sophomore hearing) 8
   Basic Music 160–161, 260–261 12
   Basic Music 161, 260, 261, electives; Aural Comprehension 162, 163, 259, 265 2
   Keyboard Fundamentals 120–121 4
   Music History and Literature 170, 270, 271 8
   Performance Electives (major ensemble) 12
   Music Electives 12

3. A minor in another department in University (minimum) 15
   (Note: In the event that the credit hours for the minor requirements established by the department which offers that minor are greater than 15, the students may make an appropriate adjustment in the hours allowed for free electives.)

4. Free Electives 22

To be awarded a Bachelor of Arts degree, the student, in completing requirements as outlined above, must have completed at least 70 hours of General Education, language and literature, science, and social science, including at least eight hours in one foreign language. If two or more years of high school preparation in one foreign language are presented for entrance, the requirements for foreign language may be waived.

Music Minor

24 hours

Minors must take the following basic courses:
   Fundamentals of Music 159 2
   Basic Music 160 3
   Aural Comprehension 162 1
   Basic Music 161, 260, 261, electives; Aural Comprehension 163, 259, 265; Conducting 215, 330, 331; Composition 262, 263, 362, 554; Music History and Literature 170, 270, 271, electives; Jazz Studies 264, 555, 556, 558, 559, 583, Applied Music 100, Performance Electives 107, 108, 110, 111, 112, 113, 190, 210, 211, 212, 218, 317, 517. Other electives as approved by the music advisor.

THE SCHOOL OF MUSIC DOES NOT OFFER A MINOR LEADING TO ELEMENTARY OR SECONDARY TEACHING CERTIFICATION.

Music Courses (MUS)

A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

Ensembles

MUS 106 Western String Chamber Orchestra 1 hr.
   A select string ensemble that explores the finest string orchestra repertoire, from Baroque to the twentieth century. The group maintains an active on- and off-campus performance schedule and will require a strong commitment and desire for musical and technical excellence. Membership by audition only. Prerequisite: Audition.

MUS *107 Treble Choir 1 hr.
   An ensemble of female vocalists which develops general musicianship and provides training in choral singing. Performances are presented on campus and in the community. Membership by audition.

MUS *108 Collegiate Singers 1 hr.
   A choral ensemble which prepares students for graduate study. Members are required to attend all rehearsals and performances. Membership by audition.

MUS 109 Marching Band 1 hr.
   The University Marching Band is the major performing ensemble for Fall football activities. Performances are presented on campus and in the community. Membership by audition.

MUS 110 Symphonic Band 1 hr.
   The University Symphonic Band is dedicated to the performance of outstanding literature, including original works for band, compositions for wind ensemble and orchestral transcriptions. An emphasis is placed on understanding the pieces performed from an aesthetic and stylistic basis as well as from a technical point of view. This ensemble maintains an active performance schedule on campus and in the community as well as throughout Michigan and the surrounding states. Membership by audition.

MUS 111 University Orchestra 1 hr.
   The orchestra is open to all students who have had a reasonable amount of previous experience. Many fine compositions are studied and played during the year, and the orchestra joins with other campus organizations in joint programs. Instruments are available for the use of students. Membership is by audition.

MUS *112 University Chorale 1 hr.
   An advanced choral ensemble which maintains a very active performance schedule on campus and in the community as well as throughout Michigan and surrounding states. Membership by audition.

   *Grand Chorus is a large ensemble which performs choral/orchestral compositions. Participation is required of members of the University Chorale, Collegiate Singers, and Treble Choir, but membership is open to other singers with the consent of the conductor.

MUS 113 Concert Band 1 hr.
   The University Concert Band is an all-campus organization dedicated to the performance of fine literature, including original works for band as well as outstanding orchestral transcriptions. The aesthetic aspect of the music is stressed and special emphasis is placed on musical style. This ensemble presents concerts on campus and in the surrounding community. Membership is by audition.

MUS 118 Gold Company II 1 hr.
   A vocal jazz and show entertainment ensemble which gives students the opportunity to develop their vocal skills while performing challenging contemporary choral literature. A small instrumental combo accompanies the ensemble, and choreography and specialty acts are included. The ensemble maintains an active performance schedule on campus and throughout the surrounding west Michigan area. Membership is open to all students by audition.

MUS 119 Gold Company 1 hr.
   A select ensemble which specializes in Jazz Vocal Entertainment. Specialty acts and choreography are included. A small instrumental ensemble accompanies the group. A very active performance schedule is maintained on campus, in the community, in Michigan and out-of-state. Membership is open to all University students by audition.

MUS 210 Jazz Lab Band 1 hr.
   The Jazz Lab Band performs student compositions and arrangements are encouraged and are a regular part of Lab Band Concerts. The Ensemble performs

Music Theatre Performer

See “Interdisciplinary Program” in College of Fine Arts.

Bachelor of Science Degree

Elementary Education—Music

See description under the College of Education section of this Undergraduate Catalog.
regularly on campus and in the surrounding community. Membership by audition.

MUS 211 Studio Accompanying
1 hr.
A laboratory experience in accompanying solo music. Students will be assigned three to four hours of varied studio accompanying per week. This course may be repeated for credit not to exceed a total of two semester hours.

MUS 212 Jazz Orchestra
1 hr.
The University Jazz Orchestra is a select ensemble which affords students the opportunity to perform outstanding literature in contemporary and traditional big band jazz. Special consideration is given to the rehearsal and performance of student compositions and arrangements. The ensemble performs regularly on and off campus. Membership is by audition.

MUS 218 Instrumental Chamber Music
1 hr.
Special ensembles formed to perform standard instrumental chamber music works. Ensembles may include a variety of combinations, i.e., string quartets, woodwind quintets, brass quintets, percussion ensembles, piano trios, etc. Credit will be granted only if a sufficient rehearsal/performance schedule warrants.

MUS 317 Opera Workshop
1 hr.
A production experience in the acting, singing, accompanying, and producing of musical theatre. The class is offered each semester and culminates in the performance of an opera or operatic scenes. Open to advanced singers, pianists, and persons interested in production techniques. Admission is by personal interview with the instructor.

MUS 514 Instrumental Chamber Music
1 hr.
Special ensembles formed to perform standard instrumental chamber music works. Ensembles may include a variety of combinations, i.e., string quartets, woodwind quintets, brass quintets, percussion ensembles, piano trios, etc. Credit will be granted only if a sufficient rehearsal/performance schedule warrants.

MUS 516 Music Theatre Practicum
1 hr.
A production experience in music theatre. Each semester culminates in an opera or musical comedy production. Open to singers, actors, accompanists, instrumentalists, and persons interested in production techniques. Admission by audition or permission of the instructor. May be repeated for credit.

MUS 517 Collegium Musicum
1 hr.
Performance of early Western music. Open to all students of the University. Additional transcription, arranging, editing and conducting of early music is required of Music History majors. Graduate students may count more than two hours of this course for graduation. Membership by audition.

Applied Music
Private lessons (applied music) in organ, piano, voice, and all orchestral and band instruments are offered to all University students to the extent that instructor time and practice facilities are available. Priority in applied music study is given first to music majors, second to music minors, and third to students wishing to take the study on an elective basis. All students who take private lessons must register for applied music by reporting to the Music Office. Only students enrolled in other classes at Western are eligible to receive applied music instruction. An audition or interview is necessary in order to be approved for study.

Students are required to make arrangements for a lesson time with the private teacher in the first days of classes each term. Every student should have a lesson during the first week of the term.

Final examinations are required of all students in applied music. Examinations will be heard and graded by a panel of members of the music faculty.

Students who register for one hour of credit per semester receive one 25-minute lesson per week; two credit hours, one 45-minute lesson; four credit hours, one 60-minute lesson. The more credit a student receives in applied music, the more is expected in practice time and materials.

A $7 fee is required for those enrolled in applied music at the 200, 300, 500, and 600 level in order to bring guest artists/performers to campus for additional musical instruction and enrichment.

MUS 100 Applied Music
1–2 hrs.
This level of applied music indicates private music study at a fundamental level. Credit earned may be applied to a Bachelor of Music degree only by special arrangement through the School of Music.

MUS 199 Applied Music-Music Theatre (voice)
1–4 hrs.
This level of Applied Music indicates "lower division" standing for music theatre students who have been approved for this level. Prerequisite: MUS 116.

MUS 200 Applied Music
1–4 hrs ($7)
This level of applied music indicates "lower division" standing for students who have been approved for this level through auditions or jury examinations.

MUS 201 Sophomore Hearing
1 hr.
An examination in applied music. All vocal majors must pass this to qualify for upper-level applied study.

MUS 300 Applied Music
1–4 hrs ($7)
This level of applied music indicates "upper division" standing for applied music and is used to designate junior- and senior-level applied music. A maximum of four credits per semester may be earned at this level.

MUS 301 Senior Hearing
1 hr.
An examination in upper-level applied music. All Wind-Percussion majors must pass this examination to be cleared for graduation.

MUS 501 Master Class
2 hrs.
The study of literature, performance practices, and techniques for a specific musical medium (instrument or voice). Individual performance assignments will be made appropriate to each student's level of accomplishment. Class meetings may vary from small groups of students with common performance levels to meetings of the entire class for the purpose of dealing with materials and techniques common to all performers. The class may be repeated for credit. Music majors only.

Music Classes

MUS 101 Music Convocation
No Credit ($60 fee)
A series of special musical events required of music majors. Programs include lectures and recitals by faculty, selected students, and guest artists. ($60 fee is assessed to all music majors in order to provide funds for travel and instruments used by students throughout the music program.)

MUS 102 Piano Class I
2 hrs. ($5 fee)
This is a beginning course for the development of piano playing skills for non-music majors/minors. The course will cover fundamentals of music reading, keyboard techniques, sight-reading, and harmonization.

MUS 103 Piano Class II
2 hrs. ($5 fee)
A continuation of MUS 102 Piano Class I. Because course goals do not align with other keyboard classes in the School of Music, the student will not be permitted to progress into other piano classes offered for music majors/minors. Prerequisite: MUS 102 or instructor consent.

MUS 115 Voice Techniques I
2 hrs.
The students who have been approved for this course by audition will explore and develop the voice as a healthy instrument for musical theatre performance. Vocal technique will be emphasized with some singing and coaching of easy lyric songs and arias from musical comedy and opera. Application of healthy vocal technique to dialogue will be included. Prerequisite: Audition only.

MUS 116 Voice Technique II
2 hrs.
A continuation of MUS 115, Voice Technique I. Prerequisite: MUS 115.

MUS 117 Vocal Techniques for Music Educator
1 hr.
A course that develops the understanding of vocal hygiene and vocal production, as well as develop the ability to perform simple phrases with direct application of production principles. Application of vocal production principles will be made using the speaking voice in the classroom. Prerequisite: Music Education major.

MUS 120 Keyboard Fundamentals
1 hr.
The course covers basic fundamentals of piano technique, sight-reading, transposition, improvisation, and simple harmonization of melodies using primary harmonies. The course must be taken concurrent with or following MUS 160. Prerequisite: MUS 159 or music reading ability.

MUS 121 Keyboard Fundamentals
1 hr.
A continuation of 120. The course of study includes major scales, sight-reading of simple pieces with two independent parts or melody with blocked and broken chord accompaniment, transposition, harmonization of melodies using primary and secondary harmonies, and improvisation using peria scales and specified chord progressions. Prerequisite: MUS 120 or instructor consent.

MUS 122 Voice Class
1 hr.
A study of the fundamental processes of breath control and tone production, providing some individual instruction in preparing and singing standard song literature. The course is designed to benefit students interested in solo and choral singing.

MUS 123 Voice Class
1 hr.
A continuation of MUS 122. Repertoire will include early English songs and seventeenth and eighteenth century Italian songs as well as other standard literature, with a minimum of five songs to be memorized during the semester. Prerequisite: MUS 122.
MUS 124 Guitar Class I
2 hrs.
This class will enable the student with no previous experience to use the guitar as an accompanying instrument. The course will provide basic instruction in the fundamentals of music reading as well as the fundamentals of the guitar. The student will be required to own or have access to a Folk or Classical type guitar.

MUS 125 Guitar Class II
2 hrs.
This class is intended for the student who has completed Guitar Class I for the student with some guitar ability who wishes to further develop his/her skills. The course will enable the student to use the guitar as a solo or melody-playing instrument. Instructions will be provided on tablature and transposition as it applies to the guitar and on various techniques as used in both the Classical and Folk idioms for melody or single-note playing. The student will be required to own or have access to a Folk or Classical type guitar. Prerequisite: Completion of MUS 124 or instructor consent.

MUS 126 Fundamentals of Guitar
1 hr.
This class is for the music major or minor who has an ability to read music and a basic knowledge of harmony but who cannot already play the guitar. The class will focus on the use of guitar in the music education and music therapy professions and will cover the different styles of beginning guitar playing, including an overview of basic chords, barre chords and the various strumming and picking patterns. The student must own or have access to a Folk or Classical type guitar. Prerequisite: MUS 160.

MUS 128 String Class—Cello, Double Bass
1 hr.
A course in the fundamentals of pedagogy and performance for the cello and double bass presented through materials commonly used in classes in the public schools. Prerequisite: Music Education major.

MUS 129 String Class—Violin, Viola
1 hr.
A course in the fundamentals of pedagogy and performance for the violin and viola presented through materials commonly used in classes in the public schools. Prerequisite: Music Education major.

MUS 130 Percussion Class
1 hr.
Fundamentals of percussion instrument pedagogy and performance. The student is required to perform on the snare drum in an acceptable manner and to demonstrate a knowledge of the beat, hand, and score-reading. The student will be expected to fulfill General Education requirements.

MUS 132 Clarinet Class
1 hr.
Fundamentals of clarinet pedagogy and performance. Performance for music majors only.

MUS 134 Trumpet/Horn Class
1 hr.
Fundamentals of trumpet and horn pedagogy and performance. Prerequisite: Music majors only.

MUS 135 Trombone/Tuba Class
1 hr.
Fundamentals of trombone and tuba pedagogy and performance. Prerequisite: Music majors only.

MUS 145 Flute/Saxophone Class
1 hr.
Fundamentals of flute and saxophone pedagogy and performance. Prerequisite: Music majors only.

MUS 148 Direct Encounter with the Arts ($50 fee)
4 hrs.
A course that uses a direct approach to introduce students to their cultural world by guiding them through first-hand experiences in a number of arts: cinema, photography, theater, sculpture, music, poetry, dance, and architecture. Classroom discussions are held following the students' participation in the various art events scheduled each semester, with students expected to write journals or response papers about the major events of the course. There will be a course charge in lieu of textbooks. Cross listed with ART 148, DACN 148, THEA 148. May be taken only once from College of Fine Arts Departments.

MUS 150 Music Appreciation: Live Music
4 hrs.
An introduction to music and music literature in conjunction with attendance at music concerts and recitals on campus. Classroom discussion and readings will guide the student through a variety of listening experiences that will stimulate perception and enjoyment of music on a visual as well as aural level. This approach will also ensure a wide sampling of musical styles and media while encouraging the student to become more aware of his/her musical surroundings. A schedule of the musical events requested for the semester will be issued during the first week of the semester. MUS 150 may not be elected by music majors to fulfill General Education requirements.

MUS 151 Music Appreciation: Jazz/Pop
4 hrs.
A study of the development of jazz and its importance as an American art form. The course includes a survey of the beginnings of jazz as a blending of the musical cultures of Africa and Europe. The development of jazz from the late nineteenth century to the present will be traced. Current trends in jazz and rock, as well as electronic influences in contemporary pop music, will be emphasized. Studies will include sociological and cultural trends and their influence on the evolution of the various styles and forms of jazz and pop. Implications for the future will be considered. MUS 151 may not be elected by music majors to fulfill General Education requirements.

MUS 152 Rock Music: Genesis and Development
3 hrs.
A study of rock and roll music since its inception in the mid-1950s. The impact of black rhythm and blues, jazz forms, and radio and television on rock music will be studied as well as further evolutionary developments such as "do-wop", soul music, folk rock, psychedelic rock, jazz rock, the various English schools, heavy metal, and punk styles, to mention but a few. The course will cover the material of rock from 1955 to present. It may not be elected by music majors to fulfill General Education requirements.

MUS 158 Jazz/Pop Music Theory
2 hrs.
A course in the theory on which Jazz and Popular musics are based. Topics covered will include chord nomenclature, construction, and voicing together with basic keyboard instrumentation and ear training. The course is open to music majors and non-majors who can read music. Prerequisite: MUS 160 with "C" or better, or permission of the instructor.

MUS 159 Fundamentals of Music
2 hrs.
A study of fundamentals, including notation, scales, intervals, basic chord construction, and the rhythmic/metric aspect of music. This course is open to all students as an introductory study in music theory.

MUS 160 Basic Music I
3 hrs.
A study of traditional harmony through partwriting and analysis including the inversions of diatonic triads and dominant seventh chords. Prerequisite: Acceptance as a music major or minor and the passing of a qualification examination in music fundamentals.

MUS 161 Basic Music II
3 hrs.
A continuation of MUS 160. Includes the study of secondary dominants, augmented sixth chords, borrowed chords, and modulation to foreign keys. Prerequisite: MUS 160 with the grade of "C" or better.

MUS 162 Aural Comprehension I
1 hr.
Aural comprehension strives to produce a listener/performer who can perceive sound in meaningful patterns—developing a hearing mind and thinking ear. This is achieved by the tandem development of two types of activities: listening and performance. Listening includes dictation, recognition or perception of musical events, and ensemble skills. Performance includes sight-reading, prepared performance, and improvisation. This course concentrates on diatonic melodies, simple and compound divisions of the beat, intervals, and triads. Prerequisite: Acceptance into MUS 160.

MUS 163 Aural Comprehension II
1 hr.
A continuation of MUS 162. This course develops dictation, error detection, sight-reading, performance, and improvisation skills applied to more advanced diatonic melodies, subdivisions of simple and compound beats, and diatonic chord progressions. Prerequisite: MUS 162 with a grade of "C" or better.

MUS 170 Music History I
2 hrs.
An introductory survey of the music from the late Baroque through the early nineteenth century. Prerequisite: MUS 160.

MUS 190 Accompanying
1 hr.
Supervised experience in accompanying vocal and instrumental music, both solo and ensemble.

MUS 215 Conducting
1 hr.
A course in the fundamentals of conducting, including beat patterns, and gestures for attack, release, phrasing, etc., use of the left hand, and score-reading. The student will be afforded a variety of experiences, i.e., conducting exercises for videotaping, conducting practice laboratories, etc. Prerequisites: MUS 161, MUS 163, and MUS 170 all with a grade of "C" or better.
MUS 220 Keyboard Musicianship
1 hr.
A course primarily designed for those who need to develop more advanced practical skills at the piano. Students learn to play all major and natural minor scales, harmonization using secondary chords, transposition of band parts into concert key, improvisation on specified progressions and rhythms, and sight-reading of pieces with larger range. Prerequisite: MUS 121 with a grade of "C" or better, or instructor consent.

MUS 221 Keyboard Musicianship
1 hr.
A continuation of MUS 220. Course emphasis is on adding all forms of minor scales to those previously learned, sight-reading 2 parts of SATB vocal scores, hymns and simple accompaniments, playing 3-part scores, harmonizing melodies using secondary dominants, and improving accompaniments to specified melodies and to physical movement. Prerequisite: MUS 220 with a grade of "C" or better, or instructor consent.

MUS 233 Italian/English Diction
1 hr.
A phonetic approach to the pronunciation of these languages designed for singers and choral directors. The performance of the language utilizes the vocal literature of major composers in each language.

MUS 240 Music for the Classroom Teacher
3 hrs. ($10 fee)
Designed for elementary education students without regard to previous musical training. Students are prepared to use music functionally and developmentally in the elementary classroom through singing, through playing the piano and informal instruments, and through responding to music rhythmically. Creative aspects and values of music are emphasized, and materials are studied in relation to their future uses in the classroom.

MUS 259 Aural Comprehension III
1 hr.
A continuation of MUS 163. This course develops dictation, error detection, sight-reading, performance, and improvisation skills applied to modal and chromatic melodies, irregular subdivisions of simple and compound beats, and chromatic chord progressions. Prerequisite: MUS 163 with a grade of "C" or better.

MUS 260 Basic Music III
3 hrs.
A continuation of MUS 161 designed to reinforce the melodic, harmonic and rhythmic concepts of traditional music by means of analysis and composition assignments. The main emphasis will be on the study of 18th and 19th-century techniques, styles, composers and forms. Prerequisite: MUS 161 with a grade of "C" or better.

MUS 261 Basic Music IV
3 hrs.
A continuation of MUS 260 designed to reinforce the melodic, harmonic and rhythmic concepts of traditional music by means of analysis and composition assignments. The main emphasis will be on the study of 20th century techniques, styles, composers, and forms. Prerequisite: MUS 260 with a grade of "C" or better.

MUS 262 Composition
2 hrs.
Beginning work in composition, with emphasis on the development of short works utilizing small instrumental combinations. Attention is given to melodic, harmonic and harmonic devices. Prerequisite: MUS 161, or permission of instructor.

MUS 263 Composition
2 hrs.
A continuation of MUS 262. Prerequisite: MUS 262.

MUS 264 Jazz Composition
2 hrs.
The fundamental aspects of composition in the jazz idiom, including harmonic progression, melodic design and rhythmic formulation. Intensive study will be made of well-known standard tunes as well as classic jazz compositions. All periods will be studied so that the student will have a well-grounded familiarity with basic compositional idioms, including the blues, standard AABA song forms, modal forms and more complicated sectional forms. All compositions created in class will be performed by class members or by the appropriate ensemble outside of class. Prerequisite: MUS 158 (or instructor consent); MUS 260 or concurrently.

MUS 265 Aural Comprehension IV
1 hr.
A continuation of MUS 259. This course develops dictation, error detection, sight-reading, performance, improvisation, and aural analysis skills applied to 20th century melodic, rhythmic, and harmonic idioms. Prerequisite: MUS 259 with a grade of "C" or better.

MUS 270 Music History II:
Medieval/Renaissance
3 hrs.
An introductory survey of the music of late Antiquity through the early seventeenth century. Prerequisite: MUS 170.

MUS 271 Music History III:
Nineteenth/Twentieth Century
3 hrs.
An introductory survey to the music of the early Romantic era through the twentieth century. Prerequisite: MUS 170.

MUS 279 Instruments of the Band and Orchestra
1 hr.
Students survey the string, woodwind, brass and percussion instruments commonly used in the band and orchestra. The major aim of the course is to make the student aware of the unique sound which characterizes each instrument and how that sound is produced. In developing perception and discrimination in this regard, the student investigates such things as the acoustical properties of the instruments, the correct formation of the embouchure for the brasses and woodwinds, the techniques of bowing string instruments, and the physical attributes required to perform successfully on certain instruments. All will learn the proper techniques for playing various percussion instruments commonly used in the classroom and will be given the opportunity to explore one or more of the brasses and woodwinds. Prerequisite: Instructor consent.

MUS 280 Instruments of the Music Classroom
1 hr.
Students will survey the instruments commonly used in their music classroom. All will learn the proper techniques for playing and teaching autoharp, ukulele, recorder, dulcimer, and others. Emphasis is placed on inclusion of these instruments in the music classroom. Prerequisite: Acceptance into Music Education curriculum.

MUS 281 Introduction to Music Therapy
1 hr.
An orientation to the discipline of music therapy via classroom lectures, video tape presentations, and clinical observations. This course should be taken following or concurrent with PSY 100.

MUS 289 Music Therapy Activities for Children
2 hrs.
This class will examine labels and categorizations involved in children populations, offer instruction in social-recreational instruments, allow for a more indepth study of appropriate music materials and activities, and allow for experience in designing and implementing music therapy treatment procedures for individuals and groups. Class time will be primarily used for instruction with some selected help time to allow for more individualized instruction. Exams will be of a written, playing, and/or presentational format. Prerequisite: MUS 126 and MUS 281, or both may be taken concurrently.

MUS 290 Music Therapy Activities for Adults
2 hrs.
This class will examine labels and categorizations involved in adult populations, offer instruction in social-recreational instruments (e.g., guitar, ukulele, etc.) to allow for a more indepth study of appropriate music materials and activities and allow for experience in designing and implementing music therapy treatment procedures for individualized instruction. Exams will be of a written, playing and/or presentational format. Prerequisite: MUS 126 and MUS 281, or both may be taken concurrently.

MUS 300 Advanced Keyboard Musicianship
1 hr.
A course devoted to developing sight-reading and harmonization skills, introduction to four-part, open-score reading, modal improvisation, improvisation on specified progressions, and playing by ear. Prerequisite: MUS 221 with a grade of "C" or better, or instructor consent.

MUS 321 Keyboard Skills for Singers
1 hr.
A course designed to concentrate on piano skills necessary for vocal and Elementary Education/Music (EEM) majors. The course will include accompanying techniques, harmonization using secondary dominants, transposition, open-score reading, sight-reading of melodies while improving accompaniments, and improvisation using blues progressions and scales. Prerequisite: MUS 320 with a grade of "C" or better or instructor consent.

MUS 322 Keyboard Harmonization Skills
1 hr.
A course devoted to developing harmonization and improvisation skills necessary for music therapy majors. The types of improvisation covered include use of pentatonic textures, modes, ostinato, use of lead-sheet symbols, playing by ear, functional keyboard harmony, and sight-reading. The course will also be open to piano majors wishing to increase their functional skills on the piano. Prerequisite: "C" or better or instructor consent.

MUS 330 Choral Conducting and Literature
2 hrs.
The fundamentals of choral conducting are presented, including patterns and rehearsal techniques. The study and selection of literature appropriate to various levels of junior and senior high school choirs is included. Prerequisite: MUS 215 with a grade of "C" or better.
MUS 331 Instrumental Conducting and Literature
2 hrs.
Beginning methods for homogeneous and heterogeneous groups will be studied with special emphasis on conducting techniques, personnel, and repertoire. The course requirements will focus on the development of good communication skills and the techniques of effective group leadership.
Prerequisite: MUS 231 with a grade of "C" or better.

MUS 347 Instrumental Methods II
2 hrs.
Advanced study of the materials and methods needed for successful teaching of instrumental music. Extensive involvement with actual teaching of bands in public schools is a central part of this course. Students will focus on the development of aesthetic behaviors and performance objectives for junior and senior high instrumental ensembles. Highly specialized techniques such as marching band, arranging, jazz ensemble, solo and ensemble contest and festival preparation, etc., will be discussed. Job seeking and professional growth will be discussed. Prerequisite: MUS 344 with a "C" or better.

MUS 348 Teaching and Learning in Music
2 hrs.
This course is designed to teach students to write outcomes, to plan and prepare learning activities to reach those outcomes, and to evaluate and assess the process used and outcomes. Classroom management, questioning techniques, conceptual hierarchies, sequencing techniques, program goals, short and long term goals related to program goals, and lesson planning will be discussed. Application will be in the junior/high school music classroom. Practicum experiences in junior high/middle school general music classrooms will provide the student with opportunities to apply principles developed in the class in a part of course requirements. Prerequisites: MUS 336 or MUS 344 with a "C" or better.

MUS 350 American Music
4 hrs.
A survey of 20th-Century music in the United States including concert, popular, and jazz styles. Influences of earlier American traditions and of other continents will be traced. The relationships between America's diverse modern music and its complex society will be explored. Ability to read music is required.

MUS 352 Non-Western Music
4 hrs.
A study of the traditional music of China, Japan, Southeast Asia, India and the Arabic countries, as well as of the non-literate cultures around the world, such as American Indian, Australian Aborigine, American Indian Native and Micronesian. One or several cultures will be selected for close study and a particular attempt will be made to understand the customs and attitudes of a people through their music.

MUS 360 Style Analysis
2 hrs.
An analytic study of the larger forms from the instrumental and vocal repertory. Prerequisite: MUS 260 with a grade of "C" or better.

MUS 362 Seminar in Music Composition
2 hrs.
Original work in composition accompanied by study and analysis of advanced twentieth century compositions and creative concepts. May be repeated for credit. Prerequisite: MUS 263.

MUS 380 Psychology of Music
2 hrs.
Physical, physiological and psychological aspects of sound and systems of tonal relationships. The effects of music on the individual and the consideration of music as a form of communication; the nature and measurement of musicality; the nature of musical memory; the underlying bases for musical taste and for aesthetic experience in music with emphasis on cultural influences. Prerequisite: PSY 100.

MUS 381 Research in the Psychology of Music
2 hrs.
Development and employment of research methods and techniques related to the psychology of music. Experimental projects will be required in areas dealing with music and/or musical behavior. Prerequisite: MUS 380 with a grade of "C" or better.

MUS 383 Observation and Measurement in Music Therapy
1 hr.
Overview of techniques of behavior measurement and accountability paired with actual clinical observations. Prerequisite: MUS 281 or concurrent. Reserve time for observation.

MUS 385 Music for the Special Student
2 hrs.
This course will provide an overview of disabilities, federal and state requirements, and problems of the gifted, talented, and culturally differentiated student. Methods for providing successful music experiences will be discussed. The course will provide opportunities to plan sample strategies (including individualized) for the special student found in the music classroom. Prerequisite: MUS 348 or concurrent.

MUS 386 Technology in Music and Music Education
3 hrs.
A class to prepare students to use computers and other related tools for professional tasks in music and music education. The class will acquaint students with ethical, legal and social issues related to computer usage, and develop a background in using computers 1) for word processing, creation of graphic images, database management and spreadsheet analysis, 2) to control synthesizers and other devices for digital sampling and synthesis, composing, arranging, and performing; 3) for managing and enriching musical learning through Computer Based Instruction in music, and 4) for information exchange and communication across networks. The course fulfills the University's computer literacy requirement.

MUS 395 Performance Development and Technique
3 hrs.
A workshop format utilizing exercises, scene rehearsals and performances in order to develop students' performing ability in musical theatre. Content includes sound and motion exercises, routines of a song or aria, and projection and auditioning techniques. Prerequisite: Consent of advisor and THEA 290 (or either prep or running crews).

MUS 450 Music Appreciation: The Symphony
3 hrs.
The course in THE SYMPHONY is a general music course which presents music for symphony orchestra from the composer's point of view. It deals with the materials, structure, texture, sonority, and style of orchestral music since the eighteenth century as well as the cultural milieu which gave rise to and brought about changes in musical style. Music reading ability not required. MUS 450 may not be repeated by music majors to fulfill General Education requirements. Not open to graduate music majors.

MUS 472 Clinical Practicum in Music Therapy
1 hr.
A lecture/lab course to provide an opportunity for the music therapy student to apply music therapy principles with assigned individual/group clientele in the Music Therapy Clinic and/or affiliated community agencies. Prerequisites: MUS 281, MUS 289, MUS 290,
MUS 473 Clinical Practicum in Music Therapy II
2 hrs.
A continuation of MUS 472. Prerequisite: MUS 472. Reserve time for clinical participation.

MUS 479 Influence of Music on Behavior
3 hrs.
Justification for the use of music to change human behaviors through analysis of historical evidence, theoretical assumptions, and published research. Description of the therapeutic process with the intervention of music from assessment to community transfer. Prerequisite: MUS 472. Reserve time for clinical participation. Liability insurance required.

MUS 480 Music Therapy Methods and Materials
3 hrs.
Study of phenomenological, cognitive, and behavioral orientation to treatment as applied to the music therapy setting. Review of contemporary issues affecting the clinical practice of music therapy. Prerequisite: MUS 472. Reserve time for clinical participation. Liability insurance required.

MUS 481 Music Therapy Internship
2 hrs.
A six-month internship at an approved facility. Prerequisite: Consent of department.

MUS 490 Undergraduate Workshop in Special Problems
1–3 hrs.
Designed for students interested in some special field of music not formally listed for instruction. All special problems must be approved by the Director of the School of Music, but may be under the direct guidance of any member of the Music faculty. This course may be elected as many as three times.

Open to Upperclass and Graduate Students

MUS 530 Advanced Choral Conducting
2 hrs.
Supervised experience in conducting vocal ensembles. The student may be called upon to prepare an ensemble for public performance. Prerequisite: Audition required.

MUS 531 Advanced Instrumental Conducting
2 hrs.
Supervised experience in conducting instrumental groups. The student may be called upon to prepare an ensemble for public performance. Prerequisite: Audition required.

MUS 542 Studies in Music Education: (topic) 2 hrs.
Topic to be announced. Selection will be made from the following or similar topics: Music in the Humanities, Evaluation of Music Education Materials, and Curriculum Planning for Innovation in Music Education. This course may be repeated to an accumulation of not more than 4 credits.

MUS 546 Computer Assisted Instruction in Music
3 hrs.
The primary goal of the course is to teach students who already program some of the specific techniques used in developing original software for CAI in music. The main activity in the course will be programming, and one of the products of the course should be, for example, a program of sufficient sophistication as to at least potentially qualify it for publication. Prerequisite: CS 105 or CS 502 or consent of instructor.

MUS 555 Jazz Arranging
2 hrs.
Jazz Arranging is a study of the art of arranging for the jazz ensemble—both traditional and contemporary. The course will undertake a detailed study of instrument ranges, transpositions and sound potential, and will cover voicing, scoring practices, calligraphy and contemporary trends within the medium. Prerequisite: MUS 158 (or instructor consent) and MUS 161, "C" or better required in each course.

MUS 556 Advanced Jazz Arranging
2 hrs.
A study and application of the art of arranging for the jazz ensemble, studio orchestra and show orchestra. The course will undertake a detailed study of scoring for winds, brass, strings, voices and percussion in relation to traditional and contemporary trends within the medium. Prerequisite: MUS 555 and MUS 264 or concurrently.

MUS 558 Jazz Improvisation I
2 hrs.
A study and directed application of the fundamentals of jazz improvisation including basic chord and scale construction and recognition, harmonic function, chord-scale relationships and basic blues and popular song forms. All students will be required to develop aural and performance skills relative to those theory skills. Prerequisite: MUS 158 (or instructor consent) and 161, "C" or better is needed in each.

MUS 559 Jazz Improvisation II
2 hrs.
A study and directed application of advanced techniques of jazz improvisation including chord extension, voicing, inversions and substitutions, chord function and progressions and complex scales and their applications. All students will be required to develop aural and performance skills relative to those theory skills. Prerequisite: MUS 558 and MUS 218 Jazz Ensemble or concurrently.

MUS 560 Counterpoint
2 hrs.
A study of the contrapuntal techniques of the eighteenth, nineteenth and twentieth centuries. Written assignments are closely correlated with the contrapuntal styles of significant composers. Prerequisite: MUS 161 with grade of "C" or better.

MUS 561 Counterpoint
2 hrs.
A continuation of MUS 560. Prerequisite: MUS 560.

MUS 564 Seminar in Electronic Music Composition
2 hrs. ($30 fee)
Original music composition with digital and analogue synthesizers and computers. Creation of sound scores for concert performance, film, video, dance, theatre, or art installations. Includes the investigation of various types of sound synthesis, as well as the operation of studio sound mixers and multi-track recorders. In addition to the weekly seminar, the student will be assigned a number of hours weekly for independent work in the studio for the realization of the project, which will receive periodic guidance and criticism from the instructor. May be repeated for credit. Lab fee required ($30). Prerequisite: MUS 263 or permission of the instructor.

MUS 565 Seminar in Music Theory
2 hrs.
Research projects in music theory. Research methods and analytic discipline are stressed. Study will be focused in an area of the student's need or interest. Prerequisite: MUS 261.

MUS 566 Musical Acoustics
3 hrs.
A course designed for the music student. Discussion as well as laboratory demonstration of such concepts as: simple vibrating systems, waves and wave propagation, complex vibrations, resonance; intensity and loudness levels; tone quality, frequency and pitch; intervals and scales; turning and temperament; auditorium and room acoustics; psychoacoustics. In addition, the instruments of the orchestra, the human voice, and recent developments in sound system components will be investigated. Prerequisite: MUS 161.

MUS 567 Orchestration
2 hrs.
A study of the characteristics of instruments, and of arranging for the various individual choirs, for combinations of choirs, and for full orchestra. Prerequisite: MUS 261.

MUS 568 Orchestration
2 hrs.
A continuation of MUS 567. Prerequisite: MUS 567.

MUS 570 Introduction to Musicology I
3 hrs.
A course in the general methods and techniques of research in the field of music. Students will complete annotated note cards on important reference tools and a research paper on a topic of their choice. Prerequisite: Permission of instructor.

MUS 571 Introduction to Musicology II
3 hrs.
The course will deal with the history, purposes, and scope of musicology. Topics to be studied include leading historians, past and present; modern methods of research, with special emphasis on primary sources; and bibliography of the field. Prerequisite: MUS 570.

MUS 572 Baroque Music (1600–1750)
3 hrs.
A survey of the choral and instrumental music of the Baroque masters such as J.S. Bach and G.F. Handel. Special attention to the development of style from monody through harmonic polyphony. Prerequisite: MUS 270 and MUS 271.

MUS 573 Classical Music (1750–1800)
2 hrs.
Examination of the chief works of Mozart and Haydn, with intensive study of symphonic form and the development of the classic opera. Prerequisites: MUS 270 and MUS 271.

MUS 574 Romantic Music (1800–1910)
3 hrs.
Music of the important composers of the period beginning with Beethoven, along with the historical, cultural, and political background of the era. Special attention is given to the development of Nationalism. Prerequisite: MUS 270 and MUS 271.

MUS 577 Symphonic Literature
2 hrs.
A survey of music written for symphony orchestra during the Classic and Romantic periods.

MUS 578 Chamber Music Literature
2 hrs.
A survey of chamber music literature of the Classic and Romantic periods.

MUS 579 Operatic Literature
2 hrs.
A survey of opera from 1600 to the present.

MUS 580 Solo Literature: (Topics)
2 hrs.
Solo literature for a specific medium (voice, piano, violin, etc.) will be studied from a theoretical, historical, and performance point of view. Topics to be announced. May be repeated for credit. Prerequisite: MUS 270 and MUS 271.
MUS 581 Choral Music Literature
2 hrs.
A survey of choral music (mass, motet, anthem, cantata, oratorio) from the Renaissance through the Romantic period.

MUS 582 Wind Music Literature
2 hrs.
A survey of windband ensembles and literature from the Renaissance period through the twentieth century. Prerequisites: MUS 270 and MUS 271.

MUS 583 Jazz History and Literature
4 hrs.
A survey of the history of jazz including aspects of sociology and history as they relate to the art form of jazz. All periods in jazz history, from its earliest roots in Africa and the slave culture in the United States, up through the blues, dixieland, swing, bop, mainstream and the more eclectic period of jazz rock and free-form jazz will be explored. Important works will be examined from each period in order to grasp the essentials of a particular style. Prerequisite: MUS 585 or department's consent.

MUS 585 Medieval Music
2 hrs.
A survey of music in Western Europe from the end of Antiquity to the early fifteenth century. The major developments in style, theory, and notation will be explored within the context of the general cultural and political environment of the era. Problems of performance practice will receive special attention with emphasis on primary manuscript sources and scholarly performing editions. Prerequisites: MUS 270 and MUS 271.

MUS 586 Renaissance Music
2 hrs.
A survey of music in Western Europe from the early fifteenth century to the early seventeenth century. Developments in the major musical genres of the era will be examined with emphasis on a comparison of the Franco-Flemish tradition with the emerging national styles. Performance practice options will be explored. Prerequisites: MUS 270 and MUS 271.

MUS 587 Contemporary Music
2 hrs.
A survey of trends in European music and music of the Americans from about 1910 to the present day.

MUS 590 Studies in Pedagogy
1–4 hrs.
Topics to be announced. Selection will be made from the following: Piano Pedagogy, Vocal Pedagogy, String Pedagogy, Brass Pedagogy, Woodwind Pedagogy, Pedagogy of Teaching Theory, or similar topics. May be repeated for credit. Prerequisite: MUS 300 level applied voice or permission of instructor.

MUS 594 Electronic Media
2 hrs. ($30)
The purpose of this course is to expose the student to the equipment used in various recording situations and its operation, as well as discussing the artistic use of this equipment. Although predominately a techniques course, areas which affect the creative aspects of the final recording will be discussed (such as microphone placement, tasteful vs. inappropriate editing, etc.). In addition to the recording aspects, other electronic instruments used in performances will be surveyed, including synthesizers of various types (both keyboard and non-keyboard) and traditional electronic instruments (guitars, electronic organs, electronic pianos, and various sound modification devices).

MUS 595 Workshops in Music Education
1–4 hrs.
Intensive, short term courses that address the instructional and pedagogical issues found in today's schools, as well as issues of specific concern for current teachers in the field of music. Topics will be from all areas of music education. Prerequisite: advisor's consent.

MUS 596 Multi-track Recording
2 hrs.
A course in the technique and techniques of multi-track recording and mixing. Students begin with an in-depth study of the mechanics of a multi-track recorder and the signal flow of a recording mixing console. Microphone techniques as well as various approaches to room set-up are presented through reading assignments and studio demonstrations. Attention is given both to traditional techniques and the need for engineers to try new approaches to familiar circumstances. Students also study the most commonly used signal processors and how they might be used during recording or mixing for best results. Various listening assignments introduce students to the subtleties of mixing. A final project is required wherein each student must organize and execute a full 24-track production, from microphone selection through the final mix. Prerequisite: MUS 594 or instructor's consent.

MUS 597 Projects in Music
1–4 hrs.
A program of independent study to provide the unusually qualified student with the opportunity to explore a topic or problem of interest, under the guidance of one of the faculty of the School of Music. The initiative for planning the project must come from the student and must be approved by the faculty member proposed to supervise the study. Prerequisite: Application approved by music advisor.

MUS 599 Projects in Recording Technology
1–4 hrs.
An independent study allowing the unusually qualified student the opportunity to explore a topic or problem in recording technology. Prerequisite: MUS 596 and approval by instructor.

THEATRE

D. Terry Williams, Chair
Randi Berndt
Kathy Blum
James Daniels
Vincent Faust
C. J. Gianakaris
Timothy Hanson
Joan Harrington
John Jensen
Matthew A. Knewtson
Tracey Lawe
Tom Lowry
Gwen Nagle
Paul Reinhardt
Greg D. Roehrick
Lydia Stillwell
Von H. Washington
Sandy Duke, Administrative Assistant

The Department of Theatre offers programs leading to the Bachelor of Arts and the Bachelor of Fine Arts degrees. Students should refer to degree and General Education requirements within this catalog for specifics. The Department of Theatre concentrates on undergraduate programs that the more advanced training offered in graduate schools or professional theatre internships/apprenticeship programs.

Opportunities for participation in the production program begin with the freshman year. The department presents four faculty-directed productions in the mainstage season, and four productions in the Footlights I and II Series all in the Irving S. Gilmore Theatre Complex. Additional student-directed plays are presented in the Footlights I and II Series and in the directing classes. All regular enrolled students in good academic standing are eligible to participate in these productions.

The Department of Theatre is fully accredited by the National Association of Schools of Theatre. The requirements for entrance and for graduation are in accordance with the published guidelines of NAST.

Admission as a Major

Admission to Western Michigan University is granted only by the Office of Admission and Orientation for undergraduate students. Application forms may be obtained by writing to the Office of Admissions and Orientation, 2240 Seibert Administration Building.

Enrollment in a theatre or music-theatre curricula is contingent upon admission to the University and approval of the Department of Theatre. Department approval is obtained through the theatre audition/interview program. The student may proceed by making application to the University at which time notification will be sent about the audition/interview program in the Department, or a request may be made for an opportunity to audition prior to making application to the University by obtaining an Audition/Interview Application from the Department. The student is urged to commence application procedures early in the senior year of high school, or in the final year at a community college.

Approval to become a theatre or music-theatre major is based upon the student's capabilities, as demonstrated by the audition or interview, upon academic abilities reflected in grade point average, various scholastic test scores as they are available, and upon letters of recommendation.

Further information regarding admission to a theatre or music theatre curricula may be obtained by writing to the Department of
Theatre. The Department welcomes the opportunity to confer with prospective students, parents, and counselors regarding educational goals and plans.

Advising
Advisor: Dr. Joan Herrington
1106 Gilmore Theatre Complex, (616) 387-3220

Theatre academic advisor will assist any student enrolled in the University with course selections in theatre. Appointments are made through the departmental secretary (387-3220). Theatre majors and minors must confer with the theatre advisor, who will help them plan their program and complete the required major or minor slip as soon as they begin their course work in theatre. Music Theatre Performance and Theatre Education Majors should meet with their advisors respectively.

Transfer Credit
It is department policy to accept no more than 18 hours of transferred credit toward a non-teaching major, 12 hours toward a teaching major, and 9 hours toward a minor.

Baccalaureate Writing Requirement
Students who have chosen the Theatre or Theatre Education major will satisfy the Baccalaureate Writing Requirement by successfully completing the following:
THEA 370 Theatre History I
THEA 371 Theatre History II
THEA 372 Music Theatre History and Script Analysis II

Programs
The Department of Theatre offers curricula including three majors, and one minor.

Theatre Major
Bachelor of Arts
57 Credit Hours
This program is designed for the students who want to prepare for graduate study in theatre or advanced, specialized professional training. It offers a program combining a broad background in theatre with a concentration in performance or design and technical production.

Required Courses
THEA 120 Stagecraft I
THEA 141 Improvisation
THEA 142 Acting I
THEA 170 Script Analysis
THEA 230 Theatre Practicum
THEA 331 Costume Design
THEA 332 Lighting and Sound Design
THEA 351 Directing I
THEA 470, 443

SUGGESTED COURSE OF STUDY FOR PERFORMANCE MAJORS (THR)
Six courses (3 hrs each) elective from the following list:
THEA 290, 341, 351, 370
THEA 332, 342, 352, 371, 290
Fourth Year—Fall
THEA 241, 290, 331
Second Year—Winter
THEA 243, 232, ENG 252 (General Education; prerequisite to THEA 370), THEA 290
Third Year—Fall
THEA 290, 341, 351, 370
Third Year—Winter
THEA 332, 342, 351, 290
Fourth Year—Fall
THEA 441, Direct Foorlights Production (Elective)
Fourth Year—Winter
THEA 470, 443

All Performance students following this course of study are reviewed by the Performance faculty. Satisfactory review is necessary for the student to elect upper-level courses in THEA 243, 341, 342, 443, 443.

SUGGESTED COURSE OF STUDY FOR DESIGN AND TECHNICAL PRODUCTION MAJORS (THD)
First Year—Fall (These courses may be taken either semester)
THEA 120, 170, 290
First Year—Winter (These courses may be taken either semester)
THEA 141, 142, ENG 252 (General Education; prerequisite to THEA 370), THEA 290
Second Year—Fall
THEA 220, 223, 231, 370, 290
Second Year—Winter
THEA 232, 371, 290
Third Year—Fall
THEA 331, 351, 290
Third Year—Winter
THEA 332, 290, Electives (see list below)

All students following this course of study are reviewed by the Design and Technical Production faculty/staff at the end of the second year. Satisfactory review is necessary for the student to elect upper-level courses.

Fourth Year—Fall
THEA 431, Electives (see list below)

Final Year—Winter
THEA 430, 470
Electives: Design and Technical Production students must elect three hours from the following list. The remainder of these courses are strongly recommended as elective to complement your major.
ART 140 Studio Experience (2D)
ART 201 Drawing
ART 202 Painting
ART 208 Watercolor
ART 220 History of Art
ART 221 History of Art
ART 222 History of Art
CRT 124 Set Construction
CRT 326 History of Costume I
CRT 327 History of Costume II
ENG 105 Thought and Writing

Theatre Minor
24 credit hours

Required Courses
THEA 120 Stagecraft I
THEA 142 Acting I
THEA 170 Script Analysis
THEA 231 Drafting and Color Media
THEA 420 Advanced Technical Problems
THEA 431 Advanced Design
Electives (Arts, Engineering, Consumer Resources, English, Theatre)

A grade of "C" or better is required in all courses.

Theatre Education Major
(Second major only)
Bachelor of Arts
39 credit hours

K-12 EMPHASIS
This program is designed for students planning to teach and direct theatre programs in the elementary or secondary schools.

Required Courses
THEA 120 Stagecraft I
THEA 141 Improvisation
THEA 170 Script Analysis
THEA 231 Drafting and Color Media
THEA 331 Costume Design
THEA 332 Lighting and Sound Design
THEA 351 Directing I
THEA 400 Special Topics (mime, puppetry, story telling)
THEA 471 Methods of Teaching
THEA 564 Creative Drama

A grade of "C" or better is required in all courses.

Students electing this major are strongly urged to choose a second major to enhance their prospects for employment. All teachers seeking certification must meet the requirements of the University, College of Education, and the State Board of Education. Graduates of this major receive Michigan Certification under "Speech."

SECONDARY EDUCATION EMPHASIS
This program is designed for students planning to teach and direct theatre programs in secondary schools.

Required Courses
THEA 120 Stagecraft I
THEA 141 Improvisation
THEA 142 Acting I
THEA 170 Script Analysis
THEA 231 Drafting and Color Media
THEA 232 Scenic Design
THEA 290 Theatre Practicum
THEA 331 Costume Design
THEA 332 Lighting and Sound Design
THEA 351 Directing I
THEA 400 Special Topics (mime, puppetry, story telling)
THEA 471 Methods of Teaching
THEA 564 Creative Drama

A grade of "C" or better is required in all courses.
Students electing this major are strongly urged to choose a second major to enhance their prospects for employment. All teachers seeking certification must meet the requirements of the University, College of Education, and the State Board of Education. Graduates of this major receive Michigan Certification under “Speech.”

**SUGGESTED COURSE OF STUDY FOR THEATRE EDUCATION MAJORS (THEA)**

**First Year—Fall** (These courses may be taken either semester)
- THEA 120
- THEA 170
- THEA 290

**Second Year—Winter**
- THEA 141, 142, 290
- Analyses I

**Third Year—Fall**
- THEA 351, 370

**Third Year—Winter**
- THEA 322, 352, 371, 471

**Fourth Year—Fall**
- Student Teaching

**Fourth Year—Winter**
- THEA 470, 564

**Music Theatre Performance**

Bachelor of Fine Arts Degree

83 credit hours

**REQUIRED COURSES IN DANCE — 21 hrs.**

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<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>DANC 104</td>
<td>Beginning Tap</td>
<td>2</td>
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<tr>
<td>DANC 110</td>
<td>Ballet Technique I</td>
<td>2</td>
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<tr>
<td>DANC 120</td>
<td>Jazz Technique I</td>
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<td>DANC 456</td>
<td>Special Studies in Dance Technique</td>
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<td>DANC 495</td>
<td>Performance Workshop</td>
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<td>DANC 496</td>
<td>Performance in Music Theatre</td>
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<td>MUS 115</td>
<td>Aural Comprehension</td>
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<td>MUS 116</td>
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<td>MUS 120</td>
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<td>MUS 121</td>
<td>Keyboard Fundamentals (Prereq: MUS 120)</td>
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<tr>
<td>MUS 159</td>
<td>Basic Music (Prereq: MUS 159)</td>
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<tr>
<td>MUS 160</td>
<td>Basic Music (Prereq: MUS 159)</td>
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<td>MUS 161</td>
<td>Aural Comprehension (Prereq: MUS 159)</td>
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<tr>
<td>MUS 162</td>
<td>Aural Comprehension (Prereq: MUS 159)</td>
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<tr>
<td>MUS 199</td>
<td>Applied Voice (4 semesters, 2 hrs. ea.)</td>
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<td>MUS 220</td>
<td>Keyboard Musicianship (Prereq: MUS 121, “C” or better)</td>
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<tr>
<td>MUS 395</td>
<td>Performance Development and Technique</td>
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**REQUIRED COURSES IN MUSIC — 23 hrs.**

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<td>THEA 142</td>
<td>Acting I</td>
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<td>THEA 230</td>
<td>Stage Makeup</td>
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<td>THEA 241</td>
<td>Voice and Movement I</td>
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<tr>
<td>THEA 243</td>
<td>Period Styles of Acting</td>
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<td>THEA 272</td>
<td>Music Theatre History Script</td>
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<td>THEA 290</td>
<td>Theatre Practicum</td>
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<td>THEA 341</td>
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<tr>
<td>THEA 342</td>
<td>Acting III</td>
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**THEA 351** Directing I (Prereq: Junior standing) . . . 3

**THEA 372** Music Theatre History Script Analysis II . . . 3

**ELECTIVES—7 hrs.**

Four hours from courses in the Department of Dance, the School of Music and the Department of Theatre, with the consent of the Music Theatre Performer curriculum advisor.

**ADDITIONAL REQUIREMENTS**

A student must complete all the General Education Distribution Program requirements as outlined in this catalog. Within these specifications, it is recommended that the student take two semesters of the following foreign languages: FREN 100, 101, and GER 100, 101.

Application to the program is by prepared audition before the Dance, Music, and Theatre faculty. Additional information is available by contacting the curriculum advisor. At the end of the sophomore year, each student must pass a performance jury in order to continue in the program; unanimous approval by each performance area is required. Music Theatre majors must audition for all staff-directed musical comedy, opera, and operettas each year.

A student must audition and enroll in Level I technique classes in ballet and jazz, or be placed in Level I classes upon completion of remedial work. The student must also be able to enroll in MUS 160 by passing a Music Qualification Exam. The student may be accepted for up to a one year probationary period in the program to reach this proficiency level in dance and/or music.

**BACCALAUREATE WRITING REQUIREMENT**

Students who have chosen the Music Theatre Performance BFA degree program will satisfy the Baccalaureate Writing Requirement by successfully completing THEA 372 Music Theatre History Script Analysis II.

Note: Evaluation of THEA 496 credits. Two of the three evaluators must be either faculty/staff of Western Michigan University or full-time professional staff of the presenting theatre.

**THEATRE COURSES (THEA)**

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

**THEA 100 Introduction to Theatre**

3 hrs.

Consider theatre as a part of the individual's cultural heritage and liberal arts background. Students attend theatre performances and have opportunities to participate in University Theatre. (Lab fee required for play attendance.)

**THEA 105 Introduction to African-American Theatre**

3 hrs.

A survey lecture course from an African-American perspective examining the activities and developments of African-American life as evidenced through its theatre, with emphasis on history, philosophy, dramatic creations, criticism, and concerns. Includes lectures on traditional theatre of Western Civilization and African contributions.

**THEA 120 Stagecraft I**

3 hrs.

A beginning course in technical production including familiarization with theatrical equipment and materials; planning and construction of basic stage scenery, costumes, and properties; the fundamentals of stage lighting; and laboratory work on University Theatre Productions. (Lab fee required for materials.)

**THEA 141 Improvisation**

3 hrs.

Techniques of improvisational performing. This course includes spontaneous and planned exercises to evoke and inspire the actor's capacity for inventive imagination and sense of ensemble.

**THEA 142 Acting I**

3 hrs.

Study and practice of the basic principles of acting.

**THEA 143 Children's Theatre Tour**

3 hrs.

Development of scripts for K-8 grades through improvisational techniques. Class will tour production second half of course. Prerequisites: THEA 141, THEA 142.

**THEA 148 Direct Encounter with the Arts**

4 hrs.

A course that uses a direct approach to introduce students to their cultural world by guiding them through first-hand experiences in a number of areas: cinema, photography, theatre, sculpture, music, poetry, dance and architecture. Classroom discussions are held following the student's participation in the various art events scheduled each semester, with students expected to write journals and response papers about the major events of the course. There will be a course charge in lieu of textbook costs. Cross listed with DANCE 148, MUS 148, ART 148. May be taken only once from College of Fine Arts Departments. (Lab fee required)

**THEA 170 Script Analysis**

3 hrs.

The study of selected plays from the standpoint of the theatre artist. Emphasis on thorough examination of the play script preparatory to production.

**THEA 220 Stagecraft II**

3 hrs.

A course in technical production including the planning and construction of complex stage scenery, costumes and properties; scenery painting, lighting technology; and laboratory work on University Theatre productions. Prerequisite: THEA 120. (Lab fee required for materials.)

**THEA 223 Period Styles of Design**

3 hrs.

A survey of historical periods and design styles as they are applied to the theatre. The student will include an examination of architecture, costumes, furniture, interiors, lighting, ornament and stage scenery.

**THEA 230 Stage Makeup**

3 hrs.

Study and practice of the basic principles and techniques of stage makeup.

**THEA 231 Drafting and Color Media**

3 hrs.

A methods course for beginning students in the special techniques of drafting for the theatre and in the use of various color media for design renderings and scale models. Prerequisite: THEA 120.
THEA 232 Scenic Design
3 hrs.
A course in scenography covering the design of stage settings and properties expressed through color renderings and/or the scenic model, including further development of skills in drafting for the theatre. Prerequisite: THEA 120, 170.

THEA 241 Voice and Movement
3 hrs.
Development and training of the actor's vocal and physical instrument for theatrical performance. Prerequisites: THEA 141 and THEA 142.

THEA 243 Period Styles of Acting
3 hrs.
Study and practice of acting in plays from selected major periods of theatre activity prior to the twentieth century. Topics may include Greek, commedia dell' arte, Shakespeare, Moliere, Restoration, and examples from eighteenth and nineteenth century drama. Prerequisite: THEA 241.

THEA 260 Arts Management
3 hrs.
A survey of procedures for Arts Management, including ticket office accounting, promotion, marketing, funding and audience development. Prerequisite: Consent of instructor.

THEA 272 Musical Theatre History and Script Analysis I
3 hrs.
An historical overview of the development of musical theatre from its earliest beginnings to 1943. Respective scripts will be analyzed within their historical context. Prerequisite: ONE 252.

THEA 290 Theatre Practicum
1–8 hrs.
Supervised experience in various areas of theatre in the University Theatre program. May be repeated for credit up to a maximum of eight semester hours (only six of which can apply toward major and three toward minor).

THEA 331 Costume Design
3 hrs.
A course in the design of theatrical costumes and accessories expressed through color rendering and including an overview of the history of the costume. Prerequisite: THEA 120 (THEA 231 recommended).

THEA 332 Lighting and Sound Design
3 hrs.
A course in the design of theatrical lighting and sound and in the practical application of those designs to the stage, including laboratory work on University Theatre productions. Prerequisites: THEA 120, 232, 331.

THEA 341 Acting II
3 hrs.
This course integrates theories and practices of improvisation, Acting I, and Voice and Movement I and II in the process of role study and development. Prerequisite: THEA 243.

THEA 342 Acting III
3 hrs.
The application of role study and analysis to character development in the preparation and performance of scenes from full-length plays. Prerequisite: THEA 341.

THEA 351 Directing I
3 hrs.
Functions of the play director as teacher, interpreter, coordinator, and collaborator. Focus is upon principles and problems of directing on the proscenium stage. Prerequisites: THEA 141, THEA 142, THEA 170, THEA 232.

THEA 352 Directing II
3 hrs.
A continuation of THEA 351. Focus is upon the principles and problems of directing for the non-proscenium stage and expansion of directional approaches to production. Students prepare and direct scenes and one short play using non-proscenium staging. Prerequisite: THEA 351.

THEA 370 Theatre History I
3 hrs.
Survey of theatre history from the beginnings to 1642. Playwrights, acting styles, theatre production, theatre architecture, and audience taste are studied. Prerequisite: ENGL 252.

THEA 371 Theatre History II
3 hrs.
Survey of theatre history from 1642 to the twentieth century. Playwrights, acting styles, theatre production, theatre architecture and audience taste are studied. Prerequisite: THEA 370.

THEA 372 Musical Theatre History and Script Analysis II
3 hrs.
A historical overview of the development of musical theatre from 1943 to the present. Representative scripts will be analyzed within their historical context. Prerequisite: THEA 272.

THEA 390 Professional Theatre Internship
3 or 6 hrs.
Advanced theatre majors may receive credit for participating in the Professional Theatre Internship Program with major professional theatres. Students must arrange an internship application and number of credits with the department’s Internship Coordinator. A maximum of six credit hours may be accumulated. Prerequisites: Consent of Internship Coordinator.

THEA 400 Special Topics in Theatre
1–3 hrs.
An investigation of topics of special interest related to theatre. Repeatable for credit under a different title. Examples of topics for study may include: dialects, mime, puppetry, script writing, advanced directing, theatre administration, touring theatre, advanced improvisation, stage management, and technical direction.

THEA 420 Advanced Technical Problems
3 hrs.
An investigation of the application of modern materials and techniques to the problems of the technical production of scenery, costumes, properties, lighting and/or sound in the theatre. Prerequisites: THEA 220, or THEA 331, or 332.

THEA 431 Advanced Design
3 hrs.
A course for advanced students in the design of scenery, costumes, properties, and/or lighting, the professional drafting of those designs for technical production, and the preparation of the designer’s resume and portfolio. Prerequisites: THEA 323, or THEA 331 or THEA 332.

THEA 441 Acting Studio
3 hrs.
An advanced course in the art of acting with emphasis on the individual needs of the student actor. May be repeated for a maximum of 6 credit hours, only 3 of which are applicable toward major. Prerequisite: THEA 342.

THEA 443 Acting for the Camera
3 hrs.
The study and practice of principles of acting as applied to film and television. Prerequisites: THEA 441.
The College of Health and Human Services provides education, research, and community assistance through its programs. Students receive training and education in direct service roles as well as in policy development, planning, and administration.

Students may earn the degrees of Bachelor of Science in occupational therapy, nursing, or employee assistance, Bachelor of Arts or Science in speech pathology and audiology, and Bachelor of Medical Science for physician assistant; Master of Arts in blind rehabilitation and speech pathology and audiology, Master of Science in occupational therapy, and Bachelor and Master of Social Work through their studies.

The School of Community Health Services in the College of Health and Human Services also provides programs in Holistic Health Care, Alcohol and Drug Abuse (both at the graduate level), Gerontology (at the undergraduate and graduate levels), and a concentration in Health Care Administration (graduate level).

Mission
The mission of the College of Health and Human Services at Western Michigan University is to contribute to the improvement of the quality of health and human services in the west Michigan area, the State of Michigan, and the nation as a whole through degree and non-degree instructional programs, research, and community service activities. The mission includes a commitment to foster the development of a comprehensive health and human service care system responsive to the citizens of the state and the nation and which contributes to enhancement of the overall quality of life in general.

Through the qualitative and innovative educational and professional service programs of the College a commitment is being made to the integration of education—within the College, between the College and other colleges of the University, and between the College and its communities, both professional and geographic. The College is further committed to ensuring that its teaching, learning, and discovery processes will focus on preparing people who understand their professional tasks in the context of a concept of quality that embraces the wholeness, challenge, and beauty of life and who will be prepared for leadership in a moral and professional sense as well as in an organizational sense.

Advising
Students admitted to Western Michigan University must also be admitted formally to the College’s programs through the individual departments, schools, or units. Interested candidates should contact the departments or program directors for further information.

Financial Aid
Scholarships and other forms of financial assistance are available for most programs in the College. Please refer to the section on Scholarships and Financial Aid.
The purpose of this course is to provide basic information to students and workers in the health and human service professions so that they will be able to work more effectively with visually impaired individuals within the community. Through a federal grant the department is able to offer assistance with tuition and provide stipends to qualified students who enter graduate studies in either of the specialties. Part of the department's function is to conduct workshops for professionals working in the field, provide consulting services, and initiate pertinent research.

### Blind Rehabilitation Courses (BLRH)

**BLRH 301 Visual Impairment and Blindness: An Overview**

2 hrs.

The purpose of this course is to provide basic information to students and workers in the health and human service professions so that they will be able to work more effectively with blind individuals. It is also intended for students who may be interested in entering a career in blind rehabilitation and would like to further explore their interest. An overview of visual impairment will be provided with both theoretical and practical components.

**Open to Underclass Students**

**BLRH 577 Services for Persons Who are Blind or Have Other Disabilities**

1 hr.

This course explores issues that affect services for people who are blind or have other disabilities. It includes prevalence and incidence of various disabling conditions, adaptive recreation, history and current status of service legislation, consumer organizations, professional organizations, accreditation models of services delivery, national and international agencies and organizations, national and international resources, social service programs, and trends and future issues.

**BLRH 584 Computer Technology in Rehabilitation**

3 hrs.

This course is designed to introduce the student to computer technology as it is related to disabled persons. Students will learn the uses, parts, and operating commands of common adaptive computers, as well as the software used with them. In addition, the major adaptive forms of input and output will be investigated.

**BLRH 588 Psycho-Social Aspects of Disability**

2 hrs.

This course provides an understanding of the psycho-social factors that impact upon the integration into society of individuals with disabilities. It examines the philosophy of rehabilitation, major classifications and paradigms, common stereotypes, attitudes and their measurement, psychiatric disabilities, theories of adjustment, psycho-social losses, issues relating to sexuality, personal adjustment training, the role of the family, the use of effective interaction skills, and the stages of group process.

**BLRH 589 Medical and Functional Aspects of Disability**

2 hr.

This course presents an interdisciplinary approach to the study of multi-handicapping conditions in rehabilitation. It includes information on the major disabling conditions such as traumatic brain injury, orthopedic, neuromuscular, visual, learning, speech and hearing, cardiovascular, mental and emotional disabilities, and other select disabilities. Emphasis is placed upon cumulative effects of concomitant disabilities with additional emphasis on visual impairment.

**BLRH 590 Physiology and Function of the Eye**

2 hrs.

The anatomy, structure, and function of the eye. Various eye diseases and malfunctions are stressed. The student is given an opportunity to observe all types of eye conditions and eye prostheses.

**BLRH 592 Introduction to the Education of Visually Impaired Children**

2 hrs.

An overview of the education of visually handicapped children. An introduction to the literature, history, principles, practices, and problems in the field, including curricular and methodological adaptations of various educational programs.

**BLRH 594 Principles of Orientation and Mobility**

2-3 hrs.

An examination and application of the fundamental principles underlying the acquisition of sensory information by severely visually impaired individuals.

**BLRH 596 Introduction to Electronic Travel Aids**

1 hr.

Systematic Instruction in use of Fundamental Electronic Technologies and Overview of Major Electronic Devices. Prerequisite: BLRH 595.

**BLRH 597 Principles and Practices of Low Vision**

3 hrs.

This course deals with assessment and training of individuals with functional vision problems. Emphasis is placed on optical, non-optical, and electronic devices which increase visual functioning. This course combines lecture and laboratory experience to present principles of visual rehabilitation along with practice in the application of those principles.

**BLRH 599 Gerontology**

2 hrs.

The course offers an overview of the characteristics, circumstances, and needs of the aging population of the United States and explores the types of services available to meet their needs. The course will focus upon the demography of the aged, the physiological changes and chronic diseases of aging, the social and economic aspects of aging, the psychological changes which come with age, and a review of the community resources which serve the aged.

### Community Health Services Courses (CHS)

**CHS 530 Seminar in Community Health Services**

1-4 hrs.

This course focuses on emerging issues relevant to the certificate programs in the School of Community Health Services.

**CHS 598 Readings in Community Health Services**

3 hrs.

This course is intended to assist the health professional with general background information on the emerging professions, disciplines, and specialty areas and therefore encourages interdisciplinary cooperation and collaboration in research, demonstration, and educational activities.

### Health and Human Services Courses (HHS)

**HHS 110 Introduction to Health and Human Services**

3 hrs.

This course provides an overview of the issues, philosophies, political ideologies, economic theories, and American values which have an impact on health and human service delivery. In addition, students will be introduced to the historical development, areas of services, and models of service delivery which are part of health and human services. The course will also provide students with the opportunity of learning about potential careers in the various professions within the field.

**HHS 461 Information Systems for Health Care Professionals: Medical Informatics**

3 hrs.

This course is intended to assist the health care professional become a more effective care provider and manager through training in the appropriate uses of Medical Informatics. Some of the topics that will be covered include: finding medical information; bibliographic and full-text databases, “expert systems” national networks; acquiring and using office practice systems; patient teaching and decision making; evaluating the usability of new technologies; and telemedicine.
HHS 511 The Health System and Its Environment 3 hrs. This course provides a descriptive analysis of the organization of the health system. The student who participates can expect to gain an understanding of the structure of health services as well as the processes of operation of the service system and the ways in which consumers make use of the system. The analysis focuses on the interplay of forces within the system as well as behind the system and its environment.

HHS 512 Principles of Health Finance 3 hrs. This course is an examination of the principles of finance as applied to health care management. The course will provide a basis for understanding the financial management function in a health care administration environment and on the use of financial information in health care management and decision making. Prerequisite: ECON 517 or equivalent.

HHS 513 Special Studies in Health Care Organization and Delivery Variable Credit. This course deals with intensive analysis of the organization, design, and delivery of health care services in specialized areas. The specialized areas cover long-term mental health, and mental retardation services, as well as group medical practice.

HHS 514 Basic Principles and Organization of Health Planning 3 hrs. This course is an introduction to the principles and methods of planning in the health system. It includes a descriptive analysis of the significance of planning effective health care services, alternative planning frameworks, and technical approaches to the planning process. In addition, the course surveys the history of planning in the health systems as well as the current structure arrangements for carrying out planning in the health arena both at the macro and micro levels.

HHS 515 Administrative Functions in the Health Care Setting 3 hrs. This course focuses on the knowledge and skills necessary for the major administrative functions in health organizations. These include goal setting, decision making, personnel management, data processing, service design, and general principles of financial management.

HHS 530 Clinical Theory for Health and Human Services 1-4 hrs. This course covers selected theories which form the foundation for health and human service practice in specialized areas. Students are expected to master the content as a basis for building foundation knowledge for clinical practice. Theory of environmental health, systems theory for the health setting, theories of substance abuse for nursing and medical practice, and community health theory are among the possible areas of study. The specific topics are announced each semester.

HHS 560 Clinical Practice in Selected Health and Human Service Areas 1-4 hrs. This course covers variable topics in clinical health and human service practice. It is a skills development course which helps students to become proficient in specific techniques and procedures related to patient care or client service. Clinical applications of biofeedback, clinical practice in genetic counseling, the role of the health team in clinical practice, the patient and clinical laboratory services, basic clinical skills for the substance abuse setting, and community health education practice are among the possible areas of study. The specific areas are announced each semester.

HHS 569 AIDS: Natural History of an Epidemic 3 hrs. This course is intended to provide a historical perspective and introduction to the social, psychological, biological, political, economic, ethical, and medical implications of HIV infection and the Acquired Immune Deficiency Syndrome (AIDS). The course will be taught by faculty and others in a variety of fields.

HHS 570 Field Education in Health and Human Services 1-6 hrs. This registration is designed to give the student a total learning experience during which the student can apply some of the knowledge and information obtained in the health and human services academic setting and further develop and refine his/her professional skills with the guidance and assistance of those professionals currently working in the health and human service area. Credit/no credit only. By permission of instructor.

HHS 598 Directed Independent Study in Health and Human Services 1-6 hrs. Individualized independent study (reading or research) under guidance of faculty member. Initiative for planning topic for investigation and seeking the appropriate faculty member comes from the student, with consultation from the advisor. Prerequisite: Consent of instructor and Program Advisor.

Holistic Health Care Courses (HOL)

HOL 100 Choices in Living 3 hrs. This course will focus on the relationship between individual choices, social responsibilities and optimal human functioning. Students will be educated in current theories and values clarification, motivation, and behavior change. Health and social issues relevant to young adults and throughout the life cycle will be examined. This course is designed for undergraduate students in all majors and is especially valuable for students interested in health and human services professions.

HOL 530 Special Topics in Holistic Health 1-4 hrs. Variable topic, variable credit course for consideration of current and special interests in holistic health. Specific topics, number of credit hours and prerequisites, if any, will be announced each time the course is scheduled. May be repeated for credit with different topics.

HOL 531 Introduction to Holistic Health 3 hrs. The primary purpose of this course is to provide an introduction to the philosophies, theories, and concepts involved in holistic health care. It is meant to serve both as a general educational experience for persons wishing to become familiar with holistic and essential basic instruction for persons wishing to apply for admission to the graduate certificate program in Holistic Health Care. Prerequisite: Senior or graduate status.

HOL 532 Holistic Approaches to Relationships 3 hrs. The purpose of this course is to provide an understanding of relationship development. In order to do this, students will acquire knowledge in self-concept formation, social systems theory, values development, and communication models. A major emphasis in the course will be on how to assist people in establishing and maintaining healthy relationships.

HOL 533 Holism and Community 3 hrs. A course designed to help students better understand the dynamics of community and the potential for holistic growth and health through the investment of self in a common and purposeful experience with others.

HOL 534 Holistic Health and Spirituality 3 hrs. This course helps students better understand the spiritual dimensions of each individual and the relationship of spirituality to the meaning of health. Various spiritual traditions, philosophies and practices will be explored with the primary emphasis on the implications of these teachings for everyday living. The course will address the role of spirituality in the therapeutic process for health care professionals and resources available for practitioners and educators. The format for the course will include lecture, discussion, experiential activities and audio/video presentations.

HOL 535 Holistic Approaches to Stress 3 hrs. This course will focus on the nature, sources and symptoms of stress, and provide a holistic approach for the management of stress. The relationship between stress and personality, lifestyle, health and illness will be explored. In addition, the reasons for management of professional and organizational "burn-out" will be presented.

HOL 536 Counseling Skills for Health Professionals 3 hrs. This course is designed to provide basic information on the counseling process and techniques as they apply to health care settings. This course is designed for health care professionals in allied health professions and not for majors in counselor education and counseling psychology or social work.

HOL 570 Field Education in Holistic Health 1-6 hrs. This registration is designed to give the student a total learning experience during which the student can apply some of the knowledge and information obtained in the health and human services academic setting and further develop and refine his/her professional skills with the guidance and assistance of those professionals currently working in the health and human service area. Credit/no credit only. Prerequisite: Consent of instructor.

HOL 598 Readings in Holistic Health 1-4 hrs. This course provides individualized, independent study and planning under guidance of a faculty member. Initiative for planning topic for investigation and seeking the appropriate faculty member comes from the student, with consultation from the advisor. Prerequisite: Consent of instructor.

EMPLOYEE ASSISTANCE PROGRAMS

This program is not currently accepting applications.

The Employee Assistance Academic Program is a professional program that prepares the student to implement employee assistance programs in either private or public...
businesses or institutions. The curriculum is designed to meet the needs of both traditional and non-traditional students, with courses offered both on campus and through the Office of Distance Education. This multi-disciplinary education focuses on community health services, psychology, social work, management, education, and counseling education and counseling psychology, as these areas apply to employee assistance programs. The major consists of 36 credit hours, including 12 hours of field placement. The six substance abuse services courses comprising the curriculum's minor are designed to prepare employee assistance professionals to recognize and treat workplace substance abuse issues and concerns and other counseling techniques.

ADMISSION
Students who desire to major in Employee Assistance Programs (EAP) are admitted into a pre-EAP curriculum at the time of admission to the University upon successful (2.0 average) completion of PSY 100 General Psychology, PSY 250 Abnormal Psychology, and EAP 220 Introduction to EAPs. EAP 220 is a field based learning experience, assuming responsibilities in work organization and human resource management and EAP administration. The second three credit hour course (EAP 470) is a field based learning experience, assuming responsibilities in work organization and human resource management and EAP administration. The second three credit hour course (EAP 470) assumes responsibilities in EAP direct service, substance abuse and addiction, and personnel psychology and problems. Through these courses, students will be able to actively apply the foundation of their knowledge and skill. There will be no waiver of field experience.

To be eligible for field work, students must first complete all required major and minor courses and have maintained a cumulative grade point average of 2.0 or above, with no grades less than 2.00 in required and prerequisite courses.

Field work is graded on a scale similar to academic coursework. Students are evaluated by a field supervisor who assesses areas of performance and judgment. Each area must be passed at minimum competency to receive academic credit.

REMEDICATION AND CONTINUANCY

1. Students will complete all required departmental courses and all required programs with a grade of "C" or better. Subsequent courses cannot be taken until prerequisites are completed successfully.

2. Students can repeat only one required departmental course, and that course only once, to attain a grade of "C" or better.

3. Students who fail to attain a grade of "C" or better in a professional course will be permitted to continue in the curriculum if at any time it is deemed by a review committee that the student will not be able to perform at a professional level.

4. The department may refuse to permit a student to continue in the curriculum if at any time it is deemed by a review committee that the student will not be able to perform at a professional level.

5. EAP 220 Introduction to EAPs: EAP Structure and Process in the Work Setting 3 hrs.

6. EAP 470 EAP Field Placement I 6 hrs.

7. EAP 471 EAP Field Placement II 6 hrs.

In addition to the required course work, students must complete this 360 clock hour field placement. The field placement is the culmination of the degree and is undertaken only after the completion of all other program courses and permission is granted by the program. The placement is a field based learning experience in assuming responsibilities in Work Organization and Human Resource Management and EAP Administration. Through the field placement, the student will actively apply the foundations of their knowledge and skill. There will be no waiver of field hours. Prerequisite: Successful completion of all EAP course work.

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Employee Assistance Programs major will satisfy the Baccalaureate Writing Requirement by successfully completing EAP 420 EAP Consultation (3 credits).

PROGRAM LEADING TO THE BACHELOR OF SCIENCE DEGREE

Minimum hours required for this curriculum — 122 credit hours

Course Requirements

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<th>General Education</th>
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<tr>
<td>Intellectual Skills (if necessary)</td>
<td>6</td>
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<tr>
<td>Computer Literacy Requirement</td>
<td>3</td>
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</tbody>
</table>

Electives

Recommended electives include courses from the departments of Education, Psychology, Management, Sociology, Social Work.

Required Psychology coursework 6

PSY 100 General Psychology 3

PSY 250 Abnormal Psychology 3

Professional Major Curriculum 36

EAP 220 Introduction to EAPs: EAP Structure and Process in the Work Setting 3

PSY 345 EAP Organization and Change 3

EDLD 420 EAP Education and Training 3

EAP 318 EAP Assessment Interviewing 3

SWRK 421 Case Management in Industry 3

EAP 319 EAP Administration 3

EAP 420 Case Management in Industry 3

EAP 470 EAP Field Placement I 6

EAP 471 EAP Field Placement II 6

Professional Minor Curriculum (Substance Abuse Services) 18

ADA 320 Legal and Illegal Drugs 3

ADA 325 Substance Abuse Diagnosis and Treatment Planning 3

ADA 326 Substance Abuse Treatment Processes 3

PSY 462 Individual, Group and Family Treatment 3

SWRK 420 Ethical Issues in Employee Assistance 3

CECP 483 Treating Diverse Clients in EAPs 3

Employee Assistance Programs Courses (EAP)

EAP 220 Introduction to EAPs: EAP Structure and Process in the Work Setting 3 hrs.

This course serves as the introductory and prerequisite for all courses in the major and is offered on a self-instructional basis. Content focuses on the organization of business and industry (both public and private); the organization of labor and labor unions; variations in labor-management relations across organizational types; discipline in union and non-union settings; grievances and arbitration; collective bargaining; historical overview of health and human services at the workplace; laws/regulations regarding workers’ compensation, EEO, health and safety, and affirmative action; employee benefits and health financing; career counseling, retirement counseling, and other human services in the workplace structure, and EAP.

EAP 318 EAP Assessment Interviewing 3 hrs.

This course focuses on the theories and methods of assessment interviewing for EAP services. Course content addresses client readiness; relationships, rationality and resources and drug training. Prerequisite: EAP 220.

EAP 319 EAP Administration 3 hrs.

This course is designed to provide an overview of the operational responsibilities within the various programs. Through student examination, manual preparation, selected readings, oral presentation, and classroom interaction it is intended for the total experience to provide an understanding of the requirements of the management and administration of an Employee Assistance Program. Major emphasis is placed on understanding current management trends in business and how those have been adapted to the EAP profession. An examination of policies, procedures and actual practices are highlighted in this class. Prerequisite: EAP 220.

EAP 420 EAP Consultation 3 hrs.

This course is designed to provide a classroom contained group and individual experience, where the student can learn about the role of the consultant, while using basic skills that the profession demands. Students participate in small and large group experiences, as well as individually tailored exercises, that are aimed at giving them a flavor of the consultant's practice. Major emphasis is placed on written and oral communication skills. This course fulfills the Baccalaureate Writing Requirement. Prerequisite: EAP 220.

EAP 470 EAP Field Placement I 6 hrs.

In addition to the required course work, students must complete this 360 clock hour field placement. The field placement is the culmination of the degree and is undertaken only after the completion of all other program courses and permission is granted by the program. The placement is a field based learning experience in assuming responsibilities in Work Organization and Human Resource Management and EAP Administration. Through the field placement, the student will actively apply the foundations of their knowledge and skill. There will be no waiver of field hours. Prerequisite: Successful completion of all EAP course work.

EAP 471 EAP Field Placement II 6 hrs.

This course is a continuation of EAP 470 EAP Field Placement I. In addition to the required course work and EAP 470, students must complete this additional 360 clock hour field placement. The field placement is the culmination of the degree and is undertaken only after the completion of all other program courses and the successful completion of EAP Field Placement I and permission is granted by the program. The placement is a field based learning experience in assuming responsibilities in EAP Direct Services and Substance Abuse and Addictions and Personal Psychology and Problems. Through the field placement the students will actively apply the foundations of their knowledge and skill. There will be no waiver of field hours. Prerequisite: EAP 470.
GERONTOLOGY

Ellen K. Page-Robin, Director

Gerontology, the study of the aging process and of old age, is offered as a multidisciplinary minor at Western Michigan University. Gerontology includes the study of aging through a disciplinary perspective, as well as the medical specialty known as geriatrics. Interest in gerontology has burgeoned in the United States with recognition that currently our population includes more than 30,000,000 persons beyond age 65—and that population segment is growing. Universities have responded through research and teaching to increase an understanding of the older portion of our population and to prepare trained personnel to work with older persons.

GERONTOLOGY COORDINATE MAJOR

The major consists of thirty credit hours of which twenty-two hours are required and include the required gerontology minor courses.

Required Courses

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<th>Course</th>
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<td>SOC 352</td>
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<td>SWRK 464</td>
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<td>OT 470</td>
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<td>BLRH 301</td>
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<td>SPPA 552</td>
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<td>PHIL 434</td>
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<td>GRN 490</td>
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(or an appropriate gerontological field placement in major field)

Electives

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<th>Course</th>
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<td>ANTH 531</td>
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<td>ED 505</td>
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<td>SOC 373</td>
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<td>SOC 552</td>
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GERONTOLOGY MINOR

The minor in gerontology is well designed to supplement formal training in other fields such as sociology, social work, occupational therapy, physical education and recreation, blind rehabilitation, speech pathology, and others. It cannot, however, be used for teacher certification. Knowledge and understanding gained from formal courses in the gerontology minor are supplemented by direct work with older persons through field experience. Study of gerontology can lead not only to vocational interests in services to older persons but can also prepare for graduate and professional work, enrich awareness of the society in which one lives, and allow the thoughtful and intelligent personal planning of one's own middle and later years.

The minor consists of twenty or more hours from the courses listed, of which four are required courses. Courses must be selected in consultation with one of the advisors. Exceptions to the program specified, such as the inclusion of independent studies through departmental readings courses, may be made with the approval of the advisor.

Required Courses

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Field Education:

Either GRN 490

Or a practicing in a participating department

3 or 4

Electives

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GERONTOLOGY COURSES (GRN)

GRN 490 Field Education in Gerontology

1–4 hrs.

This course is designed to give the student a learning experience during which the student can apply some of the knowledge and information acquired in the gerontology academic setting and further develop and refine his/her professional skills with the guidance and assistance of those professionals currently working in gerontology. The course is repeatable by permission only. Prerequisite: Consent of instructor.

GRN 521 Women and Aging

3 hrs.

An examination of the impact of aging on women, with special emphasis on the diverse experiences, challenges and social and economic conditions of older women. The course will explore the statuses and roles of women in an aging society. Topics to be covered include the economics and politics of aging, health status of women, women as caregivers and relatives, the plight of minority older women will be addressed.

GRN 525 Religion and Aging

3 hrs.

A survey of the views of and attitudes toward the aging process and older people held by the world's major religions. Particular attention will be paid to the relation of religious views and social policy in the U.S.

GRN 530 Special Topics in Gerontology

1–4 hrs.

Variable topic, variable credit course for consideration of current and special interests in gerontology. Specific topics, number of credit hours and prerequisites, if any, will be announced each time the course is scheduled. May be repeated for credit with different topics.

GRN 543 Survey of Geriatric Medicine

3 hrs.

This course provides an overview and survey of the care of the elderly patient from a medical perspective. The issues of medical problems, long-term care, nursing, rehabilitation, and the social considerations will be broadly discussed. In addition, the inclusion of all of the issues of elderly care will be analyzed.

GRN 544 Aging and Mental Health

3 hrs.

Survey of mental health and mental health treatment problems of older adults. Topics include the causes of major mental illness in old age, depression and dementia. Consideration will be given to etiologies, current therapies and treatments as well as barriers to treatment in this population.

GRN 545 Alcohol, Drugs, and Aging

3 hrs.

The problems of alcohol, medication, and illegal and illegal drug use, misuse and abuse among older persons will be discussed. Prevention, intervention and treatment will be considered. This course is cross-listed with ADA 545.

GRN 547 Alzheimer's Disease and Other Dementias

3 hrs.

Dementia is a complex issue compounded by stereotypical views of aging and the aged. This course focuses on social, psychological, etiological, and epidemiological issues related to dementia together with the problems of diagnosis and treatment. Alzheimer's Disease, probably the most common cause of dementia, will receive specific attention. The purpose of this course is to help students gain an understanding of dementia as both a social and medical problem.

GRN 598 Readings in Gerontology

1–4 hrs.

Individualized, independent study and reading under guidance of a faculty member. Initiative for planning topic for investigation and seeking the appropriate faculty member comes from the student, with consultation from the advisor. Prerequisite: Consent of instructor and program advisor.

SPECIALTY PROGRAM IN ALCOHOL AND DRUG ABUSE

Advisor: Jan Dekker

Room B329, Ellsworth Hall

Western Michigan University's alcohol and drug abuse certificate program (SPADA) provides professional education for all those who are interested in the substance abuse field. Multidisciplinary in nature, SPADA
Certificate Program in Alcohol and Drug Abuse Courses (ADA)

ADA 225 Drug Use: Personal and Social Impact 3 hrs.
This course is designed to increase understanding of substance abuse, alcohol and drug use through the public health disease model with an emphasis on psychological, physiological and social consequences of use and abuse. An overview of prevention, case finding and treatment strategies are provided.

ADA 320 Legal and Illegal Drugs 3 hrs.
To increase understanding of substance abuse, alcohol and other drug use, drug use and the public health disease model with an emphasis on psychological, physiological and social consequences of use and abuse. An overview of prevention, case finding and treatment strategies are provided. Open only to substance abuse minors.

ADA 325 Substance Abuse Diagnosis and Treatment Planning 3 hrs.
This course addresses the diagnostic categories for abuse and dependency across the spectrum of drugs of abuse. Emphasis is placed on individual-specific diagnosis and individual-specific treatment plans. Open only to substance abuse minors.

ADA 326 Substance Abuse Treatment Processes 3 hrs.
This course focuses on the continuum of care for substance abusers. Modalities of prevention, case finding, detoxification, inpatient treatment, residential treatment, therapeutic communities, day care, intensive outpatient treatment, outpatient treatment, and aftercare are presented both in theory and practice. Open only to substance abuse minors.

ADA 520 Family and Addiction 3 hrs.
This course provides students with knowledge on the effects of substance abuse on the family. Included is theory and practice regarding dysfunctional relationships, children of substance abusers, and resulting disorders.

ADA 525 Women and Substance Abuse Treatment 3 hrs.
This course provides knowledge on gender specific treatment of substance abusers. This includes physiological aspects of women, as well as cultural aspects and methods to enhance the treatment of women substance abusers.

ADA 530 Clinical Theory in Substance Abuse Services 1-4 hrs.
This course covers selected theories which form the foundation for Substance Abuse Services practice in specific areas. Students are expected to master the content as a basis for building foundation knowledge for applied practice. The specific topics are announced with each semester offering.

ADA 535 Drug Testing 3 hrs.
This course explores the theory and practice of drug testing and its applications in both clinical practice and employment settings. The spectrum of testing ranges from field dexterity to gas chromatography. Federal requirements are reviewed for application in both clinical and work settings.

ADA 537 Constructive Confrontation and Referral in Substance Abuse Services 3 hrs.
This course is designed to increase understanding of gender specific treatment of substance abusers. This includes physiological aspects of women, as well as cultural aspects and methods to enhance the treatment of women substance abusers.

ADA 541 Group Home Treatment 1-6 hrs.
This course reviews custodial, milieu, and function aspects of group home treatment. Theories and practices are presented with emphasis on long-term treatment outcomes.

ADA 545 Alcohol, Drugs and Aging 3 hrs.
The problems of alcohol, medication, and legal and illegal drug use, misuse and abuse among older persons will be discussed. Prevention, intervention, and treatment will be considered. This course is cross-listed with GRN 545.

ADA 560 Clinical Practice in Selected Substance Abuse Services Areas 1-4 hrs.
This course covers variable topics in clinical substance abuse services practice. It is a skills development course which helps students to become proficient in specific techniques and procedures related to client service. The specific areas are announced with each semester.

ADA 565 Alcohol, Drug Abuse, and Violence 3 hrs.
This course provides the student with knowledge of the multiple relationships of substance abuse and violence. Specific foci are the relationships of substance abuse and domestic violence, child abuse, and other assaultive behaviors.

ADA 567 Legal Offenders and Substance Abuse 3 hrs.
This course provides the student with knowledge on the theories associating substance abuse with criminal and civil offenses. Specific focus is the treatment strategies and techniques related to the offending population and long-term outcomes of decreased recidivism.

ADA 570 Field Education: Substance Abuse 1-6 hrs.
A clinical, prevention, research, or administrative field experience meeting practice requirements in certification of substance abuse services. The field experience involves direct supervision by faculty and clinical supervisors. Graded on a credit/no credit basis. Prerequisite: Consent of instructor.

ADA 580 Substance Abuse Prevention 3 hrs.
This course explores the multiple theories and techniques used in the prevention of substance abuse. The history and evolution of prevention is presented, as well as cognitive, affective, and behavioral strategies.

ADA 585 Student Assistance Programs 3 hrs.
This course provides students with knowledge of the theories and practices of student assistance programs. The course focuses on objective indicators of student involvement with drugs, intervention strategies, referrals, and follow-up.

ADA 590 Applied Alcohol and Drug Dependence Recovery Techniques 3 hrs.
This course provides the student with knowledge of self-help groups and formal relapse prevention strategies. Application of relapse prevention strategies is integrated into multiple aspects of the continuum of care.

ADA 598 Readings in Substance Abuse Services 1-4 hrs.
Individualized, independent study and reading under guidance of a faculty member. Initiative for planning topic for investigation and seeking the faculty member comes from the student with consent of the advisor. Prerequisite: Consent of instructor and program advisor.
The Professional Curriculum

The Western Michigan University School of Nursing seeks to prepare thoughtful, professional nurses who possess the skills, knowledge, and values necessary to deliver quality health care in the coming century. The faculty believe that the long-standing social contract between nursing and society conveys an understanding that community needs direct nursing services, that nurses develop partnerships with clients and other health care providers to promote holistic health care, and that caring is intrinsic to nursing. The curriculum integrates knowledge from liberal arts and sciences, and the discipline of nursing. The program emphasizes the development of skills, knowledge, and competencies essential for the scope of clinical judgement that distinguishes the practice of a professional nurse. Concepts of patterning, holism, caring, service to vulnerable groups, and partnership are emphasized.

ADMISSION PRENURSING

To be considered for admission to the Professional Nursing curriculum, students must complete the following courses or their equivalents. Students should consult with the nursing advisor to determine the equivalencies.

BIO 191 - Introduction to Human Biology and Anatomy .......... 4 hrs.
CHEM 155 - Chemistry for Health Professionals I .......................... 4 hrs.
CHEM 156 - Chemistry for Health Professionals II ....................... 4 hrs.
NUR 102 - Introduction to the Profession of Nursing ..................... 2 hrs.
PSY 100 - General Psychology ........................................... 3 hrs.
SOC 200 - Principles of Sociology .................................. 3 hrs.
Fine Arts (Area I General Education) ...................................... 3 hrs.
College-level writing/Proficiency 1 elective ............................. 3 hrs.
U.S. Culture and Issues (Area III General Education) ............... 3 hrs.
Mathematics (Proficiency 3/elective) .................................... 3 hrs.

Prelicensure students must complete the above courses with a grade of "C" or above, achieve a minimum cumulative grade point average of 2.5 or above and complete the formal application to be considered for admission to the Professional Nursing curriculum. Students will complete the application as part of the course requirements for NUR 102.

ADVANCEMENT PROFESIONAL NURSING CURRICULUM (PRELICENSURE)

Selection criteria for admission will include individual grades, cumulative grade point average, completion and professional appearance of the application form, a scored essay and availability of space in nursing courses.

ADVANCEMENT PROFESSIONAL NURSING CURRICULUM (PRELICENSURE AND RN PROGRESSION TRACKS)

The sequencing of the Professional Nursing curriculum is critical. Students must complete designated prerequisite requirements for each level in the nursing program before progressing to the next level. To remain in good standing within the Professional Nursing curriculum, students must achieve a grade of "C" or better in all nursing courses and maintain a cumulative grade point average of 2.0 or above. No more than two nursing courses may be repeated without review and approval by the Student Affairs Committee. Further, students may only repeat such courses once following the initial enrollment. This standard of allowing nursing students to repeat a course only once is consistent with policies and procedures for schools of nursing accredited by the National League for Nursing Accrediting Commission. Students who wish to appeal this policy or any others in the nursing curriculum must follow the University's General Academic Appeals Procedure.

Should a student fail to satisfactorily pass a nursing course at the end of a second enrollment s/he will be dropped from the program. Students who wish to continue in the program must appeal to the School of Nursing Student Affairs Committee. Students whose cumulative grade point average falls below 2.0 will also be placed on probation and removed from the program of studies. These students will not be allowed to progress in the nursing course work until the grade point average is raised to 2.0 or above and re-admission has been approved by the Student Affairs Committee. Following approval, re-enrollment to the program is contingent upon availability of space in nursing courses. Students who return to the program must comply with all School of Nursing policies in effect at that time. Students who wish to appeal decisions rendered by the School of Nursing Student Affairs Committee can do so following the University's General Academic Procedure.

NURSING CURRICULUM OUTLINE (PRELICENSURE)

127 credit hours

SUPPORTING COURSES — 63 hours

BIO 191 - Introduction to Human Biology and Anatomy ................. 4
BIO 232 - Microbiology and Infectious Diseases .......................... 4
BIO 240 - Human Physiology .............................................. 4
CHEM 155 - Chemistry for Health Professionals I ......................... 4
CHEM 156 - Chemistry for Health Professionals II ......................... 4

Recommended: Mathematics (Proficiency 3/elective) ..................... 3

Approved computer usage course or approved elective .................. 3
College-level writing course (Proficiency 1/elective) ...................... 3/4
General Education Area I (Fine Arts) .................................. 3
General Education Area II (Humanities) ................................. 3
General Education Area III (U.S. Culture and Issues) .................... 3
General Education Area IV (Other Cultures and Civilizations) ......... 3
Mathematics (Proficiency 3/elective) .................................... 3
HHS 461 - Informational Systems ........................................ 3
MATH 336 - Introduction to Statistics .................................. 3/4

127 credit hours

OT 225 - Growth, Development, and Aging .................................. 3
PHIL 434 - Biomedical Ethics and Society .................................. 4
PSY 100 - General Psychology .............................................. 3
SOC 200 - Principles of Sociology ..................................... 3
SOC 320 - Introduction to Social Psychology OR .......................... 3
SOC 390 - Marriage and Family Relations OR ............................ 3
SOC 479 - Female/Male Interaction ....................................... 3

CONCENTRATION — 12 hours

NURSING — 52 hours

NUR 102 - Introduction to the Profession of Nursing ............... 2
NUR 202 - Nurses' Role in Health Care I .................................. 6
NUR 203 - Nurses' Role in Primary Health Care II ................. 6
NUR 306 - Nurses' Role in Facilitating Health and Self-Care I .......................... 9
NUR 307 - Nurses' Role in Facilitating Health and Self-Care II .......................... 9
NUR 410 - Nurses' Role in Prevention, Treatment, and Control of Health Problems I .......................... 10
NUR 411 - Nurses' Role in Prevention, Treatment, and Control of Health Problems II .......................... 10

RN Progression Track

ADMISSION

To be considered for the RN Progression track, applicants must have achieved a 2.5 cumulative grade point average (on a four-point scale) from the associate degree or diploma program from which they graduated, and hold a current Michigan Registered Nurse license.

PREREQUISITES TO ENTERING THE PROFESSIONAL NURSING CURRICULUM

Prior to entering the nursing sequence of courses, Registered Nurses must complete the following 18 credit hours of general education/support course work.

Fine Arts (Area I General Education) ...................................... 3 hrs.
NURSING CURRICULUM OUTLINE—RN

PROGRESSION

(ASSOCIATE DEGREE GRADUATES AND DIPLOMA GRADUATES)

SUPPORTING COURSES — 35 hours

NURSING — 23 hours

NUR 204 Nurses' Role in Primary Health Care (RN) .... 6
NUR 309 Nurses' Role in Facilitating Health and Self-Care (RN) ..... 8
NUR 413 Nurses' Role in Health Promotion, Treatment, and Control of Health Problems (RN) .... 8
NUR 430 Special Topics in Nursing OR
SOC 479 Female/Male Interaction .... 3

CONCENTRATION — 12 hours

NURSING 277

Concentrations/Academic Minors

The faculty believe that it is important that students be offered the opportunity to explore personal areas of interest which complement their career in nursing. This may be achieved in one of two ways. The first exploratory option for nursing students is an academic minor. Since minors are more credit-hour intensive than areas of concentration, students will be allowed to count required courses in the curriculum toward a minor. Whether students elect to complete an area of concentration or a minor, it must be done with the approval of the nursing advisor. Examples of academic minors that students might pursue include: women's studies, philosophy, scientific and sociological studies. The second option is an area of concentration. With the approval of a nursing faculty advisor, students will select four courses (12 credit hours) from a specific area of concentration. Nursing students may also choose to design an area of concentration. Nine of the credit hours must be selected from the 300-500 level of course work. The remaining three credits may be selected from the 200-level. One-hundred-level courses may not be counted toward an area of concentration. Courses required in the curriculum or selected to meet general education or proficiency requirements cannot be counted toward an area of concentration. (E.g. SOC 200: Principles of Sociology is required in the nursing curriculum. Students will not be allowed to count this course as part of the concentration.)

Baccalaureate Level Writing Requirement

Students enrolled in the Prelicensure track of the nursing curriculum will satisfy the Baccalaureate Level Writing Requirement by successfully completing NUR 307: "Writing" in the Facilitating Self-Care II. Students enrolled in the Registered Nurse track of the nursing curriculum will satisfy this requirement through the completion of NUR 308 "Writing" in the Facilitating Self-Care (RN).

Nursing Courses (NUR)

NUR 102 Introduction to the Profession of Nursing

2 hrs.

This course will introduce students to the health care system and nursing's role and responsibilities within the system. Students will explore the nursing code of ethics, licensure issues, and the functions and purposes of nursing's national and international organizations. Prerequisite: Admission to the Prelicensure program.

NUR 202 Nurses' Role in Primary Health Care I

6 hrs.

Students will be introduced to the concept of Primary Health Care as defined by the World Health Organization. The primary focus will be on nursing process, health assessment, communication, and negotiation. Nursing practice will involve groups and individuals across the lifespan who are experiencing common health problems. Prerequisite: Admission to the Professional Nursing curriculum.

NUR 203 Nurses' Role in Primary Health Care II

6 hrs.

A continuation of NUR 202, concepts of partnership, data sources, holism, and common illnesses/health issues will be introduced. Nursing practice will focus on clients who are experiencing developmental transitions as they relate to health status. Prerequisite: Completion of NUR 202 with a grade of "C" or better.

NUR 204 Nurses' Role in Primary Health Care III

6 hrs.

The major focus of this course, in addition to primary health care, will include a review of nursing process, health assessment, communication, and self-development. The new concepts of partnership, care, holism, and health will be introduced. The laboratory component will include health assessment and interviewing techniques. Prerequisite: RN licensure and approval of School of Nursing.

NUR 306 Nurses' Role in Facilitating Health and Self-Care I

9 hrs.

In the first semester of this two-semester sequence, students will focus on concepts of teaching and learning, self-care, wellness, multi-culturalism, and family group care. Students will be paired with a child rearing/bearing family that they will follow throughout the remainder of their program. Prerequisite: Completion of NUR 203 with a grade of "C" or better.

NUR 307 Nurses' Role in Facilitating Health and Self-Care II

9 hrs.

In this second semester of a two-course sequence, students will focus on the concepts of health care systems, nursing as a profession, nursing case management, collaboration, and negotiation and research. Nursing practice will be provided in settings.
such as Housing Urban Development (HUD) housing units, group homes and halfway houses, and senior centers. Prerequisite: Completion of NUR 306 with a grade of "C" or better.

NUR 308 Nurses' Role in Facilitating Health and Self-Care (RN) 8 hrs.

This course places major emphasis on the concept of forming partnerships that facilitate health in families, populations, and communities. The laboratory component of this course will include comprehensive physical assessment of children and adults, information technology, group dynamics, and counseling techniques. Prerequisite: PHIL 434. RN licensure and completion of NUR 204 with a grade of "C" or better.

NUR 410 Nurses' Role in Prevention, Treatment, and Control of Health Problems I 10 hrs.

This first course in a two-course sequence places major emphasis on the concepts of chronicity, nursing research, and at-risk populations. In the first semester the specific content will include: crisis interventions and mental health concepts with adolescents and young adults; the investigation of relationships between socio-economic status and the health of a community; and the use of automated data bases for epidemiologic and outcome assessment purposes. Prerequisite: Completion of NUR 307 with a grade of "C" or better.

NUR 411 Nurses' Role in Prevention, Treatment, and Control of Health Problems II 10 hrs.

This is the second course in a sequence of courses. The course content will focus on the etiology and control of major health problems, conflict resolution, organization, leadership, and management, and nursing research. Nursing practice will be designed to continue the development of case management skills with groups and individuals in community and institutional settings. Prerequisite: Completion of NUR 410 with a grade of "C" or better.

NUR 412 Nurses' Role in Prevention, Treatment, and Control of Health Problems (RN) 8 hrs.

Course content will focus on the etiology and control of major health problems, conflict resolution, organization, leadership, and management, and nursing research. Nursing practice will be designed to continue the development of case management skills with groups and individuals in community and institutional settings. Prerequisite: HHS 461. RN licensure and completion of NUR 308 with a grade of "C" or better.

NUR 430 Special Topics in Nursing 1 hr.

Emerging trends and issues in nursing are a reflection of the health care environment as it evolves. Each semester this course will focus on one of these issues or trends. This course may be repeated for credit. Prerequisite: Admission to the Professional Nursing curriculum.

OCCUPATIONAL THERAPY

Mary Ann Bush
Richard Cooper
Sandra Edwards
Debra L. Hazel
Barbara Hemphill-Pearson
Shirley Lukens
Susan Meyers
Cindee Peterson

The Undergraduate Professional Program

Bachelor of Science

The undergraduate professional curriculum of occupational therapy is designed to prepare the student to treat clients with various disabilities and to be eligible for certification as an occupational therapist, following the successful completion of a Bachelor of Science degree.

Successful applicants are admitted at junior status or above. The program can be completed in four semesters, plus the required six months of fieldwork. The Baccalaureate degree in occupational therapy requires 128 semester hours with 51 semester hours of professional course work in the occupational therapy curriculum.

Accreditation

The Occupational Therapy Program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 4720 Montgomery Lane, P.O. Box 31220, Bethesda, MD 20824-1200, AOTA's phone number is (301) 652-AOTA. Graduates of the program will be able to sit for the national certification examination for the occupational therapist administered by the Eligible Board for Certification in Occupational Therapy (NBCOT). After successful completion of this exam, the individual will be an Occupational Therapist, Registered (OTR). Most states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination.

The Professional Curriculum

The professional curriculum uses a holistic and integrated approach in developing those characteristics identified for the graduated student. Key to the educational philosophy of the department is the developmental sequencing of content and learning experiences related to professionalism, personal environment, and the occupational therapy process. The implementation of the philosophy into course design results in the inclusion of most learning objectives into several courses in a spiral and flexible pattern. This design maximizes the development of clinical reasoning skills.

Admission Requirements

The Occupational Therapy Department has established a maximum enrollment number for each admission period. Consequently, this department has established an admission selection procedure. Students interested in admission are encouraged to contact the College of Health and Human Services advisor well in advance of expected admission. Imposed deadlines are strictly enforced. The pre-occupational therapy curriculum is designed for students considering occupational therapy as a professional choice.

Minimum criteria for admission consideration to the professional program includes:

1. Admission to the Western Michigan University Pre-Occupational Therapy Curriculum.
2. Junior status (at least 56 semester hours at the time of enrollment in the professional occupational therapy curriculum).
3. Completion of all Intellectual Skills Requirements.
4. Satisfactory completion of all prerequisite course work:
   - General or Introductory Psychology 3 hrs.
   - Behavior Sciences (Psychology, Sociology, or Anthropology) 3-6 hrs.
   - Basic Course in Biological Science (Human Related) 3-6 hrs.
   - Normal Human Growth and Development Covering the Life Span 3-6 hrs.
   - English Composition 3 hrs.
   - Human Anatomy with Lab 3-4 hrs.
   - Human Physiology with Lab 3-4 hrs.
   - Abnormal Psychology 3 hrs.
   - U.S. Culture and Issues 3 hrs.
   - Completion of all above courses with a "C" or better. Grade point average is a factor in admission. The grade point average used for admission is based only on the above required prerequisites.
5. Completion of course work in each of the following areas with a grade of "C" or above must also be completed by the date of application. The grades obtained in these courses, however, will not be computed in the grade point average used for admission:
   - General Chemistry with a lab equivalent to PHY 103 at WMU 3-4 hrs.
   - General/elementary Physics with a lab equivalent to PHYS 109 at WMU 3-5 hrs.
   - Medical Terminology 1-3 hrs.
   - Introductory Computer Science equivalent to CS 105 or CS 102 at WMU 3 hrs.

The courses required for pre-occupational therapy students will meet department admission criteria, and/or university general education requirements, intellectual skills, and/or elective credit towards graduation by students who are not admitted into the professional program.

8. Documentation of a minimum of 40 hours of service contact with people who have handicapping conditions. Extra credit towards admission will be granted for experience (paid or volunteer) beyond the 40 hour minimum, as well as for time spent in different settings serving a diversity of persons with handicapping conditions.

9. Documentation of a minimum of 3 hours of contact with one or more occupational therapists. Extra credit towards admission will be granted for contact hours, beyond the 3 hour minimum, with occupational therapists working in a variety of treatment settings.

10. Completion of department application form.

Specific criteria for selection are based upon:

1. Grade point average based upon the required prerequisite courses.
2. Knowledge of and interest in occupational therapy as demonstrated by the answers to questions found on the application form.
3. Personal experiences associated with the health field (volunteer or paid).
4. General work experience in non-healthy related situations.
5. Valid documentation for all experiences.
6. Space available in the program.
7. Special considerations such as cultural diversity and WMU student status (24 or more WMU credits). The application deadline for fall semester admission is January 30, and September 1 for winter admission. Applications from diversity candidates are welcomed and encouraged. Contact the College of Health and Human Services advisor for information. Every department shall provide students with systematic procedures to express their views on matters of program curriculum.

Program leading to the Bachelor of Science Degree

Minimum hours required for this curriculum .............................................. 128

1. General Education ................................................................. 37
2. General Electives ................................................................. 3
3. U.S. Culture and Issues .......................................................... 3
4. Behavioral Sciences (sociology, anthropology, psychology) .............. 3
5. Basic course in Biological Science (human related) ......................... 3
6. Normal Human Growth and Development .................................... 3
7. English Composition ............................................................. 3
8. Abnormal Psychology ............................................................ 3
9. Human Anatomy with lab ...................................................... 3-4
10. Human Physiology with lab .................................................... 3-4
11. General chemistry with a lab equivalent to CHEM 103 at WMU .......... 3-4
12. General/electrical Physics with a lab equivalent to PHYS 109 at WMU .... 3-5
13. Medical Terminology ............................................................ 1-3
14. Introductory Computer Science equivalent to CS 105 or BIS 102 at WMU ............................................................................ 3
15. Satisfactory completion of all Intellectual Skills Requirements

Professional Curriculum ................................................................. 51
OT 202 Orientation to Occupational Therapy ....................................... 2
OT 335 Professional Language and Interaction ................................... 3
OT 312 Adapted Activities .................................................................. 4
OT 321 Integrated Medical Sciences .................................................. 6
OT 335 Assessment Principles and Instruments ................................... 3
OT 344 Disabling Conditions ........................................................... 4
OT 351 Introduction to Theory and Treatment Process I ....................... 3
OT 352 Introduction to Theory and Treatment Process II ....................... 2
OT 355 Life Skills and Personal/Environmental Adaptations ................. 4
OT 443 Occupational Therapy Practicum .......................................... 3
OT 451 Applied Theory and Treatment Process ................................... 2
OT 453 Occupational Therapy Practicum II ........................................ 2
OT 460 Research Methodology ........................................................ 3
OT 480 Administration-Supervision-Consultation ................................. 3
OT 490 OT Fieldwork II .................................................................. 3
OT 491 OT Fieldwork I .................................................................. 3

SEQUENCING OF COURSES

Courses in the professional program are completed in a sequential pattern toward developing complex clinical problem solving skills. The courses are not designed to stand alone, but to build upon the knowledge base from previous semesters. The prerequisite courses build a solid knowledge base in the biological and behavioral sciences. The first semester in the professional program centers on human function, pathology, dysfunction and basic problem solving. Students also learn the history of the profession and current practice roles of therapists. The second semester centers on developing skill in activity analysis, the role of activity in occupational therapy treatment, formal assessments used by therapists, introducing treatment theory and techniques, and constructing appropriate treatment plans.

The third semester centers on additional treatment techniques used in therapy, administration of clinical programs, and a clinical treatment experience with clients in the on-campus occupational therapy clinic. The fourth semester of the professional program centers on a clinical treatment experience with clients in clinical programs in the Kalamazoo area and developing an appreciation for the role of research in validating occupational therapy treatment and theory.

The fifth semester centers entirely on the completion of six months, full-time, fieldwork experience as a student therapist in two clinical practice sites (one being a medical model site and one being a community model site). The University utilizes fieldwork sites primarily in Michigan and the Midwest states with some sites throughout the United States. Students are required to complete level II fieldwork within 24 months following the completion of academic preparation.

PROFESSIONAL PROGRAM COURSE TRACKS

The Occupational Therapy Department has in operation a course tracking system designed to assure each student of a seat in appropriate professional OT courses. Any variation from this plan must be approved by the department.

First Semester
OT 202, OT 303, OT 321, OT 344
Second Semester
OT 312, OT 335, OT 351, OT 355
Third Semester
OT 352, OT 443, OT 451, OT 480
Fourth Semester
OT 453, OT 460

FIELD WORK

Students are required to successfully complete two three-month fieldwork experiences. One is scheduled in a medical model (usually a hospital setting) and the other in a community setting. Students are required to complete level II fieldwork within 24 months following the completion of academic preparation. To be eligible for fieldwork, students must have a cumulative grade point average of 2.0 or above, with no grades less than "C" in required or prerequisite courses.

Students who fail fieldwork, or who are asked to withdraw, are subject to review in accordance with the departmental remediation and continuance policy.

MISCELLANEOUS

The following course is offered on a credit/no credit basis only. OT 236. Materials fees are required for some courses.

BACCALEAUREATE WRITING REQUIREMENT

Students who have chosen the Occupational Therapy major will satisfy the Baccalaureate Writing Requirement by successfully completing the following courses:

OT 333 Professional Language and Interaction ................................... 3
OT 312 Adapted Activities .................................................................. 4
OT 355 Life Skills and Personal/Environmental Adaptations ................. 4
OT 443 Practicum I .................................................................. 3

The Combined Bachelor of Science and Master of Science Program (BS/MS)

The Department will be submitting a proposal to inactivate this curriculum effective fall of 1998. This combined BS/MS program is designed to facilitate movement of a limited number of exceptional undergraduate students into the graduate program. Outstanding undergraduates, who were admitted to the undergraduate professional program through the established admission process, are eligible to apply. This program is designed to prepare the student to treat clients with various disabilities, and to be eligible for certification by the NBCOT as an occupational therapist after successfully completing both the Bachelor of Science and Master of Science Degrees.
Under University regulation, both degrees are awarded simultaneously. This program can be completed in twenty-four to twenty-eight months, depending on the admission date and includes at least one Spring and Summer session. This program is accredited by the Accreditation Council for Occupational Therapy Education. Graduates of the program will be eligible to sit for the national certification examination for the occupational therapist administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of this exam, the individual will be an Occupational Therapist, Registered (OTR). Most states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination.

The Professional Curriculum

The professional curriculum uses a holistic and integrated approach in developing those characteristics identified for the graduated student. Key to the educational philosophy of the department is the development of content and learning experiences related to professionalism, personal environment, and the occupational therapy process. The implementation of this philosophy into course design results in the inclusion of most learning objectives into several courses in a simple to complex pattern. This design maximizes the development of clinical reasoning skills.

Admission Requirements

Students are encouraged to make a declaration of intent before formal application. Formal application is due during the second semester in the undergraduate professional curriculum. Students will be admitted in the first semester of their senior year as space is available.

To be eligible for regular admission to this program, each applicant must present evidence of satisfactory preparation:

1. Completion of one year in the undergraduate professional curriculum
2. A grade point average of 3.0 or better
3. Scores on the Graduate Record Examination General (AP) Test
4. Positive faculty recommendation
5. Completion of the Graduate College Application

Because admission is competitive, the academic criteria listed above should be considered as minimum standards. Selection is based upon an equal weighting combination of cumulative grade point average and Graduate Record Examination scores and available space in the graduate program.

Program Requirements

Completion of 122 semester hours of undergraduate courses including the following 45 semester hours of professional occupational therapy education which includes six months of full-time fieldwork.

OT 202 Orientation to Occupational Therapy 2
OT 303 Professional Language and Communication 3
OT 312 Adapted Activities 4
OT 321 Integrated Medical Sciences 6
OT 335 Assessment Principles and Instruments 3
OT 344 Disabling Conditions 4
OT 351 Introduction to Theory and Treatment Process I 3

OT 352 Introduction to Theory and Treatment Process II 2
OT 355 Life Skills and Personal/Environmental Adaptations 4
OT 443 Occupational Therapy Practicum I 3
OT 451 Applied Theory and Practice 2
OT 453 Occupational Therapy Practicum II 3
OT 490 Field Work Level II 3
OT 491 Field Work Level II 3
OT 586 Graduate Seminar 3
Cognates 6
Electives 3
OT 700 Thesis OR
OT 710 Independent Research 6

This thirty-hour graduate component is designed to enhance growth in professional leadership potential by developing skills in administration, program development, theories of practice, professional issue resolution and research.

Please read the WMU Graduate College Bulletin for information on other requirements for completion of a masters degree.

SEQUENCE OF COURSES

Courses in the professional program are completed in a sequential pattern toward developing complex clinical problem solving skills. The courses are not designed to stand alone, but to build upon the knowledge base from previous semesters.

The prerequisite courses build a solid knowledge base in the biological and behavioral sciences. The first semester centers on a review of the history of the profession and current practice roles of therapists. The second semester centers on developing skills in activity analysis, the role of therapy, and techniques used, and constructing appropriate treatment plans. The third semester centers on additional treatment techniques used in therapy, administration of clinical programs, and a clinical treatment experience with clients in the on-campus occupational therapy clinic. The fourth semester of the professional program centers on a clinical treatment experience with clients in clinical programs in the Kalamazoo area. In addition, the student will enroll in those courses necessary to complete University requirements for the baccalaureate degree. For students who may have met these requirements, a modified schedule may be arranged including OT 610, the graduate course in Professional Issues.

The BS/MS student next enrolls in the Summer Session and takes the graduate research course to develop research and writing skills as applied to occupational therapy. In addition, the student would add an elective or cognate course. The following fall and winter semesters are devoted fully to the graduate component designed to enhance growth in professional leadership. The spring session could be used to complete thesis or project requirements if necessary. The next enrollment period, summer session, the student enrolls in OT 490 and 491 for the required six months of full-time fieldwork experience as a student therapist in two clinical practice sites (one being a medical model site and one being a community model site). Western Michigan University utilizes fieldwork sites primarily in Michigan and the Midwest states with some sites throughout the United States. Students are required to complete Level II fieldwork within 24 months following the completion of academic preparation.

A summary of the course sequence for the BS/MS student may be obtained from the departmental advisor.

An overall grade point average of at least 3.0 (A=4.0) is required in the graduate program. No undergraduate credit is computed into the graduate grade point average. Honor point deficiencies acquired in credits earned at Western Michigan University cannot be made up by credits earned at another university.

REMEDIAL AND CONTINUANCE POLICY

1. Students who fail to attain a grade of “C” in a graduate course will be given an opportunity to take the course again. Students may repeat only one required prerequisite or departmental course, and that course only once to attain a grade of “C” or better.

2. Students who fail to attain a grade of “C” or better in a professional course will be placed on departmental probation following the grade lower than “C”.

3. Students who do not successfully complete departmental probation will not be permitted to continue in the program.

4. The department may ask a student to continue in the curriculum if at any time it is deemed by a review committee that the student will not be able to perform at a professional level.

FIELDWORK REMEDIATION AND CONTINUANCE POLICY

1. Successful completion of OT 443 is a prerequisite for OT 453.

2. Students who receive a failing grade in fieldwork level I (OT 443, OT 453) or level II (OT 490, OT 491) are subject to the academic policy for remediation and continuance, and will be required to complete the experience in a similar setting.

3. Successful completion of OT 453 and all prerequisite professional and coursework is required for OT 490.

4. Successful completion of all undergraduate coursework for graduation is required for OT 491.

5. Students who fail fieldwork, or who are asked to withdraw, are subject to review in accordance with the departmental remediation and continuance policy.

6. To ensure continuity of application of academic concepts, all fieldwork shall be completed within 24 months following completion of academic preparation.
Occupational Therapy Courses (OT)

OT 202 Orientation to Occupational Therapy 2 hrs.
Orientation to the profession of occupational therapy. Will include the history of the profession, current professional roles, issues and trends in the field.

OT 225 Growth, Development, and Aging 3 hrs. Fall, Winter
A study of physical, mental, emotional, and social patterns of growth, development, and aging. Aspects to be given special emphasis for the occupational therapy student will be motor development, physiology of aging, growth patterns, and functional development in any of the above aspects. Prerequisite: Pre-OT or nursing.

OT 303 Professional Language and Interaction 3 hrs.
A basic course which includes medical terminology, techniques of information gathering, and professional interpersonal communications. Prerequisite: OT Major.

OT 312 Adapted Activities 4 hrs.
Includes basic tool use, instruction in core craft and group activities including leather, ceramics, copper tooling, recreation, games and music. Emphasis placed on activity analysis and performance processes. Class demonstration and the application of selected activities to community groups is required. Prerequisite: OT Major.

OT 321 Integrated Medical Sciences 6 hrs.
An integrated study of human systems as they relate to normal and abnormal functional performance. Emphasis will be placed on the musculo-skeletal, neurological, and neuro-muscular systems. Prerequisite: Anatomy, Physiology, and OT major.

OT 335 Assessment Principles and Instruments 3 hrs.
This course will cover core components of assessment including process and procedures and testing situations. An integrated approach to psychological and physiological assessments throughout the lifespan is included. Students will learn the evaluative process, how to critique instruments and the research methodology used to develop assessments. Selected assessments are covered including their administration and interpretation. Prerequisite: OT 321.

OT 336 Independent Practicum 2 hrs.
Participation in a health service or agency to provide experience with hospital procedures and an orientation to patient groups. A daily log is required. Student must submit a proposal for the course for departmental approval prior to registration. Prerequisite: OT Major.

OT 344 Disable Conditions 4 hours
This course will introduce pathogenic processes and their impact on the total individual. Prerequisite: OT 321 or concurrent; PSY 250.

OT 351 Introduction to Theory and Treatment Process I 3 hrs.
This course is designed to introduce the student to the development of a theory and demonstrate the relationships of theory to current professional practice. Students will learn and apply occupational therapy theory, assessment, and techniques to treatment programs for clients with physical dysfunction accompanied by psychosocial problems. Emphasis is on an integrative approach and holistic intervention. Prerequisite: OT 344, OT 335, or concurrent.

OT 352 Introduction to Theory and Treatment Process II 2 hrs.
Companion course to Introduction to Theory and Treatment Process I. Application of occupational therapy theory, assessment, and treatment programs for clients with psychosocial problems accompanied by physical dysfunction. Emphasis is on the integrative and holistic approach to client intervention. Prerequisite: OT 351 or concurrent.

OT 355 Life Skills and Personal/Environmental Adaptations 4 hrs.
Examination of the role of occupational therapists regarding life skills. Students will learn to design or adapt the physical environment to assist self-care, work, and play/leisure performance by using orthotics, prosthetics, and assistive/adaptive devices. Prerequisite: OT 312, OT 335, OT 351, or concurrent.

OT 436 Independent Study in Occupational Therapy 2–4 hrs.
Designed to allow outstanding students to work independently under faculty supervision. Consent of department chair.

OT 443 Occupational Therapy Practicum I 3 hrs.
This course is designed to provide clinical experience in client assessment, the development of treatment plans, the implementation of treatment, and the evaluation of the client's progress related to the treatment plan. Emphasis is directly related to the content in OT 351 and OT 352. Prerequisite: OT 335, OT 351, OT 355, OT 352 or concurrent.

OT 451 Applied Theory and Treatment Process 2 hrs.
This course is designed to provide the student with occupational therapy theory and principles related to community practice. The content will include group dynamics, social and work adjustment, and pre-vocational assessment. Prerequisite: OT 335.

OT 453 Occupational Therapy Practicum II 3 hrs.
This course is designed to provide clinical experience in community agencies in order to develop skill in the utilization of assessments, the development of treatment plans, the implementation of treatment plans, and the evaluation of the patient's progress related to the treatment plan. Emphasis is directly related to the content of OT 451. Prerequisite: OT 443, OT 451.

OT 460 Research Methodology 3 hrs.
A course designed to utilize methodologies of research and apply them to occupational therapy practice. Students will critically analyze research literature and will write a research proposal. Prerequisite: Senior status, and OT 303.

OT 470 Functioning of the Older Adult 3 hrs. Fall, Winter
The objective of this course is to provide understanding of the basic psychological and physiological changes characteristic of human aging and pathological conditions which have consequences for function and behavior.

OT 480 Administration-Supervision-Consultation 3 hrs.
This course will cover the basic principles of administration in Occupational Therapy including planning, organizing, staffing, directing, and controlling. Administrative skills including leadership, decision-making and professional writing; health care delivery systems, and the consulting process and its relationship to the delivery of OT services will be covered. Prerequisite: Senior status and OT Major.

OT 490 Field Work Level II 3 hrs.
A three-month affiliation in hospitals or community agencies providing the student experience in designated areas of occupational therapy. Departmental consent only. Prerequisite: Completion of all basic professional course work.

OT 491 Field Work Level II 3 hrs.
A three-month affiliation in hospitals or community agencies providing the student experience in designated areas of occupational therapy. Prerequisite: Graduate Students—completion of all basic professional course work and prerequisite courses; undergraduate students—completion of all academic work.

OT 492 Fieldwork Level II 2–3 hrs.
An optional three-month affiliation in hospitals or agencies providing the student experience in designated area of occupational therapy. Prerequisites: OT 490, OT 491.

OT 530 Sensory Integration and The Child 3 hrs.
Study of theoretical principles and their application to evaluation and treatment of the child with sensory integration dysfunction. Students will observe and participate in screening and evaluation of children, and they will design treatment plans for selected clients. Prerequisites: OT 335, OT 351, OT 443 or concurrent; or OT, RPT, or consent.

OT 597 Studies in Occupational Therapy 2–4 hrs.
Examines selected topics within the field of Occupational Therapy. Topics considered will vary from semester to semester. May be repeated for credit. Prerequisites: Advanced OT major or departmental permission.
PHYSICIAN ASSISTANT

Janet I. Pisaneschi, Interim Chair
William H. Fenn
Stephen Bartholomew
James Van Rhee

Special note: The Department has admitted its last undergraduate class of students. Beginning in 1998, the program will become a master's degree program.

The Physician Assistant Program in the Physician Assistant Department is a professional program which educates assistants to primary care physicians (PA). PAs perform many of the tasks required in a medical practice and free the physician to spend more time in diagnosis and complex matters of medicine. Through the appropriate use of a physician/physician assistant team, patients receive more individualized quality care.

Graduates of the program are awarded the Bachelor of Science in Medical degree and are eligible to sit for the National Certifying Examination for Physician Assistants administered by the National Commission on Certification of Physician Assistants (NCCPA). Western's Physician Assistant Program has been fully accredited by the Committee on Allied Health Education and Accreditation (CAHEA) since its inception. A major goal of the Program is to increase the availability of health care services to underserved areas.

As a member of the health care team, the physician assistant works with the supervision and direction of a licensed physician. Together they form a team to better meet the time constraints and needs of the patients. To accomplish this, students are provided a wide variety of opportunities and learn to (1) obtain comprehensive health histories, (2) perform complete physical examinations; (3) record data, (4) perform diagnostic tests; (5) interpret data received from diagnostic laboratory tests, (6) prepare diagnosis and treatment plans; (7) perform certain treatment procedures and (8) make appropriate clinical responses to commonly encountered emergency care situations.

ADMISSION REQUIREMENTS

The PA Program has the following requirements for application to the professional curriculum. No applicant missing any of these requirements will be considered for admission.

1. A minimum of 1,000 hours (six months) of health care experience (with direct patient contact). Many types of experiences are acceptable. The program staff will answer questions about applicability of health care experiences.

2. A minimum of sixty (60) semester hours of college credits, including CHEM 101 and CHEM 120 and either CHEM 365 or CHEM 360-361 or equivalents.

3. University requirements for admission.

RECOMMENDED

1. Life science credits in the range of 15-20 semester hours, including the Chemistry requirements.

2. Humanities, social and behavioral sciences and the arts are positive selection factors.

APPLICATION PROCEDURE

Admission to the professional curriculum of the PA Program requires a separate application. Application forms may be obtained from the PA Office in A311 Ellsworth Hall.

SELECTION PROCESS

The selection committee has established the following three-step process for the selection to begin in the junior year. The three-step process consists of:

1. Review of application data: each application is reviewed by at least three members of the selection committee; candidates are selected for interviews.

2. Interviews: selected candidates are scheduled for separate required interviews. No applicant is admitted without an interview.

3. Final selections: the selection committee reviews all the data including the results of the interview and recommends candidates for admission.

Students are admitted to the program at the beginning of the junior (Pre-Clinical) academic year each fall semester. Because of the keen competition for class positions, priority is given to those candidates who present the best overall profile. Selection is based on all aspects of the academic record, assessment of previous health care experience, evidence of good character, and the possession of those attitudes and aptitudes required for the effective health care professional.

THE CURRICULUM

This upper-division curriculum is divided into two parts. The first year is devoted to the basic and applied medical sciences upon which the theoretical concepts of disease can be built. Subjects covered in this portion include anatomy, biochemistry, pharmacology, microbiology, and physiology. During this time, the students begin instruction in the clinical areas such as interviewing, history-taking and physical diagnosis, as well as specific areas of medicine.

During the senior or clinical year, each senior PA student enrols in seven required clinical rotations including: community and mental health, family medicine, emergency medicine, surgery, obstetrics and gynecology, pediatrics, and an elective clerkship.

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Physician Assistant Program will satisfy the Baccalaureate Writing Requirement by successfully completing the following courses:

MDSC 304 Patient Evaluation I 3
MDSC 314 Patient Evaluation II 3
MDSC 324 Patient Evaluation III 1
MDSC 334 Patient Evaluation IV 1

CURRICULUM REQUIREMENTS

1. All courses listed (103 hrs.) are required.
2. Students are required to obtain at least a grade of "C" in each course or they must undergo a prescribed academic review process to determine their continued participation in the program.
3. Students are required to successfully pass a comprehensive examination in medical terminology at the start of the fall semester of their junior year.
4. Students must meet Intellectual Skills and Computer Literacy requirements.

JUNIOR (PRE-CLINICAL) YEAR

FALL SEMESTER

BIOS 401 Pathogenic Microbiology for P.A.'s 2
CHEM 350 Chemistry for P.A.'s 3
MDSC 301 Medical Terminology 1
MDSC 304 Patient Evaluation I 3
MDSC 311 Gross Human Anatomy 1
BIOS 319 Clinical Physiology for P.A.'s 5

WINTER SEMESTER

MDSC 303 PA History and Legislation Seminar 1
MDSC 314 Patient Evaluation II 3
DSC 317 Internal Medicine I 6
MDSC 306 Pathophysiology 3
DSC 410 Pharmacology I for P.A.'s 4
MDSC 426 Community and Mental Health 4
MDSC 436 Community and Mental Health Seminar 2

SUMMER SESSION

MDSC 425 Surgery Clerkship 4
MDSC 432 Pediatrics Seminar 2
MDSC 423 Obstetrics and Gynecology Clerkship 4
MDSC 433 Obstetrics and Gynecology Seminar 2
MDSC 434 Internal Medicine Seminar 2
MDSC 424 Internal Medicine Clerkship 4
MDSC 435 Surgery Seminar 2
MDSC 426 Community and Mental Health Seminar 4
MDSC 436 Community and Mental Health Seminar 2
MDSC 428 Elective Clerkship 4
MDSC 438 Elective Seminar 2

SUMMER SESSION

MDSC 427 Family Medicine Preceptorship 6
MDSC 437 Family Medicine Seminar 2

Physician Assistant Program Courses (MDSC)

MDSC 301 Medical Terminology 1 hr.
This course presents related topics to general surgery including acute, chronic, and emergent problems. Topics will include pre/post operative care techniques, nutrition, fluid, and electrolyte balance as well as presentations on selected surgical conditions and their management. Prerequisites: MDSC 317 and PA curriculum.

MDSC 303 PA History and Legislation Seminar 1 hr.
Principle events in the history of the Physician Assistant profession are described. Legislative history and current developments are discussed. Additional topics include importance of professional associations, hospital privileges, PA/physician agreements, and the process for interviewing, resume writing, and other preparation for employment.

MDSC 304 Patient Evaluation I 3 hrs.
This is the first in a series of four courses presented sequentially through the pre-clinical year. It provides instruction in the systematic evaluation of patient problems through history taking and physical examination. Lectures, demonstrations, student examination of patients, and critique of those examinations are included among the instructional techniques. Emphasis is placed upon
This one-page document provides a detailed overview of the MDSC (Medical Student Curriculum) course offerings, focusing on the techniques of interviewing and physical examination, data collection, accurate problem lists, and the relationship between pathophysiologic changes and their corrections through proper therapy, as well as patient counseling with an emphasis upon interviewing techniques. The document also highlights courses included in the MDSC 306 Pathophysiology, and traditional and problem-oriented medical records are studied.

MDSC 306 Pathophysiology

This course focuses on the altered physiology of common disease states. It serves as an introductory foundation to more specific medical courses within the PA curriculum. An introduction to patient counseling with emphasis upon interviewing techniques, current theories of personality and psychopathology, and includes such specialized techniques as methods of crisis intervention, and counseling patients with substance abuse, coping, and sexual dysfunction problems. Additionally, psychotherapeutics counseling is discussed.

MDSC 311 Gross Human Anatomy

This 5-hour course is designed to help the Physician Assistant student achieve a sound understanding of the human body through lectures, discussions, and review of laboratory cadaver presentations. The course introduces topics in community and mental health that range from descriptions of community resources to diagnostic categories and terms in the field of psychiatry. Emphasis will be placed on acquainting students with a wide range of clinical presentations, referral options, and therapeutic guidelines related to the role of the Physician Assistant in the health care system. Prequisites: MDSC 317 and PA curriculum.

MDSC 314 Patient Evaluation II

This 3-hour course provides an introduction to the skin, techniques of history-taking and examination, recognition of allergic symptoms, importance of accurate etiologic diagnosis, and the relationship between pathophysiologic changes and their corrections through proper therapy. The course introduces the student to women's health care through inquiry into the fields of obstetrics and gynecology, knowledge of normal processes and abnormal conditions, and increased awareness of the unique needs of women seeking health care. Prequisite: MDSC 317 and PA curriculum.

MDSC 413 Dermatology

This 1-hour course covers basic theoretical and proven concepts of allergy and immunology. Emphasis is placed on clinical recognition of allergic symptoms, importance of accurate etiologic diagnosis, and the relationship between pathophysiologic changes and their corrections through proper therapy.

MDSC 422 Pediatric Rotation

This 4-hour course emphasizes the general principles of pharmacology as they apply to the primary-care Physician Assistant. This is a continuation of Pharmacology I. Emphasis is placed on clinical use of drugs. The course is comprehensive but pragmatic. Factors affecting drug action, such as rates of absorption, metabolism, and excretion are discussed. Mechanism of action is covered. The principle thrust is to acquaint the student with drugs commonly used in therapy, their side effects, and toxic manifestations.

MDSC 423 Obstetrics and Gynecology

This 4-hour course provides an introduction to the obstetric and gynecologic examination of the Ob/Gyn patient. While on practica on basic skills needed in the practice of emergency medicine such as suturing, casting, and CPR. Emphasis is placed on adequate patient care. The student then follows through pre-operative preparations, assists in surgery, and helps in post-operative care. The course introduces the student to the management of routine surgical cases, but also in the treatment of various complications. This course introduces the student to the management of routine surgical cases, but also in the treatment of various complications.

MDSC 424 Internal Medicine Rotation

This 4-hour course is designed to help the Physician Assistant student achieve a sound understanding of the human body through lectures, discussions, and review of laboratory cadaver presentations. The course introduces topics in community and mental health that range from descriptions of community resources to diagnostic categories and terms in the field of psychiatry. Emphasis will be placed on acquainting students with a wide range of clinical presentations, referral options, and therapeutic guidelines related to the role of the Physician Assistant in the health care system. Prequisites: MDSC 317 and PA curriculum.

MDSC 425 General Surgery Rotation

This 4-hour course is designed to help the Physician Assistant student achieve a sound understanding of the human body through lectures, discussions, and review of laboratory cadaver presentations. The course introduces topics in community and mental health that range from descriptions of community resources to diagnostic categories and terms in the field of psychiatry. Emphasis will be placed on acquainting students with a wide range of clinical presentations, referral options, and therapeutic guidelines related to the role of the Physician Assistant in the health care system. Prequisites: MDSC 317 and PA curriculum.

MDSC 426 Community and Mental Health Rotation

This 4-hour course is designed to help the Physician Assistant student achieve a sound understanding of the human body through lectures, discussions, and review of laboratory cadaver presentations. The course introduces topics in community and mental health that range from descriptions of community resources to diagnostic categories and terms in the field of psychiatry. Emphasis will be placed on acquainting students with a wide range of clinical presentations, referral options, and therapeutic guidelines related to the role of the Physician Assistant in the health care system. Prequisites: MDSC 317 and PA curriculum.

MDSC 427 Family Medicine Preceptorship

This 6-hour course is intended to cover the many sub-specialties of medicine, including emergency medicine, dermatology, otorhinolaryngology, ophthalmology, urology, orthopedics, cardiology, and oncology. The student may elect to take any combination of courses in these fields.
MDSC 432 Pediatrics Seminar 2 hrs.
During the six-week clinical rotation in pediatrics, the student reviews selected readings which include major areas of pediatrics: newborn care, disorders of the newborn, infectious diseases of the newborn, musculoskeletal system, neurologic system, infectious diseases, poisonings, child neglect, psychological aspects of childhood, digestive system disorders. Within these topics, emphasis is placed on etiology, signs and symptoms, clinical presentation, diagnosis and management, common pediatric problems. Emphasis is also placed on preventive medicine, care and assessment of well children, immunizations, patient and parent education.

MDSC 433 Obstetrics and Gynecology Seminar 2 hrs.
This is a self-directed seminar in obstetrics and gynecology which accompanies the obstetrics and gynecology rotation. The student must complete reading assignments in obstetrics and gynecology. Here again, the emphasis is on common problems in obstetrics and gynecology with which a physician assistant would be involved including preventive medicine and patient education.

MDSC 434 Internal Medicine Seminar 2 hrs.
This is a self-directed seminar which accompanies the internal medicine clinical rotation. The reading list centers on the etiology, clinical presentation, diagnosis and management of common problems in adult medicine.

MDSC 435 Surgery Seminar 2 hrs.
This is a self-directed seminar in surgery which accompanies the clinical rotation in surgery, and deals with the etiology, clinical presentation, diagnosis, and management of common problems of surgery.

MDSC 436 Community and Mental Health Seminar 2 hrs.
This is a directed, self-study seminar which accompanies the community and mental health clinical experience and which centers on common problems frequently encountered by patients and emphasizes their recognition and proper treatment. It also emphasizes referral mechanisms and utilization of community resources. The problems include such things as marriage and family counseling, alcohol and drug abuse, anxiety problems, learning disabilities, personality disorders in addition to depression and schizophrenia.

MDSC 437 Family Medicine Seminar 2 hrs.
This is a self-directed seminar in family medicine which accompanies the clinical experience in family medicine. The student is provided with a required reading list which focuses on problems commonly found in primary care in family medicine. These include knowledge of the family structure and function, family dynamics, preventive medicine, periodic health screening, utilization of community resources and common medical problems in dermatology, orthopedics, ophthalmology, internal medicine, nutrition, allergy, immunology, urology, neoplastic disorders, emergency problems, surgery, pediatrics, obstetrics, and gynecology.

MDSC 438 Elective Seminar: Variable Title 2 hrs.
This independent study seminar takes place during the elective rotation. Through readings and discussion with the precepting physician, emphasis is placed on academic knowledge of the elected area of medicine. Prerequisite: PA curriculum.

SOCIAL WORK

Phil Popple, Director
Donald Copey
Linwood Cousins
James Henry
Thomas Holmes
Peter Judd
Tracey Mabrey
Frederick MacDonald
Gary Mathews
Karen Neuman
John Nielsen
Edward Pawlik
Linda Reeser
Kenneth E. Reid
Susan Weinger
Robert Wertkin
Danielle Wozniak

The School of Social Work offers both undergraduate and graduate professional programs leading to a B.S.W. and M.S.W. respectively. Both programs are accredited by the Council on Social Work Education. The undergraduate professional program is designed to provide students for beginning level social work practice, to provide preparation for graduate training in social work, and to offer social welfare content as part of the student's Liberal Arts Education. The graduate/professional program is designed to educate students for interpersonal practice and policy, planning, and administration positions in the field of social welfare.

Students enrolled in the undergraduate social work curriculum are required to complete a major consisting of 32 hours and complete a total of 122 hours to graduate. A minor consisting of a minimum of 15 hours is offered for students in other curricula. In addition, the School of Social Work participate in a University gerontology minor. Social work students should consult their curriculum advisor for program planning for the gerontology minor.

Admission

Students who desire to major in social work will be admitted into the pre-social work curriculum at the time of admission to the University. This status, however, does not assure admission to the social work major. The selection of students to be admitted to the social work major occurs after review of all applicants by the admissions and student services committee composed of social work faculty. This a competitive process.

On completion of 45 semester hours (midway through the sophomore year) and SWRK 210 Social Work Services and Professional Roles, students submit an Application for Admission to Undergraduate Social Work Major to the Director of Admissions of the School of Social Work. SWRK 210 should be taken in the first semester of the sophomore year. Deadlines for submitting applications are January 15, May 15, and October 1 of each year.

Applicants are encouraged to apply as early as is possible because there are limited seats available for the major each year. This admission process is competitive.

Social Work Curriculum

Offerings in the social work major cover four substantive components. The first component provides knowledge about social welfare systems and policies. The second deals with psychological and sociological theories concerned with individual, family, group, organization, and social systems. The third component focuses on social work practice content. The fourth component provides an introduction to social research. A guided interdisciplinary minor of 22-23 hours is required to fulfill the program.

Susan Weinger

Social Work Major to the Director of Admissions of the School of Social Work.

Offerings in the social work major cover four substantive components. The first component provides knowledge about social welfare systems and policies. The second deals with psychological and sociological theories concerned with individual, family, group, organization, and social systems. The third component focuses on social work practice content. The fourth component provides an introduction to social research. A guided interdisciplinary minor of 22-23 hours is required to fulfill the program.
requirements. In addition, a student may choose to select a second regular curriculum minor from another department. If so, the student should consult the undergraduate social work advisor for approval. Further questions concerning the Social Work major or minor may be directed to the School of Social Work.

The graduate-professional program focus is on contemporary social problems and problem-solving processes. It provides a two-year or three-year curriculum leading to a master's degree in social work. Further information about this program can be found in the Graduate Bulletin.

Baccalaureate Writing Requirement

Students who have chosen the Social Work major will satisfy the Baccalaureate Writing Requirement by successfully completing ENGL 305 Practical Writing.

Program

**MINIMUM HOURS REQUIRED FOR GRADUATION**  
122 hrs.

**General Education Requirements**  
35 hrs.

**Requirements for the undergraduate Social Work major**  
32 hrs.

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<th>Requirement</th>
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<tbody>
<tr>
<td>SWRK 210 Social Work Services and Professional Roles</td>
<td>3</td>
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<td>SWRK 300 Social Welfare as a Social Institution</td>
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<td>SWRK 350 Social Work Concepts in Individual and Family Behavior</td>
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<td>SWRK 400 Social Work Practice: The Problem Solving Process</td>
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<td>SWRK 401 Social Work Practice: Intervention and Evaluation</td>
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<tr>
<td>SWRK 402 Social Work Practice: Policy Analysis and Organizational Context</td>
<td>3</td>
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<tr>
<td>SWRK 410 Field Experience and Seminar I</td>
<td>4</td>
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<tr>
<td>SWRK 411 Field Experience and Seminar II</td>
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<tr>
<td>SWRK 433 Dynamics of Race and Culture for Social Work Practice</td>
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*Completed field applications are due at least 15 weeks prior to the semester in which field work is to be taken.

Note: Following completion of SWRK 210 students must be accepted into the social work curriculum to complete the major.

**Required Research Component SOC 382 and 383 Methods of Sociological Inquiry**  
(Prerequisites: SOC 182 and SOC 200)  
6 hrs.

**Required Guided Interdisciplinary Minor**  
22–23 hrs.

Includes

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<th>Course</th>
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<tr>
<td>COM 170 Interpersonal Communication</td>
<td>3</td>
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<td>ENGL 305 Practical Writing</td>
<td>4</td>
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<tr>
<td>BIOS 112 Principles of Biology</td>
<td>3</td>
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<tr>
<td>ECON 107 Contemporary Domestic Economic Issues</td>
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Any one of the following:

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<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCI 202 State and Local Government</td>
<td>4</td>
</tr>
<tr>
<td>PSCI 300 Urban Politics</td>
<td>3</td>
</tr>
</tbody>
</table>

Any one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 100 General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 160 Child Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

The student must satisfy the requirements for the B.S.W. degree.

Any student who fails to meet the following criteria will be notified in writing by the School of Social Work undergraduate advisor that he/she will be in jeopardy of being dropped from the social work major.

1. The student must receive a "C" or higher in each required social work course to remain in the major. You may repeat one required social work course to raise your grade. The exceptions to this minimum grade of "C" requirement are the research methods courses (SOC 382-383) where a "D" is acceptable.

2. The student must maintain an overall average of 2.0 in the interdisciplinary minor. Transfer students note that courses transferring into the minor come in with no grade (so your "A" at a two-year college can't be used to balance a lower grade in a course here).

The school may refuse to permit a student to continue in the curriculum if at any time it is determined that the student is exhibiting a pattern of professionally incompetent behavior as determined by the standards of the National Association of Social Work Code of Ethics governing social workers and their professional relationships with those they serve, with their colleagues, with their employing agency, and with the community. Further details on this policy and procedure may be obtained from the School of Social Work undergraduate coordinator.

**Social Work Minor**

15 credit hours

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWRK 210 Social Work Services and Professional Roles</td>
<td>3</td>
</tr>
<tr>
<td>SWRK 300 Social Welfare as a Social Institution</td>
<td>3</td>
</tr>
</tbody>
</table>

Three of the following social work courses: 350, 351, 433, 464, any 500 level social work course (Excluding SWRK 572)

**Social Work Courses (SWRK)**

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

**SWRK 100 An Introduction to Social Services** 3 hrs.

A descriptive course covering knowledge content relating to operation of social service programs. It is a study of the philosophy and value base for these services. Observation visits to field agencies, films, guest lectures and other lab and volunteer experiences may be arranged with the instructor to promote appreciation of knowledge content.

**SWRK 210 Social Work Services and Professional Roles** 3 hrs.

This course introduces students to the social work profession: its code of ethics, value base, and commitment to social justice. The course examines the evolution of social work as a profession, acquaints students with contemporary social work roles and fields of practice, and examines the professional responsibilities in the delivery of social work services to minority and majority groups in the public and private sectors. Prerequisites: Sophomore status or consent of instructor.

**SWRK 300 Social Welfare as a Social Institution** 3 hrs.

This course analyzes social welfare as a response to social problems and human needs. It examines the social, economic, political, and philosophical forces that have led to the historic development and institutionalization of social welfare. It encourages students to develop a critical perspective on social welfare policies and programs and stresses an understanding of the impact of age, race, gender, sexual orientation, and social class upon social policy and service delivery. Prerequisites: SWRK 210 or concurrent enrollment.


This course provides the student with a basic understanding of human behavior, related to human developmental processes, learning theory, and family, social and cultural dynamics. The course examines socialization and its influence on human behavior and identifies significant physical, mental, emotional, social, and cultural factors which affect the development of the personality, biological, and family systems. The social and cultural factors examined include social class, race, gender, age, sexual orientation, etc. Prerequisite: SWRK 210 and junior status.

**SWRK 351 Social Work Concepts in Group, Community and Organizational Behavior** 3 hrs.

This course provides the student with an understanding of human behavior related to small group process, formal organization and community dynamics. Students are introduced to selected systems concepts. The interplay of various forces which affect the development of social groups, communities, and organizations, and the effects of these interdependent systems on the client system are examined. The impact of race, sex, and age is considered in relation to groups, organizations, and communities. Prerequisites: SWRK 210, SWRK 350, and junior status.
SWRK 400 Social Work Practice: The Problem Solving Process 3 hrs.
This is the first of a sequence of three courses in social work practice for social work majors. It focuses on the problem solving process as a conceptual framework for social work. It also examines issues related to professionalism, social work values, and the impact of race, gender, and other differences on practice. The student will learn to identify problems at various levels, including individual, small group, organization, and community. The course presents all phases of the problem solving process, with particular emphasis on problem identification, assessment, and data collection. Role plays, simulations, and other classroom activities provide practice in basic skills necessary for engaging clients, interviewing, and conducting assessments. Prerequisites: SWRK 300, SWRK 350, majors only.

SWRK 401 Social Work Practice: Intervention and Evaluation 3 hrs.
This is the second in a sequence of three social work practice courses. It presents the application of the problem solving process through specific interventions and roles at various system levels (individual, group, organization, and community). These interventions and roles will include, but not be limited to, crisis counseling, short term practice models, and case management. Students will learn to implement and appraise interventions in reported and simulated situations and to evaluate the effectiveness of their intervention skills. Prerequisites: Senior status, SWRK 400, concurrent enrollment in SWRK 410; majors only.

This course combines conceptual analysis and training in practice skills. It focuses on the effects of social policy and organizational context on social work practice. It examines the basic process of policy development and the relationship between policy, ideology, and values. It plays particular attention to the impact of social policy on human service organizations, analyzing the effects of specific policies on workers, clients, and organizational structure and goals. It helps students develop skills for effective functioning in the organizational environment including organizational change and utilization of organizational resources for effective social work practice. Prerequisites: Senior status, SWRK 401, concurrent enrollment in SWRK 410.

SWRK 410 Field Experience and Seminar I 4 hrs.
Two hundred (200) clock hours in the field and fourteen (14) hours in a campus-based seminar. In a social work or allied service agency, students develop a working knowledge of the agency's functions, structure, processes, and its service provider role with the total community. Students apply knowledge and develop skills in problem identification, data collection, problem assessment, and goal formulation with clients in the context of social values. Prerequisites: Senior status, Social Work Major status, consent of Director of Field Education, and concurrent enrollment in SWRK 401. Completed application is due at least 15 weeks prior to the semester field work is to be taken. Credit/No Credit only.

SWRK 411 Field Experience and Seminar II 4 hrs.
This is continuation of SWRK 410. Two hundred (200) clock hours in the field and fourteen (14) hours in a campus-based seminar. Students engage in social work interventions and practice intensive behaviors in solving problems with individuals, groups, organizations and/or a community. Prerequisites: Senior status, Social Work Major status, completion of SWRK 401 and 410, consent of Director of Field Education, and concurrent enrollment in SWRK 402. Credit/No Credit only.

SWRK 420 Ethical Issues in Employee Assistance 3 hrs.
Human service professionals have a responsibility to engage in ethical behavior. They are involved in situations which are increasingly more complex with fluctuating and competing values. The purpose of this course is to help students become more effective in dealing as professional persons with ethical questions in social policy and practice situations. The course focuses on ethical issues and laws impacting employee assistance programs. It is structured to facilitate development of a greater awareness of one's personal values and the values and ethics of the profession. It is presented from a social work perspective and ethical dilemmas are presented at different levels—client, colleague agency, community, and society. Students are introduced to moral and philosophical reasoning and ethical problems and a model for ethical decision-making. Open only to Employee Assistance Academic Program majors.

SWRK 421 Case Management in Industry 3 hrs.
Case Management in Industry is that body of knowledge, skills, and behaviors that provides for the personal well being of workers towards the end that job performance is enhanced and work satisfaction is increased. This course introduces the employee assistance student to (1) generic case management functions, (2) knowledge and skills to carry out these functions, and (3) knowledge about social support networks and community resources. The special role expectations of the case manager at a work site will be explored. Open only to Employee Assistance Academic Program majors.

SWRK 433 Dynamics of Race and Culture for Social Work Practice 3 hrs.
This course focuses upon ethnic/racial groups who are among social welfare consumers and social work clientele. Individual and institutional racism are examined. Racial/cultural characteristics and group strengths, needs, priorities, and experiences in the context of social welfare and social work are also explored. The course reviews implications of ethnic factors for social work practice, social policy, and social work education. Prerequisite: Consent of instructor.

SWRK 464 Problem Solving in Gerontology 3 hrs.
This course provides the student with information about social welfare programs, both institutional and non-institutional, which are available to our aged population. The student is introduced to different approaches to service delivery and to more interventional problem solving techniques utilized by professional social workers in working with minority and majority aged population. Open to social work students and students from related professional disciplines with consent of instructor.

SWRK 512 Social Policy and Service Delivery in Selected Problem Areas 3 hrs.
Intensive study in selected field of service specialization and social problem areas. Attention is focused on learning about the major social policy issues associated with the service or problem area. Specific topics will be announced each semester. Prerequisite: Open only to senior undergraduates and graduate students.

SWRK 562 Community Organization in Urban Areas 3 hrs.
Social welfare planning and social action methods are studied as approaches for preventing and resolving aspects of social problems. Emphasis is placed on the organizing of neighborhood and consumer groups in order to increase social interaction and improve social conditions. Prerequisite: Consent of instructor.

SWRK 564 Special Studies in Social Welfare Practice 1–4 hrs.
Study of selected topics related to the theory and practice of social welfare activities and endeavors. Focus will be on roles of human service workers and methodologies utilized in these roles in a range of social welfare areas. Specific topics will be announced. Prerequisite: Consent of instructor.

SWRK 566 Social Service in the Schools 3 hrs.
The role of the social worker in elementary and secondary schools is explored. The specific contributions of a school social worker as a helping person to the pupils, the school staff and the homes by various interventive means are explored. Prerequisite: Consent of instructor.

SWRK 569 Juvenile Justice 3 hrs.
This course deals with the processing of offenders through the juvenile justice system with concentration on the philosophy and functioning of juvenile courts. Personal and organizational factors that are associated with or that determine offenders' passage through the juvenile court are examined. Prerequisite: Consent of instructor.

SWRK 572 Community Agency Resources 2 hrs.
A study of community agencies and resources for those concerned with family and personal problems. Emphasis is placed upon the availability of these resources and their effective use by business and industry, speech therapists, guidance counselors, teachers, etc. Not recommended for social work majors or minors.

SWRK 597 Teaching Apprenticeship in Selected Social Work Curriculum Areas 1–4 hrs.
The course focuses on the development of educational skills for social workers through faculty-directed participation in teaching activities in a selected social work course. Specific learning objectives and expectations for apprentices are arranged with participating faculty. This course may be taken a second time (1–4 credits; a maximum of 8 total toward degree) by a student who wishes to increase teaching skills through applied practice in another social work area.

SWRK 598 Readings in Social Work 1–4 hrs.
Offers advanced students with good scholastic records an independent program of study, arranged in consultation with the instructor. One to four hours credit per semester.
Communication is the most complex aspect of human behavior. Impairments in the process of communication—speech, language, and hearing—leave unmet problems in their wake. Speech pathology and audiology is the area of professional specialization that has developed out of concern for persons with disorders of communication.

The basic educational mission of the Department of Speech Pathology and Audiology is to prepare professional personnel who will be maximally effective in the delivery of diagnostic, rehabilitative, rehabilitative, and preventive services to individuals handicapped by speech, language, and hearing impairments.

The undergraduate program is preprofessional in nature and is designed to prepare students for graduate professional education in speech and language pathology or audiology. Because the bachelor's degree does not qualify the recipient for employment, students must plan for enrollment in a master's degree program in order to complete their professional preparation. Admission to a graduate program typically requires a grade point average of 'B' or higher in the undergraduate major as well as in undergraduate coursework (overall GPA). Completion of the undergraduate major in speech pathology and audiology does not guarantee a student's admission into WMU's or any other school's graduate program. Information about this department's master's degree program can be found in the WMU Graduate Catalog.

Admission

Students who desire to major in speech pathology and audiology will be admitted into the Pre-Speech Pathology and Audiology curriculum at the time of admission to the University. This status, however, does not assure admission to the departmental major. The selection of students to be admitted to a speech pathology and audiology major occurs after review of all applicants by a departmental faculty committee. Assistance in selecting an individually tailored sequence from consideration in a minor sequence are undergraduate courses specifically excluded to departmental majors. Minors slips are required.

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

SPPA 200 Communication Disorders and Sciences

3 hrs.

This introductory course provides a broad overview of the acoustical, anatomical, biological, emotional, physiological, and psychosocial bases of human communication and the ways in which it may be disordered. The impact of scientific investigation, technological and economic factors, and the challenges of medical and technological advancements, and the quantitative tools used in assessment and rehabilitation will be stressed.

Speech Pathology and Audiology Curriculum

A major in speech pathology and audiology consists of a minimum of 35 to 37 hours in speech pathology and audiology plus additional coursework specified by the department. These additional requirements include coursework in general education, supporting courses outside the department, and an academic minor. Each student is responsible for obtaining information on degree requirements and for taking the steps necessary to meet those requirements.

Students interested in a major in speech pathology and audiology should contact the department office in the Speech and Hearing Center on the East Campus for an appointment with an undergraduate advisor. Because the sequencing of courses included in this major is critically important, students must seek academic advising from the department on an early and regular basis. Students who fail to do so may be dropped from enrollment in departmental courses.

Baccalaureate Writing Requirement

Students who have chosen the Speech Pathology and Audiology major will satisfy the Baccalaureate Writing Requirement by successfully completing SPPA 459 Special Studies in Communication Disorders.

Speech and Hearing Processes Minor

The departmental minor in speech and hearing processes requires a minimum of fifteen hours of credit in speech pathology and audiology coursework. In consultation with a departmental advisor, students may design a minor option in areas such as speech-language-hearing science, audiology, speech-language-hearing disorders, or other individually tailored sequences complementary to the student's educational and vocational objectives. The only undergraduate courses specifically excluded from consideration in a minor sequence are SPPA 400 and SPPA 459. Clinical practicum registrations available only to departmental majors. Minor slips are required.

Speech Pathology and Audiology Courses (SPPA)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

SPPA 200 Communication Disorders and Sciences

3 hrs.

This introductory course provides a broad overview of the acoustical, anatomical, biological, emotional, physiological, and psychosocial bases of human communication and the ways in which it may be disordered. The impact of scientific investigation, technological and economic factors, and the challenges of medical and technological advancements, and the quantitative tools used in assessment and rehabilitation will be stressed.
SPPA 203 Normal Language Acquisition
3 hrs.
A study of normal language acquisition as a basis for investigating disordered language. The course involves a survey of the stages of language acquisition and a consideration of mechanisms of language acquisition. Prerequisite: Consent of instructor or LANG 105 and PSY 100. Majors must take concurrently with SPPA 204 and SPPA 207.

SPPA 204 Phonetics
3 hrs.
A study of human speech sounds as a basis for understanding speech production and speech perception. Means of symbolizing speech sounds are provided to prepare the student for accurate transcription of speech behavior. Prerequisite: Consent of instructor or LANG 105 and BIOS 112. Majors must take concurrently with SPPA 203 and SPPA 207.

SPPA 205 Speech Anatomy and Physiology
3 hrs.
A study of respiration and phonation, with emphasis on their function in speech production and speech perception. The course includes a detailed study of the structures involved, including neurology. Prerequisite: Consent of instructor or SPPA 203; SPPA 204; PHYS 119, MATH 110 or MATH 116. Majors must take concurrently with SPPA 206.

SPPA 206 Hearing Science
3 hrs.
A study of the structure and function of the hearing system, as related to communicative processes. The course includes a consideration of theories of speech perception. Prerequisite: SPPA 203; SPPA 204; PHYS 119; MATH 110 or MATH 116; or by consent of instructor. Majors must take concurrently with SPPA 205.

SPPA 207 Clinical Laboratory
2 hrs.
This course introduces the student to various academic, clinical, and personal aspects of the professions of speech and language pathology and audiology, and it requires participation in structured observation of clinical activities. Must be concurrently taken with SPPA 203 and 204.

SPPA 260 Linguistic Development of the Child
2 hrs.
This course focuses on the communication development of the child, birth through 12 years. The acquisition of language and other communication modes are viewed from a psycholinguistic orientation. Application to the teaching of the language arts is emphasized. Must be taken concurrently with ILAM/ED 260. Required for the Integrated Language Arts Minor.

SPPA 351 Phonemic Disorders
2 hrs.
A detailed study of the nature of phonemic disorders; orientation to clinical management. Prerequisite: SPPA 204.

SPPA 352 Fluency Disorders
2 hrs.
A detailed study of the nature of fluency disorders; orientation to clinical management. Prerequisite: SPPA 204 and SPPA 403.

SPPA 354 Language Disorders in Children
3 hrs.
A detailed study of the nature of communication problems associated with congenital or acquired impairment of language function in children; orientation to clinical management. Prerequisite: SPPA 203.

SPPA 358 Disorders of Hearing: Identification and Measurement
3 hrs.
An introduction to the measurement of hearing and the field of audiology. The course includes an introduction to aural pathologies. Prerequisite: Consent of instructor or SPPA 206.

SPPA 400 Practicum in Speech Pathology and Audiology I
2 hrs.
Clinical experience in the management of speech, language, and/or hearing disorders. Prior departmental approval required.

SPPA 401 Practicum in Speech Pathology and Audiology II
2 hrs.
Clinical experience in the management of speech, language, and/or hearing disorders. Prerequisite: SPPA 400.

SPPA 403 Speech Science
3 hrs.
Building on the student's prior understanding of anatomic, physiologic, and neurologic bases of speech, this course examines normal speech production with reference to the acoustic and perceptual products of interacting respiratory, phonatory, articulatory, and resonance systems. Prerequisite: Consent of instructor or SPPA 205 and SPPA 206.

SPPA 456 Rehabilitative Audiology
3 hrs.
Principles and clinical management of communication problems associated with auditory impairment.

SPPA 459 Special Studies in Communication Disorders
3 hrs.
A survey of neuropathologies and structural deviations which result in communication disorders, including infantile cerebral palsy and cleft palate. Prerequisite: Consent of instructor.

SPPA 552 Communication Problems of the Aged
3 hrs.
This course is designed to acquaint the student with receptive and expressive communication problems common to older adults. Emphasis is on the clinical management of characteristic organic speech disorders and impaired auditory functions associated with aging.

SPPA 554 Speech and Hearing Therapy in the Schools
2 hrs.
Study of clinical work with speech, language, and hearing disordered children in the school setting.

SPPA 556 Rehabilitative Audiology
3 hrs.
Orientation to the clinical management of communication problems associated with auditory impairment.

SPPA 595 Oral Language Development and Dysfunction
2 hrs.
This course is designed to provide the student preparing to be a classroom or special teacher with information about the nature of oral language, its development, and conditions associated with dysfunction. Does not apply toward a major in speech pathology and audiology.

SPPA 597 Topics in Speech Pathology and Audiology
1–4 hrs.
Selected topics in speech pathology and audiology are systematically explored through lectures, laboratory experiences, and student projects. Possible areas of study include: instrumentation in audiology, manual communication, electroophysiologic audiometry, computer applications to speech pathology and audiology, augmentative communication, and contemporary professional issues.
The Graduate College offers a wide variety of programs leading to the master's, specialist, and doctoral degree.

The University has sixty-two master's degree programs. The Master of Arts is awarded in numerous programs in the following general categories within the College of Education: Career and Technical Education, Counselor Education, Counseling Psychology, Early Childhood Education, Educational Leadership, Family and Consumer Sciences, Physical Education, Reading, Rehabilitation Counseling, Special Education, Teaching in the Elementary School, and Teaching in the Middle School.

A number of other programs at Western also lead to the Master of Arts: Anthropology, Art, Chemistry, Communication, Comparative Religion, Economics, English, Geography, History, Mathematics, Mathematics Education, Medieval Studies, Orientation and Mobility, Philosophy, Physics, Political Science, Psychology, Rehabilitation Teaching, Science Education, Sociology, Spanish, Speech Pathology and Audiology, Teaching of Geography, and Teaching of Music.


Programs leading to the Specialist in Education are offered in Educational Leadership and in School Psychology.


The Doctor of Education is offered in Educational Leadership and Special Education.

The Doctor of Public Administration is also offered.

Please refer to The Graduate College Catalog for further information on these programs.

Inquiries about financial assistance should be directed to The Graduate College; inquiries about research opportunities should be directed to the Office of Research and Sponsored Programs.
DIVISION OF CONTINUING EDUCATION

James A. Visser
Dean, Division of Continuing Education

The Division of Continuing Education offers educational opportunities to qualified persons who wish to pursue their education on a part-time basis. Increasing numbers of men and women are interested in and involved in improving their educational backgrounds for a variety of reasons—to improve career opportunities, to supplement past educational experience, to meet certification and licensure requirements, and to satisfy personal learning needs.

In response to the needs of these adult learners, Western's continuing education activities have been expanded to include courses for both undergraduate and graduate credit, distance learning via compressed video, correspondence, television, and other types of self-instructional courses, conference seminars, and workshops, and short courses for business, community, educational, and industrial leaders and other interested adults. Course and program offerings in west Michigan counties served by Western's Division of Continuing Education are planned in conferences between representatives from academic units and continuing education professionals who continuously analyze student's needs and interests. In-service educational programs are planned with business, civic, educational, and professional groups.

Western's on-campus, part-time, and evening students are served by the Division's central office located in Elsworth Hall. The Office of Administrative Services provides admission and registration assistance, as well as academic advising to General University Studies students.

Kalamazoo Off-Campus and Weekend Programs

Kalamazoo Off-Campus and Weekend Programs provides undergraduate and graduate courses in a variety of formats, including weekends and workshops for health professionals and teachers. Courses may be applied to degrees or certificates or can be taken for personal or professional development. Support services, including an on-site coordinator and a weekend librarian, are provided.

Distance Education

The Department of Distance Education offers an increasingly broad spectrum of courses and programs via multiple distance learning methods and techniques. WMU utilizes synchronous and asynchronous methodologies with courses delivered by compressed video, videotape and correspondence instruction. The department is continually developing new programming to deliver courses to students at a distance using the latest technologies.

Individualized Learning Courses

Individualized Learning courses are available when students cannot participate in on-campus or off-campus courses. The Office of Individualized Learning offers over 112 undergraduate credit courses using a variety of media. Courses are developed by WMU faculty. Registration and completion dates are flexible but under most circumstances, students have up to a year to complete the course. These credit courses may be applied to an undergraduate degree, subject to limitations defined by the University's college, or department in which the student is studying. Information may be obtained by calling (616) 387-4196.

Group Learning

Western Michigan University offers courses by compressed video interactive television (CVIT) and videotape/group discussion through Group Learning of the Department of Distance Education. In this program, students may complete the entire MBA and other courses from the School of Public Affairs and Administration, the College of Engineering and Applied Sciences, the College of Education and other selected areas. Courses are offered during the evening or on the weekend to many key sites around Michigan. Group Learning provides the flexibility and convenience that adult working professionals require. For more information, call (616) 387-4216.

Professional Programs and Conferences

The Office of Professional Programs and Conferences develops and manages conferences and non-credit seminars in cooperation with university departments, professional groups, and community organizations.

Regional Centers and Regional Sites

The Division's administrative office is located in Elsworth Hall on Western's main campus in Kalamazoo. Regional centers and regional sites are located as follows:

- Grand Rapids Regional Center
  2333 East Beltline Ave.
  Grand Rapids, MI 49506-5936
  (616) 777-9470
- Battle Creek (Kendall) Regional Center
  50 W. Jackson
  Battle Creek, MI 49017
  (616) 965-5380
- Lansing Regional Center
  300 N. Washington Square, Suite 200
  Lansing, MI 48933-1204
  (517) 372-8114
- Muskegon Regional Center
  Muskegon Center for Higher Education
  221 S. Quarterline Road
  Muskegon, MI 49442-2532
  (616) 777-0500
- Southwest Regional Center
  2510 Lakeview Avenue
  Kalamazoo, MI 49005
  (616) 983-1965
- Traverse City Regional Site
  200 Dendrohis Dr., Suite 200
  Traverse City, MI 49684
  (616) 922-1788
- Holland Regional Site
  B-O S, 100 8th St.
  Holland, MI 49422-9000
  (616) 392-1143

General University Studies

General University Studies is a baccalaureate degree program offered through the Division of Continuing Education. This degree is available for those students with technical and/or community college background who wish to return to college to complete the requirements for a bachelor's degree. Upon completion, students receive either the Bachelor of Arts or the Bachelor of Science degree, depending upon the subject matter content of the program. Specific course requirements vary with the selected area of concentration. All programs must be planned with an academic advisor for the area of concentration. Arrangements for consultation with an advisor will be provided at the student's convenience. Inquiries about the General University Studies programs may be directed to any of the Division's offices.

Admission

The General University Studies Curriculum programs are designed for students who have a transferable associate's degree or junior standing (56 hours), who are in good standing. Exceptions will be considered under special circumstances. The admission process is continuous. Applications may be submitted at any time during the calendar year. The University's terms begin in September (Fall), January (Winter), May (Spring) and June (Summer). To be admitted to this program, students should complete the admission steps at least two months prior to the start of classes.

1. Complete the regular [long form] admission application for a degree program and submit with the application fee to the University Admissions Office.
2. Request official transcripts to be sent to the WMU Office of Admissions and Orientation from all previously attended post-secondary institutions.

Lansing Regional Center
300 N. Washington Square, Suite 200
Lansing, MI 48933-1204
(517) 372-8114

WMU Office of Admissions and Orientation

1. Completethe regular [long form] admission application for a degree program and submit with the application fee to the University Admissions Office.
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General University Studies

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WMU Office of Admissions and Orientation

1. Complete the regular [long form] admission application for a degree program and submit with the application fee to the University Admissions Office.
2. Request official transcripts to be sent to the WMU Office of Admissions and Orientation from all previously attended post-secondary institutions.
When admission has been granted, the Office of Admissions and Orientation will prepare a credit evaluation which will enable the advisor to prepare a program outline prior to the first registration.

**General Requirements**

The general requirements for a bachelor's degree in the General University Studies curriculum include the following:

1. Complete at least 122 hours of credit, with a minimum of 63 hours of academic work from an accredited four-year, degree-granting institution. At least 30 hours of credit must be taken through Western Michigan University including WMU residency requirement.
2. Completion of a planned area of concentration, involving a minimum of 45 semester hours of credit. Some work may include credit completed in the first two years of the student's preparation or credit given for non-accredited training or experience.
3. Completion of the General Education requirement for a minimum of 37 semester hours of credit. This work does not have to be exclusive of work included in the area of concentration.
4. Completion of the University's Computer Usage, Intellectual Skills, and Baccalaureate Writing requirements.

**Program Areas**

**American Studies**

Lewis H. Carlson, Advisor

This Bachelor of Arts degree program is designed for those who wish to broaden their understanding and appreciation of American life and institutions. Students with an interest in the humanities, fine arts, or social sciences will find this program to their liking. Although the program is primarily nonvocational, it provides a useful background for a number of professional degree programs, such as business administration, public administration, social work, and the law.

The requirements for this 45-hour concentration are as follows:

1. A minimum of 25 credit hours, with at least two courses in each of any four of the following subject matter fields:
   - A. Anthropology, Philosophy, Religion
   - B. Art, Music, Theatre
   - C. English
   - D. History
   - E. Economics, Social Work, Sociology
   - F. Political Science
2. An additional 9 hours in one of the four fields chosen above, thus bringing the total from these areas to 45 hours.

**Applied Liberal Studies**

Nancy C. Cretsinger, Advisor

This program, which leads to the Bachelor of Arts degree, is available to those who have completed two years of undergraduate study. This program will be of particular interest to those adults who, through previous formal study and practical experience, are eligible for promotion to positions of supervisory, managerial, or executive responsibility, but who lack the formal education qualifications necessary for such advancement.

The requirements for this 45-hour concentration are as follows:

1. A minimum of 27 credit hours, with at least 9 hours (a minimum of 3 courses — 3-4 credit hours) selected from three of the following topical areas:
   - A. Community concerns
   - B. Communication skills
   - C. Environmental concerns
   - D. Human relations
   - E. International concerns
   - F. Technical skills
2. An additional 18 hours in the six areas chosen above.
3. Coursework from other universities may be applied toward this concentration.
4. An independent study project (3-8 hrs.) on a subject matter field.

Acceptance of this credit does not imply transferability to other degree programs at Western.

**Communication Skills**

Effective communication is increasingly viewed as the basis of cooperative interaction. Business enterprises and governmental agencies increasingly value the communication effectiveness of those in leadership positions. Courses in this bloc are designed to improve communication skills.

**Environmental Concerns**

Today's leader must have an understanding of the environment in which the organization must operate. Today's environment is much broader than in previous years. The leader must understand the economic, ecological and legal environments in which the firm operates. Courses in this bloc are designed to improve the leader's knowledge of these environmental issues.

**Human Relations Skills**

Developing effective relations between individuals and groups is an important activity of today's leader. Courses in this bloc are intended to develop a sensitivity to the importance of good human relations and enhance those skills necessary for effective inter-and intra-group cooperation.
Criminal Justice
Michelle Volkmer, Advisor

The General University Studies Bachelor of Arts degree in Criminal Justice is designed for persons who have completed an associate's degree in law enforcement, corrections, or police administration and wish to complete a bachelor's degree through part-time study. Sixty hours of upper division study beyond the associate's degree is required to complete the bachelor's degree in Criminal Justice. The degree program is interdisciplinary with core courses in law enforcement, courts, and corrections. In addition, each student has an opportunity to take advanced courses in one of these areas.

The requirements are as follows:

**Required Prerequisites**
The following courses are required before taking any of the core courses: Note: These hours are not included in the 33 hour requirement for the major.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 200</td>
<td>Principles of Sociology</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOC 240</td>
<td>Modern Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>SOC 260</td>
<td>Introduction to Criminal Justice</td>
<td>3</td>
</tr>
</tbody>
</table>

**Writing Expectation**
Students are expected to write at the college level before enrolling in the following advanced courses. Students should have completed ENGL 105 or equivalent.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 362</td>
<td>Criminology</td>
<td>3</td>
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</tbody>
</table>

**Core Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>SOC 363</td>
<td>Criminal Justice Process</td>
<td>3</td>
</tr>
<tr>
<td>SOC 364</td>
<td>Sociology of Law Enforcement</td>
<td>3</td>
</tr>
<tr>
<td>SOC 365</td>
<td>Juvenile Delinquency</td>
<td>3</td>
</tr>
<tr>
<td>SOC 366</td>
<td>Correctional Process</td>
<td>3</td>
</tr>
<tr>
<td>FCL 384</td>
<td>Criminal Law and Procedure</td>
<td>4</td>
</tr>
</tbody>
</table>

**Baccalaurate Writing Requirement**
The following course is required:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>SOC 466</td>
<td>Advanced Criminology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Research Methods Requirement**
The following course is required:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>SOC 382</td>
<td>Methods of Sociological Inquiry</td>
<td>3</td>
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</tbody>
</table>

**Electives**
To complete the required total of 33 hours, students may take any of the following courses:

**Contemporary Issues in Sociology and Criminology**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 341</td>
<td>Ethnic Relations</td>
<td>3</td>
</tr>
<tr>
<td>SOC 342</td>
<td>Child Abuse</td>
<td>3</td>
</tr>
<tr>
<td>SOC 345</td>
<td>Social Stratification</td>
<td>3</td>
</tr>
<tr>
<td>SOC 346</td>
<td>Special Topics in Sociology and Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>SOC 347</td>
<td>Corporations and Environmental Crime</td>
<td>3</td>
</tr>
<tr>
<td>SOC 348</td>
<td>Violence and U. S. Society</td>
<td>3</td>
</tr>
<tr>
<td>SOC 349</td>
<td>Victimization</td>
<td>3</td>
</tr>
<tr>
<td>SOC 350</td>
<td>Police and Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>SOC 351</td>
<td>Race, Ethnicity, and Justice</td>
<td>3</td>
</tr>
<tr>
<td>BAS 300</td>
<td>Black Experience</td>
<td>3</td>
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</tbody>
</table>

**Corrections**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>SOC 465</td>
<td>Non-Institutional Corrections</td>
<td>3</td>
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**Basis**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>FHL 313</td>
<td>Philosophy of Law</td>
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<tr>
<td>PSCI 320</td>
<td>American Judicial Process</td>
<td>4</td>
</tr>
<tr>
<td>PSCI 325</td>
<td>Criminal Justice Policy</td>
<td>3</td>
</tr>
<tr>
<td>PSCI 422</td>
<td>Civil Rights and Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>SOC 578</td>
<td>Sociology of Law</td>
<td>3</td>
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**Juvenile Justice**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 422</td>
<td>Adolescent Socialization</td>
<td>3</td>
</tr>
<tr>
<td>SOC 458</td>
<td>Juvenile Justice Casework</td>
<td>3</td>
</tr>
<tr>
<td>SOC 459</td>
<td>Juvenile Justice</td>
<td>3</td>
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</tbody>
</table>

**Law Enforcement Administration**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>SOC 467</td>
<td>Police and Community Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>SOC 468</td>
<td>Police and Crime Prevention</td>
<td>3</td>
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</tbody>
</table>

**Internship and Directed Study**

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 496</td>
<td>Criminal Justice Internship</td>
<td>3</td>
</tr>
<tr>
<td>SOC 598</td>
<td>Directed Individual Study</td>
<td>3</td>
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</table>

**Special Law Enforcement Certification Option**

Students have the option to enroll in the Law Enforcement Certification Program in cooperation with Kalamazoo Valley Community College. Applications and Preliminary Screening are required. Students are required to track in the program during the last two semesters at WMU (MLDTC ruiling). Students enrolled in Law Enforcement Certification must take a special section of Criminal Law and Procedures. See the advisor for further information.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>SOC 261</td>
<td>Policing</td>
<td>4</td>
</tr>
<tr>
<td>SOC 261</td>
<td>Patrol Procedures</td>
<td>4</td>
</tr>
<tr>
<td>SOC 261</td>
<td>Medical First Responder for Law Enforcement</td>
<td>3</td>
</tr>
<tr>
<td>SOC 261</td>
<td>Criminal Law and Procedure</td>
<td>4</td>
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**Internship**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>SOC 261</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>SOC 261</td>
<td>Criminal Investigation</td>
<td>4</td>
</tr>
<tr>
<td>SOC 261</td>
<td>Emergency Vehicle Operations</td>
<td>2</td>
</tr>
<tr>
<td>SOC 261</td>
<td>Police Physical Skills</td>
<td>4</td>
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</tbody>
</table>

**Health Studies**

Nancy Cretsinger, Advisor

This program is intended for allied health professionals including registered nurses (R.N.), registered dental assistants (R.D.A.), dental hygienists, radiologic technologists, respiratory therapists, histotechnologists, cytotechnologists, certified medical assistants, paramedics, and medical laboratory technicians who have achieved licensure or registry in their health profession and who wish to earn a Bachelor of Science degree.

Areas of concentration in health studies require a minimum of 45 semester hours. This total consists of:

1. 15 semester hours from the credit transferred for registry or licensure;
2. 15 semester hours in the following core requirements: Health Science, 3 hours; Human Behavior and Interaction, 9 hours, and Planning, Organization and Leadership Skills, 3 hours; and
3. 15 semester hours of course work in the student's specialized interest area.

The area of concentration represents the student's opportunity to further develop individual objectives. Although requirements in the area of concentration are the same for all students, there is an opportunity to accommodate individual interests and objectives.

**Social Science Studies**

Nancy E. Cretsinger, Advisor

This program was designed to provide career-related preparation for students interested or employed in public service occupations, such as community development, social services (not certified), firefighting, state and local government. The program will appeal to those with an interest in the social sciences and who are considering a related vocational field, as well as those interested in the study of public issues, politics, and social questions. A Bachelor of Science degree is conferred upon those completing the program requirements.

The requirements for this 45-hour social science concentration are as follows:

1. A minimum of 12 semester hours of credit selected from the following: ANTH 220, Cultural Anthropology, or ANTH 240, Principles of Cultural Anthropology, ECON 201, Principles of Economics; HIST 210, American History to 1890, or HIST 211, American History since 1890; GEOG 205, Our Human World; PSCI 100, Introduction to Political Science; PSY 150, Introduction to Human Behavior; SWRK 210, Social Work Services and Professional Roles.

2. At least 15 semester hours of additional social science credit in anthropology, economics, geography, history, political science, psychology, social work, and/or sociology. These courses must be approved by the program's academic advisor, and may be interdisciplinary—drawn from a number of departments; disciplinary—drawn from a single social science discipline; or applied—identified with the needs of a particular area of study, such as public administration, sociology of education, social science research techniques, or applied social service.
Technical-Scientific Studies
Sandra F. Blanchard, Advisor

This program was designed for those interested in technical studies, including the study of aviation, automotive technology, engineering graphics, manufacturing, supervision, and technical vocational education. A student who has completed a two-year vocational-technical study program at a community college, or one who has achieved a comparable level of preparation through a combination of study and work experience, will find this program of interest. A career oriented program, particularly for those in manufacturing and industrial education, it leads to the Bachelor of Science degree.

The requirements for his 45-hour concentration are as follows:

1. A minimum of 45 semester hours of credit from such areas as graphics, materials and processing, technical analysis, transportation technology, and manufacturing management. Students interested in technical vocational education, such as teachers in skills centers, may substitute such areas as industrial arts, drawing, graphic arts, metal working, woodworking, and auto mechanics.

2. Up to 15 hours taken previously may be applied towards this concentration. Some of these credits may be earned through examination, evaluation of previous experience, and non-accredited training.

3. At least 15 hours must be earned through courses at Western. Students desiring certification as teachers in vocational-technical areas must take additional professional courses in methods course construction and evaluation.
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Building Custodial and Support Services, Manager
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Building Utilities/Power Plant, Manager
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Business Services, Manager
Arvon Farrell
Landscape Services, Manager
Paul MacNeilis
Maintenance Services, Manager
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Blaine Kalafut
Environmental Health and Safety, Manager
Patricia Holton
Services Division
Wesley R. Carpenter
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Annual Fund, Director
Stephen Keizer

Corporate and Foundation Relations, Director
Tracy Connelly

Paper Technology Foundation, Executive Director
John A. Ferguson

Planned Giving Services, Director
Kenneth J. DeVries

Prospect Research, Director
Pat Gustafson

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Ruth A. Stevens

Graphics and Design, Director
David H. Smith

University Communications, Director
Michael J. Matthews

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Jan Van Der Kley

Accounting, Manager
Lynda Hunt

Advancement Services, Manager
Kai M. Chapman

Alumni Relations, Director
M. Jamie Jeremy

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Daniel L. Stufflebeam

Institute for Leadership Transformation, Associate Director
Lynn C. Todman

Service Quality Institute, Director
Linda M. Delene

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Philip B. Noack

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Research Compliance, Coordinator
Loreene L. Broker

Human Subjects Institutional Review Board

Institutional Animal Care and Use Committee

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David Parrott

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Marcia Barnhart

Disabled Student Resources and Services, Director
Beth den Hartigh

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Albert W. Laaksonen

Residence Life, Director
Sheryl Nickel

Sindecuse Health Center, Director
Terry Baxter

Student Employment Referral Service, Director
Lynn Kelly-Albertson

Student Life, Director
Paul Iagnocco

University Counseling and Testing Center, Director
Norman Kiracofe

University Recreation Programs and Facilities, Director
Vernon Payne

University Substance Abuse Services, Director
Gregory Boothroyd

Western Herald, General Manager
O’Ryan Rickard

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Edmonds, COL, (Dr.) Thomas A., 1989. Adjunct Professor of Military Sciences
Edmonds, Thomas A., 1989. Adjunct Professor of Finance and Commercial Law
B.A., Western Michigan; J.D., Wayne State
Edwards, Adrienne G., 1964. Professor of Finance and Commercial Law
B.Com., St. Francis Xavier: M.B.A., Detroit; Ph.D., Ohio State
Edwards, Morr, 1979. Adjunct Associate Professor of Community Health Services
B.A., Vanderbll, M.A., Brown; M.A., Ph.D., Western Michigan
Edwards, Sandra, 1975. Associate Professor of Occupational Therapy
B.S., Florida; M.A., Western Michigan
Edwards, Todd M., 1996. Assistant Professor of Family and Consumer Sciences
B.A., Arizona State; M.A., Arizona; Ph.D., Virginia Tech
Enenigben, Paul J., 1969. Professor of Mathematics and Statistics
B.A., Hope; M.A., Kansas; Ph.D., Kentuckv
Egan, Philip J., 1964, Associate Professor of English
B.A., College of the Holy Cross; M.A., Ph.D., Kansas
Elhaim, Kristal E., 1994. Assistant Professor of Psychology
B.A., Miami (Ohio); Ed.S., Ph.D., Cincinnati
Elmore, Wood B., 1980, Professor of Biological Sciences
B.S., Rutgers; M.A., Columbia; Ph.D., Pennsylvania State
Eichler, Victor, 1995, Adjunct Assistant Professor of Community Health Services
B.S., M.S., University of Ph.D., Iowa
Eimers, Nancy, 1989, Associate Professor of English
B.A., I.A., Indiana; M.F.A., Arizona; Ph.D., Arizona
Eisenberg, Robert C., 1976, Professor of Biological Sciences
B.S., Northwest Missouri State; M.S., Ph.D., North Carolina State
Elder, E. Rozanne, 1973, Professor of History and Director, Institute of Catholic Studies
B.A., M.A., Western Michigan; Ph.D., Detroit, Toronto
Ellin, Joseph S., 1962, Professor of Philosophy
B.A., Boston College; Ph.D., Yale
Emley, Grace, 1963, Adjunct Associate Professor of Community Health Services
B.A., Chamberlain; M.A., Ph.D., Western Michigan
Engelmann, Paul V., 1987, Associate Professor of Industrial and Manufacturing Engineering
B.S., M.S., Ed.D., Western Michigan
Enyedi, Alexander J., 1993, Assistant Professor of Biological Sciences
B.S., M.S., Ph.D., Pennsylvania State
Ericksen, Robert L., 1963, Professor of Speech Pathology and Audiology
B.A., Ombra; M.A., Nebraska; Ph.D., Iowa
Essani, Karim, 1989, Associate Professor of Biological Sciences
B.S., M.S., Karachi (Pakistan); Ph.D., Western Ontario
Evans, Gowendolyn E., 1986, Associate Professor of English
B.A., Jackson State; M.A., Dayton; Ph.D., Michigan
Fager, Jennifer, 1996, Assistant Professor of Education and Professional Development
B.S., Loyola (Chicago); Ph.D., Michigan
Fals Nelson, Regina, 1994, Assistant Professor of Education and Professional Development
B.S., Loyola (Chicago); Ph.D., Michigan
Fales, William, 1996, Adjunct Assistant Professor of Physician Assistant
B.A., Indiana; M.D., Thomas Jefferson
Falk, Arthur, 1964, Professor of Philosophy
B.A., Fordham; M.A., Ph.D., Yale
Falk, Nancy A., 1996, Professor of Comparative Religion
B.A., Cedar Crest; M.A., Ph.D., Chicago
Farber, Paul S., 1986, Assistant Professor of Education and Professional Development
B.S., Ed.D., SUNY (Buffalo)
Farrell, Daniel, 1983, Professor and Chair, Department of Management
B.A., Aquinas; M.A., Central Michigan; Ph.D., Iowa
Farriss, Todd E., 1986, Professor of Spanish
B.S., M.A., Texas; Ph.D., Iowa
Fekete, Robert W., 1971, Professor of Spanish
B.S., M.A., Boston College; Ph.D., Michigan State
Fenn, Williams, 1986, Associate Professor of Physician Assistant
B.S., Oklahoma; B.S., SUNY, M.S., Aquinas
Ferreira, James M., 1971, Professor of History
B.A., M.A., Northeastern; Ph.D., Minnesota
Ficor, Gyula, 1967, Professor of Biological Sciences
B.S., Colorado State; Ph.D., Missouri
Fischer, B. Juliska, 1996, Assistant Professor of Geography
B.A., M.A., Wisconsin (Madison); Ph.D., Michigan State
Fisher, George, 1984, Adjunct Assistant Professor of Community Health Services
B.S., M.A., Western Michigan; Ph.D., Michigan
Fisher, Kenneth, 1994, Adjunct Professor of Biological Sciences
B.S., Tufts; M.D., George Washington
Fitzgerald, John Gregory, 1981, Assistant Professor of University Libray
B.A., Wake Forest; M.M., Georgia State; M.L., Emory
Fitzco, Donald L., 1990, Professor of History
B.A., M.A., Ph.D., Oklahoma
Flischl, Roberto, 1992, Adjunct Professor of Psychology
B.A., Maryland; M.A., Ph.D., Western Michigan
Flanders Frank J., 1992, Associate Professor of Management
B.S., Illinois; Ph.D., Indiana
Fleming, Ursula, 1996, Associate Professor of Paper and Printing Science and Engineering
B.Sc., Ohio State; A.M., Ph.D., Harvard
Ford, Thomas E., 1996, Assistant Professor of Sociology
B.S., Texas Christian; M.A., Ph.D. Maryland
Ford, Wendy S., 1983, Assistant Professor of Communication
B.S., Texas, M.A., Ph.D. Maryland
Forrest, J. Patrick, 1982, Associate Professor of Accountancy
B.A. Michigan State; M.B.A., Western Michigan; Ph.D., Western Michigan
Forseiff, Louise, 1962, Professor of Community Health Services
B.A., Lake Erie; M.A., Western Michigan; Ph.D., Michigan State
Fox, Susan A., 1994, Assistant Professor of Community Health Services
B.A., Central Florida; M.A., Ph.D., California (Santa Barbara)
Freyer, Roland N., 1996, Assistant Professor of Geography
B.S., M.S., Emporia State; Ph.D., Nebraska (Lincoln)
Frauenknecht, Marianne, 1996, Associate Professor of Health, Physical Education and Recreation
B.S., Cedarville; M.A., Dayton; Ph.D., Purdue
Fredericks, Tochi K., 1995, Assistant Professor of Industrial and Manufacturing Engineering
B.S., S.M., Emporia State; Ph.D., Nebraska (Lincoln)
Friedman, Marianne, 1996, Associate Professor of Political Science
B.A., Columbia; M.A., Stanford
Frye, Patricia A., 1991, Associate Professor of Health, Physical Education and Recreation
B.S., M.A., Florida; Ph.D., Indiana
Fugita, Ruylene, 1976, Professor of Psychology
B.A., B.A., M.A., Ph.D., Florida
Gaines, Jena M., 1974, Assistant Professor of History
B.A., Bridgewater State; M.A., Ph.D., Virginia
Gamblino, Frank M., 1984, Associate Professor of Marketing
B.S., Western Michigan; M.A., Central Michigan; Ed.D., Western Michigan
Gamez, Luis R., 1994, Associate Professor of English
B.A., Inore Dame; M.A., Ph.D., Virginia
Garber, Sharon, 1994, Assistant Professor of Dance
B.F.A., York, M.F.A., Texas, Danish; Specified** Conditioning
Gardiner, Jeffrey R., 1986, Associate Professor of German
A.B., Stanford; M.A., Ph.D., Colorado
Garinelle, Stavanca, 1994, Associate Professor of Mechanical and Aeronautical Engineering
B.Tech., Indian Institute of Technology, M.S., Ph.D., Ohio State
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