Western Michigan University Undergraduate Catalog 1999-2001

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1999-2001 Calendar

Fall Semester, 1999
August 30, Monday

   *Advising Day—Classes Begin at 4:00 p.m.
   September 6, Monday
   Labor Day Recess
   October 22, Friday
   Spirit Day Recess
   October 23, Saturday
   Homecoming
November 15, Monday
   Final Day to Apply for December 1999 Graduation*
November 24, Wednesday
   Thanksgiving Recess (Noon)
November 29, Monday
   Classes Resume
December 6-10
   Final Examination Week
December 11, Saturday
   Semester Ends—Commencement

Winter Semester, 2000
January 3, Monday
   *Advising Day—Classes Begin at 4:00 p.m.
January 17, Monday
   MLK Day Convocations and Activities
February 29, Monday
   Classes Resume
March 15, Wednesday
   Final Day to Apply for April 2000 Graduation*
April 17-21
   Final Examination Week
April 22, Saturday
   Semester Ends—Commencement

Spring Session, 2000
May 1, Monday
   Classes Begin
May 15, Monday
   Final Day to Apply for June 2000 Graduation*
May 23, Monday
   Memorial Day Recess
June 21, Wednesday
   Session Ends at Noon
June 24, Saturday
   Commencement

Summer Session, 2000
June 21, Wednesday
   Classes Begin at Noon
July 4, Tuesday
   Independence Day Recess
July 14, Friday
   Final Day to Apply for August 2000 Graduation*
August 11, Friday
   Session Ends

Fall Semester, 2000
August 26, Monday
   Advising Day—Classes Begin at 4:00 p.m.
   September 4, Monday
   Labor Day Recess
   October, Friday to be announced
   Spirit Day Recess
   October, Saturday to be announced
   Homecoming
   November 15, Wednesday
   Final Day to Apply for December 2000 Graduation*
   November 22, Wednesday
   Final Examination Week
   December 9, Saturday
   Semester ends—Commencement

Winter Semester, 2001
January 2, Tuesday
   *Advising Day—Classes Begin at 4:00 p.m.
January 15, Monday
   MLK Day Convocation and Activities
February 26, Monday
   Classes Resume
March 5, Monday
   Classes Resume
March 15, Thursday
   Final Day to Apply for April 2001 Graduation*
   April 16-20
   Final Examination Week
   April 21, Saturday
   Semester Ends—Commencement

Spring Session, 2001
April 30, Monday
   Classes Begin
May 15, Tuesday
   Final Day to Apply for June 2001 Graduation*
May 28, Monday
   Memorial Day Recess
June 20, Wednesday
   Session Ends at Noon
June 23, Saturday
   Commencement

Summer Session, 2001
June 20, Wednesday
   Classes Begin at Noon
July 4, Wednesday
   Independence Day Recess
July 16, Monday
   Final Day to Apply for August 2001 Graduation*
   August 10, Friday
   Session Ends

*Graduation Fee and Application Deadline
Fall Semester Graduation (December)
$30.00 Application Deadline: August 1
$50.00 Application Deadline: November 15
Winter Semester Graduation (April)
$30.00 Application Deadline: December 1
$50.00 Application Deadline: March 15
Spring Session Graduation (June)
$30.00 Application Deadline: February 1
$50.00 Application Deadline: May 15
Summer Session Graduation (August)
$30.00 Application Deadline: April 1
$50.00 Application Deadline: July 15

NOTE: This Academic Calendar is Subject to Change Without Notice.
Western Michigan University

1999 • 2001
Undergraduate Catalog

Kalamazoo, Michigan

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. Changes in administration and instruction may be made after the publication date of this catalog. The University reserves the right to withdraw, revoke, and/or cancel an admission decision for any reason, and at any time, it deems warranted. This right shall also apply in instances when the University acquires information about an applicant or student after an admission decision is made. The University reserves the right to change, delete, or add to requirements, procedures, and/or other provisions 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. The University further reserves all rights regarding dismissals, suspensions, withdrawals, denials of requests or applications, cancellations or revocations of admissions, impositions of holds on records of students, and other administrative decisions, at all times.

Academic calendars are subject to change without notice.

Western Michigan University requires that all students demonstrate skills in reading, writing, mathematics, and computer literacy deemed appropriate and sufficient by the University as conditions for the awarding of any degree. These conditions 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, incomplete 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.

Becoming a student at Western Michigan University signifies the student's agreement to comply with all requirements of the University whenever approved.

ABOUT WESTERN MICHIGAN UNIVERSITY

Location
Western Michigan University is a state-assisted, co-educational institution 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 283,000.

Founded
1903

President
Elson Floyd, Ph.D.

Academic Divisions
College of Arts and Sciences
College of Aviation
Haworth College of Business
College of Education
College of Engineering and Applied Sciences
College of Fine Arts
The Graduate College
College of Health and Human Services
The Lee Honors College

The Division of Continuing Education

Governing Body
Under the Michigan Constitution of 1963, Western Michigan University has constitutional status, with its own Board of Trustees appointed by the Governor.

Educational Goals
To help each student develop the ability to think critically and objectively, to locate and assess information, and to communicate clearly and effectively in speaking and in writing; to expose each student to the knowledge and insights essential to significant participation in our increasingly technological, interdependent, and rapidly changing world; to assure that each student has the opportunity to examine the central role of ethics and values in the shaping of meaningful lives; to structure the learning experience so that students can appreciate and understand the importance and consequences of our diverse cultural and ethnic heritage; to instill in 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.

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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.

Founded in 1903 as a normal school for preparing elementary and secondary school teachers and designated in 1957 as the state's fourth public university, Western Michigan University has earned recognition by the Michigan Legislature as a graduate-intensive university and by the Carnegie Foundation for the Advancement of Teaching as a Doctoral I University. The University shares with other higher education institutions the mission to discover, disseminate, extend, and preserve knowledge and culture. In fulfilling this responsibility, University instructional programs strive to increase students' capacity for intellectual growth and achievement, instill a commitment to learning and service to society, and meet the needs of an increasingly diverse student population. The University's research mission requires the faculty and students to create new knowledge and to address social needs and concerns. The University serves the region as a major information and technology resource and plays a critical role in cultural, social, and economic development and enrichment. The University strives for excellence in its endeavors and continually evaluates its efforts to assure that objective.

Western Michigan University offers a full array of undergraduate programs in the fine arts, humanities, social and natural sciences, and the professions; master's programs through its departments and schools; and doctoral programs in selected fields. The colleges share the University's traditional commitment to the preparation of teachers. Education programs provide students the opportunity to gain academic knowledge and develop the ability to apply that knowledge based on considered ethical choices, and seek to produce graduates who will think...
critically, communicate effectively, and participate meaningfully in a rapidly changing world. The general education program emphasizes a diverse cultural and ethnic heritage and the importance of a global perspective. Academic major programs require students to master a field of inquiry, discipline, or profession sufficient to an understanding of its methods, subject matter, and future in service to society.

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 extends its resources to the community through fine arts programming, on-site delivery of educational programs, student service and internship assistance, health-related clinical services, technology transfer, technical support, and applied research programs. The University deliberately seeks student, staff, and faculty populations characterized by a diversity that reflects society at large and meets student needs through cultural, academic, and financial support and enrichment programs designed to promote student persistence, independence, and success.

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, artistic events, multicultural programs, intercollegiate athletics, and intramural activities together with formal academic endeavor constitute the University environment. Western Michigan University fosters and develops ethical behavior among administrators, faculty, staff, and students. Faculty and student governance structures rest upon the principles of academic freedom and professional ethics consistent with the responsibilities of an academic community.

(Approved by Board of Trustees February 20, 1970; amended June 13, 1980; June 25, 1982; and April 27, 1990.)

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; health, physical education, and recreation; 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 doctoral programs in counselor education; science education; and special education
- master's, educational specialist, and doctoral 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 Department of Blind Rehabilitation are accredited by the Association for Education and the Rehabilitation of the Blind and Visually Impaired.

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 engineering graphics and design technology program is also accredited by the National Association of Schools of Art and Design.

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

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

In the Department of Counselor Education and Counseling Psychology, the master's and doctoral programs in community counseling, school counseling, student affairs in higher education, counseling and leadership, and counselor education and supervision are accredited by the Council for Accreditation of Counseling and Related Educational Programs; the doctoral program in counseling psychology is accredited by the American Psychological Association.

Programs in the Department of Dance are accredited by the National Association of Schools of Dance.

Programs in the Department of Health, Physical Education and Recreation are accredited by the Association for Health Education and the National Athletic Training Association.

The industrial design program in the Department of Construction Engineering, Materials Engineering, and Industrial Design is accredited by the National Association of Schools of Art and Design.

The interior design program in the Department of Family and Consumer Sciences is accredited by the Foundation for Interior Design Education Research.

Programs in the School of Music are accredited by the National Association of Schools of Music.

Programs in the Bronson School of Nursing are accredited by the National League for Nursing Accrediting Committee.

Programs in the Department of Occupational Therapy are accredited by the Accreditation Council for Occupational Therapy Education.

The Physician Assistant Program is accredited by the Commission on Accreditation of Allied Health Education Programs.

In the Department of Psychology, the master's and doctoral programs in behavioral analysis, applied behavior analysis, and experimental analysis are accredited by the Association for Behavior Analysis International; the doctoral program in Clinical Psychology is accredited by the American Psychological Association; and the specialist and doctoral programs in School Psychology are accredited by the State of Michigan and by the National Association of School Psychology.

The master's program in public administration is accredited by the National Association of Schools of Public Affairs and Administration.

Programs in the School of Social Work are accredited by the Council on Social Work Education.

Programs in the Department of Speech Pathology and Audiology are accredited by the Education Standards Board of the American Speech-Language-Hearing Association and by the Professional Services Board of the American Speech-Language-Hearing Association.

Programs in the Department of Theatre are accredited by the National Association of Schools of Theatre.

Copies of accreditation documents are available for review upon request in the Office of the Provost and Vice President for Academic Affairs.

Accreditation
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.

Freshman applicants are strongly encouraged 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.

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 admission 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 admission offer.

The University recognizes the need for educational opportunities for people of widely varying ages and backgrounds. Therefore, special admission programs are available for potentially successful students from disadvantaged, culturally deprived, or economically impoverished segments of society. In addition, the University provides access to adults who are returning to school after a considerable absence.

The University reserves the right to withdraw, revoice, and/or cancel an admission decision for any reason, and at any time, it deems warranted. This right shall also apply in instances when the University acquires information about an applicant or student after an admission decision is made.

Admission to Western Michigan University is non-discriminatory.

Advanced Placement Program (AP)
The Advanced Placement Program of the College Board provides the opportunity for students to earn college credit while still in high school. Complete information on AP 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 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 Registration, Records, and Regulations section of this catalog.

ADMISSION PROCEDURES
Regular Degree Bound Students
FRESHMEN STUDENTS
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, or the College Board (SAT), with results sent directly to Western Michigan University (ACT College Code 2066; SAT College Code 1902); 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 December 31 ensures full consideration for scholarships, financial aid, Honors College admission, housing, and orientation.

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 at another school 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 two-day University Orientation session. The program includes 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. Programs are held in the summer and just before the beginning of each term. Information is sent automatically to all admitted students.

TRANSFER STUDENTS
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
8 ADMISSION POLICIES AND PROCEDURES

the application and may result in dismissal if admitted. Transfer credit will not be granted for any schools not reported. Applicants currently enrolled at another institution should have a partial transcript sent to WMU. A tentative admission decision and partial credit evaluation can be made to allow for advising and registration. A final WMU transcript showing acceptable grades must be received within ten days of 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 at the University. For details see International Students in this section.

When to apply

Transfer students should apply in January for the fall semester, in September for the winter semester, and in December for the spring and/or summer sessions. Transfer students applying for fall semester should apply before March 1 for fullest advising/registration and financial aid/scholarship opportunities. Some programs require an earlier application. See the Programs of Study section in this catalog.

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

Transfer students are encouraged to take advantage of the visit opportunities noted in the section above. Specific transfer information sessions are included in visit programs. Students should check with the campus visit center for details.

Notification of status

The University notifies transfers of their admission status on a rolling basis. When all materials are on file the Admissions Committee acts, students receive notification. The decision may be to admit, to hold a decision for work in progress at another institution, or to suggest a student take more work before being accepted.

Admission of students attending another institution is conditional upon successful completion of the work in progress. Poor performance may change the admission status or cause withdrawal of the admission offer.

Credit Evaluation

Students accepted for transfer to WMU will receive an evaluation of their previous college work, showing courses transferred with WMU equivalencies. Course equivalencies for Michigan's public community colleges and other transfer information are available in the counseling office of those community colleges or from WMU's Office of Admissions and Orientation. Credit transfer information for other institutions is also available from the WMU Office of Admissions and Orientation. Transferable courses completed at another college will be accepted for credit only. Grades earned in these classes will be used only to determine admissibility to the University; they will not be recorded on the WMU transcript. Courses with "D" grades may be transferred only if the cumulative grade point average at the transfer institution was at least a 2.0 for work transferring to WMU. Course grades below "C" may not be used in fulfilling major or minor requirements. Credit earned by examination does not normally transfer to the University. Students who have taken AP or CLEP examinations should have official score reports sent to the Office of Admissions and Orientation, according to the “Credit By Examination” information elsewhere in this catalog.

Western Michigan University normally accepts work taken at a college or university accredited by an agency other than a regional accrediting agency may be accepted on a provisional basis, subject to validation. The validation process consists of successful, subsequent completion of 26 semester hours of coursework at WMU or at another regionally accredited school with a minimum GPA of 2.0. Trend of the most recent grades also will be taken into account. The credit will be awarded after the validation has been completed.

Transfer credit from foreign institutions will be evaluated by the Office of International Student Services and credit awarded on a course by course basis depending on the result.

Transferring credit back to WMU

All regulations and procedures concerning transfer of credit for new students also apply to WMU students who take work at other institutions to transfer back to Western. Before enrolling at another institution, WMU students should discuss course selection with their WMU academic advisor and a credit evaluator in the Office of Admissions and Orientation to ensure transferability.

Advising/registration

All admitted transfer students should make arrangements for an advising session with a WMU advisor as soon as they have their admission materials and credit evaluation. At this session students will learn how transferred courses apply to the WMU major and will select courses for registration. Registration may be completed after the advising session. Admitted transfer students should call their college advising office directly to arrange an advising session. Transfer students should meet with their advisor and register during the registration periods available to current WMU students and should not wait until just before the beginning of classes.

Orientation

Transfer students are encouraged to participate in orientation programs on facilities, general requirements, and services. These programs have been developed with input from past transfer students to meet the needs of students making a successful transfer to a new institution. These sessions do not provide advising. Students transferring fewer than 16 credit hours at the time of admission are required to attend a transfer orientation program.

INTERNATIONAL STUDENTS

To qualify for admission, international students must show that they are academically, financially, and linguistically capable of succeeding in full-time study. Before an international student can be admitted and the Certificate of Eligibility for a visa issued, the student must:

1. Complete an application form and return it to the WMU Office of International Student Services with a $25.00 application fee.
2. Provide complete and official transcripts of secondary and undergraduate studies as well as copies of diplomas, certificates or degrees. These must be translated into English and list course titles and grades (marks) received for each.
3. Provide proof of adequate funding per academic year. This funding amount includes tuition, room and board, books, health insurance, and miscellaneous expenses. Personal/family savings must be verified by a bank statement. If sponsored by a government, an official letter must be submitted showing that the scholarship is valid for use at WMU and may be exempted from this requirement, at the discretion of the Office of International Student Services.

Test of English as a Foreign Language (TOEFL) A score of 500 is required for restricted admission (part-time remedial English and part-time academics during the first semester) or 550 for unrestricted admission.

Michigan English Language Assessment Battery (MELAB) A score of 75 is required for restricted admission or 85 for unrestricted admission.

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.

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.

International Baccalaureate (IB) A grade of 5 in English is required for unrestricted admission. This is equivalent to a 550 TOEFL.

5. A prospective student may enroll in the WMU Career English Language Center for International Students (CELSI) until achieving the required TOEFL score for academic enrollment. For more information, contact the CELSI Office.

Special Admission Programs

ALPHA PROGRAM

The Alpha Program is a support program for first year students that seeks to provide the opportunity for college-level work with academic assistance. The Program provides developmental academic advising, alerts students to University resources, and requires attendance at skill building workshops.

Consideration is given to those students who do not meet WMU's regular admissions criteria but who have demonstrated the potential for college-level work. From this pool, the University's Office of Admissions and Orientation will select those students who appear to have the best chance for success. Interested students should follow regular admissions procedures. Personal/family savings must be verified by a bank statement. If sponsored by a government, an official letter must be submitted showing that the scholarship is valid for use at WMU and may be exempted from this requirement, at the discretion of the Office of International Student Services.

Admission to the Alpha Program is on a one year probationary status. Selected students, and their parents, must sign a program contract accepting conditions of admission. These include:

1. Enroll in WMU's University Curriculum (UNV);
2. Attend Frontier Freshman Orientation;
3. Meet regularly with the Alpha advisor;
4. Enroll in 100 and/or 200 level courses during the probationary year.
5. Register for no more than four academic courses along with UNIV 101;  
6. Maintain a minimum 2.0 ("C") grade point average while at WMU; and  
7. Complete an academic assessment and attend skill-building workshops.  

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 minority students to pursue a college education, the original program provided scholarships and remedial help through a Kellogg Foundation grant. In its present form the program seeks 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, 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. 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 and conditions of the program, and  
2. Complete and mail all financial aid forms.  

Program students begin in the WMU fall session. 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, freshman, 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 in the Registration, Records, and Regulations section of this catalog).  

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 all 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 in good academic 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.  

HIGH SCHOOL DUAL ENROLLEES  

Students who wish to take courses at the University while still in high school should submit a High School Guest (Dual Enrollment) Application 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. Freshmen through juniors with at least a 3.50 grade point average will be considered for enrollment on a case by case basis. In either instance, admission as a guest student 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 are referred to the Registrar's Office for registration; and  
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 an absence of ten years or higher education will be readmitted through the Office of Admissions and Orientation. They may also apply, through the Office of the Registrar, to have previous Western work still recorded on a permanent student record. Class hours with a grade of "D" or "F" or lower will be removed from the student's academic record. Students who wish to apply for readmission must be considered under regular admission standards.
TUITION AND FEES

TUITION

Student tuition fees are assessed on a credit hour basis. Fees per credit hour for 1999-2000 are listed below:

Resident Undergraduate—Lower Division*, $111.40
Resident Undergraduate—Upper Division**, $124.91
Resident Graduate, $159.62
Non-Resident Undergraduate—Lower Division, $314.03
Non-Resident Undergraduate—Upper Division, $314.03
Non-Resident Graduate, $384.22

*Resident: See the Residency section directly below for definition.
**Non-Resident: See the Residency section directly below for definition.

LOWER DIVISION: Undergraduate students who have not completed fifty-six credit hours by the start of each semester/session will be classified Lower Division.

**Upper Division: Undergraduate students who have completed fifty-six credit hours will be classified as Upper Division.

RESIDENCY

A student's classification as a resident or non-resident for the purpose of assessing tuition fees is determined by the following policy adopted by the Board of Trustees of Western Michigan University. The policy applies to all students.

1. A student who normally lives in Western Michigan University for the primary or sole purpose of attending the University or who is a student whose domicile is Michigan because he/she has been employed as a migrant worker in Michigan for at least one year, is domiciled in Michigan if he/she was domiciled in Michigan at the time of the proposed enrollment.

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 University 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 of verification of employment is required.

Migrant worker in Michigan is defined as one who travels to the state of 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. 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 or 10 days after the first day of classes for each session. Any questions concerning residency classification should be directed to the Office of the Registrar.

STUDENT FEES

Admission Application Fee

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

Admission Validation Deposit

A $50 deposit applicable to fall student fees is required for all admitted beginner, transfer, and former students. The deposit is not refundable after May 1. Details are provided on the Certificate of Admission from the Office of Admissions and Orientation.

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. Students enrolled for 7 or more credit hours per semester or 4 or more credit hours per session must bear the appropriate postmark date for consideration of any refund.

Complete Withdrawal From All Courses, Effect on Tuition

The Schedule of Classes for the appropriate semester/session should be consulted for the refund policy that pertains to complete withdrawal.

Students completing withdrawal from all classes must enter this information into the touchtone registration system or by going to the Registrar's office during the official drop/add days in order to process their withdrawal and assure a 100 percent refund. 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.

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.
Fall and Winter Semesters $289.00 
Spring and Summer Sessions $144.50 
Students enrolled for 6 or fewer credit hours per semester or 3 or fewer credit hours per session: 
Fall and Winter Semesters $120.00 
Spring and Summer Sessions $60.00 

**Flight Instruction Fee**

Fees for flight instruction courses in the College of Aviation range broadly. For specific course fee information, consult the College of Aviation.

Refund of flight instruction fees will be made in accordance with the policy established by the College of Aviation. For specific course fee information, consult the College of Aviation.

**Graduation Fee and Application Deadline**

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<thead>
<tr>
<th>Session</th>
<th>Fee</th>
<th>Application Deadline</th>
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<tbody>
<tr>
<td>Summer Session Graduation</td>
<td>$30.00</td>
<td>April 1</td>
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<tr>
<td>Fall Semester Graduation</td>
<td>$30.00</td>
<td>August 1</td>
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<tr>
<td>Winter Semester Graduation</td>
<td>$30.00</td>
<td>December 1</td>
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<tr>
<td>Spring Session Graduation</td>
<td>$30.00</td>
<td>February 1</td>
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**International Student Fee**

International students will be charged a $25.00 fee each semester.

**Late Registration Fee**

A late registration fee of $100.00 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 the special handling required. It is not refundable.

**Late Add Fee**

A late add fee of $50.00 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 the special handling required. It is not refundable.

**Liability Insurance Fee**

Students enrolled in courses requiring participation off-campus for field experience or practicums will be charged a liability insurance fee. This fee will be charged one time per year, fall semester through summer session. Students registered in classes that require more than one type of liability insurance will be charged once for each.

**Student Activity Fee**

A student assessment fee (SAF) of $12.00 per semester (Fall and Winter) and $6.00 per session (Spring and Summer) 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.

**RESIDENCE HALL AND DINING FEES**

Cost of room and dining in 1999-2000 for 20 meals per week is $2,333.00 for the fall semester and $2,498.00 for the winter semester, per student; for 15 meals per week it is $2,320.00 for the fall semester and $2,436.00 for the winter semester, per student; for 10 meals per week it is $2,123.00 for the fall semester and $2,217.00 for the winter semester, per student.

The rate for room only is $1,043.00 for the fall semester and $1,103.00 for the winter semester, per student.

The rates quoted above are on the basis of two or more students per room and include a $25.00 per semester deferred maintenance fee. The Board of Trustees review annually the room and dining rates and may increase the rates if, in its opinion, such an increase is necessary.

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.

Newly admitted undergraduate students are automatically sent information about residence hall offerings for the semester they anticipate coming to the University. Individuals returning to the University as re-entries, and newly admitted graduate students, will receive information by return mail upon requesting details from the Manager of Residence Hall Facilities, Student Services Building.

Residence hall accommodations are not automatically made as a result of admission to the University.
**Western's Student Financial Aid Office** administers a variety of student financial assistance programs designed to aid students who are in need of additional financial support. Five types of financial assistance programs are available: scholarships, grants, employment opportunities, loans, and tuition plans. The federal and state governments, colleges and universities, private associations, businesses, companies, and private citizens are sources of financial assistance.

The information in this section describes both need- and non-need based financial assistance programs based on the 1999–2000 award year criteria at the time of the editing. Should federal, state, or university regulations and procedures change for the subsequent award years, the University will be responsible for administering these programs according to updated descriptions and criteria.

## PROCEDURES

### 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 office, and from other higher-ed 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 parents' and students' 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, 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 term 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 additional 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 tuition, fees, housing, food, and other authorized charges. 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 to the Office's appeals committee.

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. 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 university charges 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 to 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 anything. 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 they received. Therefore it is to the student's benefit to officially withdraw from the University. An official withdrawal from the University allows us to indicate "withdrawal" on a student's academic transcript thereby not affecting the grad point average.

Once the withdrawal date has been determined, Customer Account Services and Financial Aid will work together to determine if money must be returned to the financial aid programs. In the case of a refund, where a student's University bill has been paid by financial aid, the University will send those funds back to the financial aid programs on the student's behalf. In the case of a repayment, whereby students will actually receive a financial aid check for their other expenses, if the funds must be returned to the financial aid accounts, then students will be responsible for returning their financial aid to Western so we can return the money to the financial aid programs.

Refunds will be applied to the financial aid programs in the following order: Federal Direct Student Loans (Unsubsidized), the Subsidized), 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 added 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 the term has passed, then we must calculate the portion of the term that remain and assess the amount of financial aid to be repaid to the financial aid programs.

**TYPES**

**Grants/Need Based Scholarships**

Financial aid programs funded by the Federal and state government to provide free assistance to exceptionally needy undergraduate students.

**Federal Pell Grant** provides grants ranging from $400 to $3,125 per academic year to students who have not obtained a bachelor's degree.

**Federal Supplemental Educational Opportunity Grant** provides grants ranging from $200 to $1,200 per academic year to students who are Michigan residents and 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 the Federal and state government 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 ends:

**Federal Perkins Loan** allows needy 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, EFC, grade level, and other resources received. 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 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, EFC, 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 9.0 percent. The annual amount is dependent upon cost of attendance and other resources received. Repayment of interest and principal payments are due within 60 days of the last disbursement of the loan. 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 Parent Loan (PLUS)** is a program not based on need and allows parents of dependent students to borrow funds on an annual basis with a variable interest rate capped at 9.0 percent. The annual amount is dependent upon cost of attendance and other resources received. Repayment of interest and principal payments are due within 60 days of the last disbursement of the loan. 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 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 exist. The Student Employment Office actively recruits both on- and off-campus employment, including community service, opportunities. Students may review the jobs listed with the service in Room A-100, Ellsworth Hall or on the web at http://jobs.dosa.wmich.edu. Openings include food service and clerical positions of all levels, retail sales positions, and technical positions requiring computer science skills.

**Short-Term Loan Program** provides emergency short-term loans to Western enrolled students. Both graduate and undergraduate students who have no financial obligations to the University may apply for loans at the Financial Aid office. Loans average $300.00, are charged a simple interest rate of 5 to 7 percent, and require repayment generally in thirty days.

**Loan Funds**

- **A.A.U.W. Nursery Education Loan Fund**
- **A. Robert Anderson Memorial Loan Fund**
- **A.USCO Loan Fund**
- **American Business Club of Kalamazoo**
- **A. U. W. Nursery Education Loan Fund**
- **Amelia Biscomb Memorial Loan Fund**
- **Angel Caruso Memorial Loan Fund**
- **Associated Women Student Loan Fund**
- **Associated Women Student Loan Fund**
- **A. U. W. Nursery Education Loan Fund**
- **Roger Bennett Memorial Fund**
- **Amelia Biscomb Memorial Loan Fund**
- **William R. and Emma Wales Brown Student Loan Fund**
- **Ernest Burnham Rural Loan Fund**
- **Chaplain Student Loan Fund**
- **Class of 1936 Loan Fund**
- **College of Applied Sciences Loan Fund**
- **Communications Arts and Sciences Loan Fund**
- **Delta Kappa Gamma Alpha Psi Loan Fund**
- **Delta Sigma Theta Loan Fund**
- **Vlada and Irene Dimac Loan Fund**
- **Disabled Student Services**
- **Florida East Eckerd Loan Fund**
- **Michael Finley Memorial Loan Fund**
- **Foreign Student Aid Loan Fund**
- **James Gardner Memorial Loan Fund**
- **A. Robert Anderson Memorial Loan Fund**
- **A. U. W. Nursery Education Loan Fund**
- **American Business Club of Kalamazoo**
- **A. U. W. Nursery Education Loan Fund**
- **Roger Bennett Memorial Fund**
- **Amelia Biscomb Memorial Loan Fund**
- **William R. and Emma Wales Brown Student Loan Fund**
- **Ernest Burnham Rural Loan Fund**
- **Chaplain Student Loan Fund**
- **Class of 1936 Loan Fund**
- **College of Applied Sciences Loan Fund**
- **Communications Arts and Sciences Loan Fund**
- **Delta Kappa Gamma Alpha Psi Loan Fund**
- **Delta Sigma Theta Loan Fund**
- **Vlada and Irene Dimac Loan Fund**
- **Disabled Student Services**
- **Florida East Eckerd Loan Fund**
- **Michael Finley Memorial Loan Fund**
- **Foreign Student Aid Loan Fund**
- **James Gardner Memorial Loan Fund**
- **A. Robert Anderson Memorial Loan Fund**
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- **American Business Club of Kalamazoo**
- **A. U. W. Nursery Education Loan Fund**
- **Roger Bennett Memorial Fund**
- **Amelia Biscomb Memorial Loan Fund**
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- **Foreign Student Aid Loan Fund**
- **James Gardner Memorial Loan Fund**
- **A. Robert Anderson Memorial Loan Fund**
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- **A. U. W. Nursery Education Loan Fund**
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- **James Gardner Memorial Loan Fund**
Judity H. Halseth
Marie Harik Loan Fund
Harris-Bigham Loan Fund
Leroy H. Harvey Memorial Loan Fund
Eunice E. Herald Home Economics Loan Fund
Deldea M. Herman Debate Loan Fund
Hillites Buyers Guide Loan Fund
Alfred Ho Loan Fund
John C. Honors College Fund
Honors College Loan Fund
Home Economics Memorial Loan Fund
Donald Huizenga Memorial Loan Fund
Donna S. Ikeda Loan Fund
Marie Harik Loan Fund
Alfred Ho Loan Fund
Eunice E. Herald Home Economics Loan Fund
Honors College Loan Fund
Frank Fatzinger Memorial Loan
Frewburn W. James Loan Fund
Rev. B. Moses James Memorial Loan Fund
John Jenkins Memorial Loan Fund
Walter Larry Jenkins Memorial Fund
Gordon O. Johnson Loan Fund
Kalamazoo Area Chapter MAEDC Loan Fund
Kalamazoo Ladies’ Library Association Loan Fund
Kalamazoo Motor Freight Loan Fund
Alice J. Kauffman Loan Fund
Jeremy E. Keas Loan Fund
Freda and Martin Kelley
Donald G. and Mildred Kidder Loan Fund
Kwans Educational Aid Fund
The Dr. Radford Kykendall Memorial Loan Fund
Carleton Lee Memorial Fund
Alice Louise Lefevre Memorial Fund
Elizabeth E. Lichy Loan Fund
Marvle F. Lichy Student Loan Fund
David E. Ling Loan Memorial Fund
Larry G. Lochner Memorial Fund
M. Dezenzer Outhenlen Short Term Loan Fund
Rayn W. Lower Loan Memorial Fund
Charles H. Maher Loan Fund
R. C. Mahon Foundation Loan Fund
Mildred A. Memorial Loan Fund
Jean G. Malmstrom Loan Fund
Mathematics Faculty Memorial Loan Fund
William McCracken Memorial Loan Fund in
Mexican-American Loan Fund
Migrant Student Loan Fund
Frederick W. Miholich Memorial Fund
Frederick W. Miholich Memorial Fund for
Special Education
Muskogee County Retired Teachers
Association Loan Fund
Charles S. Nady Memorial Loan Fund
Occuptational Therapy Fund
Omnibus Loan Fund
Dr. Gerald Osborn Memorial Loan Fund
Panhellicen (Rochester) Loan Fund
Panhellicen (Detroit) Loan Fund
Panhellicen WMU Council Loan Fund
Truman A. Pascoe Memorial Fund
Ray C. Pellet Memorial Loan Fund
PIMA (Michigan Division) Loan Fund
Archie S. Potter Memorial Fund
Douglas V. Ratcliffe Memorial Loan Fund
Sophia Reed Loan Fund
Nelise N. Reid Memorial Loan Fund
Ralph A. and Vivianne C. Robinson Memorial Loan Fund
Evelyn Underwood Rogers Loan Fund
School of Public Affairs/Administration Loan Fund
Dr. Mike L. Sebalot Short Term Loan Fund
Rotary Student Loan Fund
Marion I. Siegel Memorial Loan Fund
Marion J. Sherwood Memorial Loan Fund
Katherine Shuver Loan Fund
Sigma Alpha Lambda Memorial Fund
Sigma Tau Gamma Memorial Loan Fund
James N. Sleep Memorial Loan Fund
Dorothy Sage Snyder Loan Fund
J. Towner Smith Loan Fund
R. Franklin Smith Memorial Loan Fund
Southwestern State Employees’ Credit Union Loan Fund
Marion R. Spear Occupational Therapy Fund
George Sprau Loan Fund
Kenneth H. Squires Memorial Loan Fund
Mr. and Mrs. J. Fred Staley Fund
State D.A.R. Scholarship Loan Fund
Helen Statler Fund
Elaine Louise Stevenson Scholarship Loan Fund
Stone D.A.R. Student Loan Fund
Ron Strasser Memorial Loan Fund
Student Loan Fund
Student Service Emergency Loan Fund
Marion Tanig Memorial French Loan Fund
TAPPI (Kalamazoo Valley Section) Loan Fund
Cora Teal Loan Fund
Adrian Trimpe Distributive Education Loan Fund
C.N. Van Deventer Loan Fund
University Dames of WMU Loan Fund
Dr. Charles Van Riper Speech Pathology and
Audiology Fund
Waldo-Feather-Frazier Loan Fund
Dwight B. Waldo Memorial Fund
Walter Wegerly Scholarship Loan Fund
James A. Welch Foundation Loan Fund
Mary Howe Watt Student Loan Fund
Helen and Bernard Weisberg Loan Fund
WMU Language Department Loan Fund
WMU Raper Technology Alumni Association
Loan Fund
WMU Parents Association Loan Fund
WMU Southern California Alumni Loan Fund
WMU Speech Loan Fund
Howard Wolfe Loan Fund
W. Dean Worden Loan Fund
Crystal Worner Memorial Fund
WSA-GSAC Loan Fund

WMU Scholarships for
Beginning Freshmen

MEDALLION SCHOLARSHIP PROGRAM
Through the Medallion Scholarship Program, the WMU Scholarship Committee selects
receipeini for one of the following three
scholarships:

Medallion Scholarship
The Medallion Scholarship, the University’s most prestigious scholarship for new freshmen, exemplifies
Western’s commitment to recognize and encourage superior academic achievement.
Medallion scholars currently receive $32,000,
awarded $8,000 each year for up to four
years. For 1999-2000, Western awarded 23
Medallion Scholarships. Some Medallion scholarships carry the name of the donor and
are awarded to students entering 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 $24,00;
$6,000 per year for up to four years.

WMU Academic Scholarship
This scholarship has a current value of $4,800;
$1,200 is awarded per year for up to four
years. For 1999-2000, Western awarded 15 WMU Board of
Trustees Scholarships.

WMU Distinguished Community College Scholarship
A minimum of ten WMU
Distinguished Community College Scholarships 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 3.75 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.

WMU Commnity 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, selected by a Michigan
Community College President, 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
Transfers who are Phi Theta Kappa
members in good standing are eligible for this
$3,000 ($1,500/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.

Programs for International Students
International students may 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. This scholarship is a one-time, $1,000 scholarship for the
freshman year. In 1999-2000, 2,365
International Scholarships were awarded to
students with at least a 3.5 high school GPA
and an ACT score of at least 20 who were
not eligible for scholarships through the Medallion
Scholarship Programs.
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 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 sponsored by the Honors College, the student does not need to be a member of the Honors College in order to qualify for an award.

The selection of awardedes 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 scholarship. Awarded each fall and winter semester, the program 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 fall/winter semester academic year.

Clifford and Ella Chapman Distinguished Senior Scholarship

This award established in 1964 by Clifford and Ella Chapman, longtime friends of Western Michigan University, provides the funds for this scholarship program. Western students who have achieved senior classification and have a grade point average of 3.5 or above may apply for a $200 winter 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 up to $500 per semester for adult learners who have had a significant break in education. Awards are given on the basis of need and/or academic achievement.

To be eligible, undergraduate students must be enrolled for three to eleven credit hours and have a 2.5 grade point average. Graduate students may be enrolled for two to five 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 for an application form.

WMU College and Departmental Scholarships

College of Arts and Sciences

Anthropology

The Robert F. Maher Scholarship in Anthropology is awarded annually to one or more graduating seniors or graduate students who demonstrate academic ability and promise for the future. Winners of the award are determined by the faculty of the Anthropology department. The awards are announced at a small ceremony which takes place in April. The award was established in honor of Robert F. Maher who taught at the University for thirty years, and who was the founder and first Chairman of the Anthropology Department.

The James A. Clifton Prize Essay Award for the best student paper written in Socio-cultural Anthropology is presented annually to the student who writes the best paper in Socio-cultural anthropology in that year. Both undergraduate and first year graduate student papers will be considered, but preference will be given to undergraduate papers. In addition preference will be given to papers dealing with North American Indians, but other Socio-cultural anthropology papers will be considered. Students should notify their instructor of their wish to have a paper considered for the award. The selection committee will be made up of faculty from the Anthropology Department. For further information contact the Chair of the Anthropology Department.

The Jennifer A. Wenger Memorial Study/Work Abroad Fund — Established by her parents this fund honors Jennifer C. Wenger who received a B.A. from WMU in 1992 and who died in a tragic automobile accident later that year. The award may be utilized for study, travel or work abroad during the academic year or during the summer. The award is open to any full-time student, but preference will be given to a female recipient majoring first in anthropology or sociology with a focus on women's studies, or if there is no candidate in that area, must be someone with a major or minor in Women's studies and any other 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 the study abroad experience at WMU. This award is administered by 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 department, by her husband, is available to upperclass biology 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 Hinde 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 status who has completed at least three courses in 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 Margaret Thomas Du Mond Scholarship 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 status who has completed at least three courses in 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.

Hazel Winick Botany and Ecology Award—Sponsored by the Kalamazoo Garden Council, this award of $500 is available to upperclass biology majors with a project in the areas of botany or ecology. Contact the Biological Sciences Office in Hoekje or Wood Hall for information.

The Distinguished Biology Major Senior Award—The biology faculty selects one or two outstanding seniors for this award annually. Biology majors with a grade point average of 3.5 or above are considered; no application is required.

The Distinguished Biomedical Sciences Major Senior Award—This award is given to the student judged, by the Biological Sciences faculty, to be the outstanding senior biomedical sciences major; no application is required.

The Preprofessional Award in Biological Sciences—This award is given to the student deemed, by the Biological Sciences faculty, to be the outstanding junior biomedical sciences major; no application is required.

Chemistry

The William McCracken Award—Named in honor of the first head of the chemistry department, is given to a student who, in the opinion of the chemistry staff, has shown the greatest aptitude in the field of basic chemistry.

The American Institute of Chemists Award—This award is given to a student majoring in chemistry who has demonstrated scholastic achievement, leadership, and character.

The Merck Index Award—The award is given to an outstanding senior in chemistry who has a good record in biochemistry.

The Analgesic Award—Sponsored by the American Chemical Society, is given to a junior who is outstanding in analytical chemistry.

The Aditi Kanai 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 given to a senior majoring in chemistry who has demonstrated scholastic achievement, leadership, and character.

The Merck Index Award—This award is given to an outstanding senior in chemistry who has a good record in biochemistry.

The Analgesic Award—Sponsored by the American Chemical Society, is given to a junior who is outstanding in analytical chemistry.

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FINANCIAL ASSISTANCE AND SCHOLARSHIPS

Economics

President's Award—This award is given annually to the outstanding undergraduate student in economics. The award varies from year to year. This award is given annually to the runner-up of the President’s Scholar Award.

English

Winners of all English Department awards and scholarships are announced at an annual awards ceremony in April. Nominations and applications—major—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 to the Department of our first chairman, George Sprau, from 1917 to 1946.

The George W. Baker Scholarship—This $1,000 scholarship, 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, provided through the generosity of Jean and Vincent Malmstrom, is 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 competence in the teaching of the English language—it’s grammar an structure, its. 

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.

One 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, daring, forcefulness, and enthusiasm. These are qualities prized by Ralph Miller, who is remembered as a splendid teacher. This award is a way of preserving the memory of one of the finest of the English department instructors.

The Patrick D. Hagerty Promising Scholarship in English Award—Preference is given to second semester sophomores or 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 at Western Michigan University while studying Shakespeare’s work during the current academic year, or in the preceding spring and summer sessions, are eligible.

The Lawrence, Clara, and Evelyn E. Burke Scholarship—The recipient must be in the journalism curriculum and must have achieved a minimum GPA of 3.0. In addition, the student must have evidence of outstanding writing ability, 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—Contribution 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 some years, 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 Studies Scholarship—This $300 annual award is open to both environmental science majors who have completed 15 hours of courses that count toward the major and an environmental studies major. Applicants must exhibit high scholastic ability and strong potential 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 made possible by the Blue and Gold Honors Program at Western Michigan University.

Victor Coutant Award in Classics—A generous gift in memory of Dr. Victor Coutant, professor emeritus of modern and classical languages, has made it possible for the Department of Foreign Languages and Literatures to present an annual cash award to an outstanding student in Latin or Greek, as selected by the faculty of the Classics Section of the department. Performance in mythology, ancient history, and/or ancient philosophy may also be considered in the selection of the recipient of the award.

Departmental Section Awards—The following awards are presented annually by the individual sections of the Department of Foreign Languages and Literatures:

French—the Prix d’Honneur, par l’Ambassadeur de France (given by the French Embassy to the outstanding student of French in the graduate and undergraduate programs) and, the Prix de l’Alliance Francaise; the Frances E. Noble Prize for Excellence in French; German—the Preis der Bundesrepublik; Japanese—the Excellence in Japanese; Russian—the Excellence in Russian Award; Spanish—several awards for excellence in Spanish.

Herb B. Köster Scholarship in Spanish—This annual award has been established in memory of the late Professor Köster, former head of the Spanish Section. The recipient is selected by the Spanish faculty. Academic performance in Spanish and overall academic achievement are considered in the selection.

The John P. and Nora Everett Award—This award is presented to a senior student showing outstanding promise as a teacher of secondary school Spanish. Selection is based on overall academic achievement in Spanish and performance in methods courses and student teaching.

The Grover Bartow Award—This award is presented annually to a junior mathematics or statistics major in recognition of outstanding

Mathematics and Statistics

The A. Bruce Clark Senior Award—This award is presented to an outstanding senior mathematics or statistics major in recognition of excellence in their field of study and of their potential for accomplishments in the future.

The John P. 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 academic achievement in mathematics and performance in methods courses and student teaching.

The Grover Bartow Award—This award is presented annually to a junior mathematics or statistics major in recognition of outstanding

Geology

Department of Geology Development Fund Scholarships in geology and geophysics are available in variable amounts each year. The grover Bartow Award—This award is presented to an outstanding senior mathematics or statistics major 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 an outstanding senior mathematics or statistics major in recognition of excellence in their field of study and of their potential for accomplishments in the future.

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The James H. Powell Award in Statistics—This award is presented to an outstanding senior mathematics or statistics major in recognition of excellence in their field of study and of their potential for accomplishments in the future.
achievement in the study of mathematics or statistics.

The Erik A. Scheineman 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 potential for future contributions in the mathematical sciences. One of the two awards is normally designated for a student in the Mathematics Education area.

Freshman-Sophomore Prize Competition Award—These awards are presented annually to those students having the highest scores on the Freshman-Sophomore Prize Examination 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 M. Unger Memorial Scholarship Award—This award was established in 1993 by the Kalamazoo University High School Class of 1965 in honor of their classmate Robert M. Unger. Each year a junior mathematics or statistics 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 graduate students majoring in mathematics, statistics, or mathematics education, based on financial need. First time awardees will be freshmen or sophomores. The scholarship is renewable for qualified applicants for a total of four years and must be used toward WMU tuition, fees and textbooks. The amount of the scholarship award and the number of award winners shall be determined on a year-to-year basis by the selection committee of the Mathematics and Statistics Department.

The Colonel Charles E. Bayliss Scholarship—This award is about $1,500 per year for tuition and textbooks. It is offered to full-time undergraduate mathematics and statistics majors. The award is based solely on academic merit. Application forms can be obtained from the Department of Mathematics and Statistics Office.

Physical Science

The Paul Rood Scholarships—The scholarships of $1,000 for four years are available for physics majors. These scholarships are based on the student's academic achievement and interest in physics irrespective of financial need. Recipients of these scholarships are also eligible for other forms of financial aid including other WMU scholarships. Application forms may be obtained from the Department of Physics.

The Robert L. Nichols Physics Scholarship—This scholarship is an annual award and is available to undergraduates who have declared a major in physics and have achieved an overall grade point average of 3.0. Renewal of this award is based on academic performance. Application forms can be obtained from the Department of Physics.

The Kercher Memorial Award—This award, made possible by family and friends of a physics graduate student, is given to outstanding graduating seniors majoring in physics.

The Outstanding Physics Student Award is presented each semester to the outstanding student in each of the following introductory physics sequences: Physics 107, 113, 115, 205, 207, and 309.

Political Science

Arend J. Elsasser Memorial Award—This scholarship has been established by the League of Women Voters of the Kalamazoo area in memory of Aren J. Elsasser, who gave faithful service to this organization and contributed to the Kalamazoo community. The award, which normally will normally be about $400, is open to undergraduate or graduate students in political science at Western Michigan University. Applicants must have a minimum grade point average of 3.0 in political science and overall, and must have second semester junior standing by the end of the term in which the award is given. Preference will be given to those with demonstrable community service and/or political activity. Contact the chair of the political science department for information and applications.

D. Chilling Junior and Senior Awards—These annual awards are presented to outstanding political science majors for excellence in scholarship and academic performance. The divisional scholarship is divided into two awards: one for the outstanding junior and the other for the distinguished graduating senior. The fund that supports the scholarship was established by Mrs. Zoa D. Shilling in memory of her husband, Dr. D. C. Shilling, the first chair of the political science department.

Zoa D. Shilling Junior and Senior Awards—These annual awards are presented to outstanding majors in public administration in political science for excellence in scholarship and academic performance. The scholarship is divided into two awards: one for the outstanding junior, and the other for the distinguished graduating senior. The fund that supports the scholarship was established by Mrs. Zoa D. Shilling because of her interest in helping political science students and encouraging scholarly achievement. The fund is also memorial to her husband, who was the first chair of the political science department.

Mark Denerfield Memorial Endowed Scholarship—An annual award to a beginning senior majoring in political science who has met the basic requirements of, and demonstrated superior academic performance. The recipient is also required to compile a record of community service and service to others. The fund that supports the scholarship award was established in memory of Mark Denerfield, a graduate of the Department of Political Science, who died in 1985.

Howard Wolpe Assistance Scholarship—Two annual awards available to seniors majoring in political science who are U.S. citizens and, preferably, residents of the State of Michigan. One of these scholarships is designated for students undertaking foreign study. Students must have demonstrated overall academic excellence at Western Michigan University and, in particular, in political science. The awards were established by former WMU student Howard Wolpe, who endowed the Howard Wolpe Fund for the Study of Politics which supports the awards.

Stanley S. and Helenan S. Robin Scholarship Award—This award for academic excellence in the fields of Sociology and Political Science has been established to honor Stanley and Helenan Robin, Professors Emeritus, respectively of Sociology and Political Science. The award is given in alternating years by the Departments of Sociology and Political Science. The award is granted by the department to exceptional undergraduates majoring in that department who are in the final semester of their junior year. The award is made on the basis of academic achievement, disciplinary and professional accomplishment, and assessed potential for and commitment to advanced graduate work in the disciplines of either sociology or political science.

Psychology

Departmental apprenticeships and assistantships—The Department of Psychology offers undergraduate teaching assistantships to advanced undergraduate students demonstrating academic excellence and leadership ability within the department's program. Further information may be obtained from the psychology department. The deadline for all scholarship applications is the first week of November of each academic year.

Anne C. Mounds Memorial Scholarship—A scholarship awarded annually to an outstanding minority undergraduate major in psychology.

Psychology Alumni Award—A scholarship awarded annually to a psychology major of at least junior standing who has demonstrated academic achievement and professional responsibility in psychology.

Frederick P. Gault, Sr. Memorial Award—A scholarship awarded annually to a Native American student in the pre-psychology or psychology major.

Sociology

Leonard C. Kercher Award—Through the generosity of Dr. Kercher, founder and long-time head (1940-72) of the Department of Sociology, and friends, assistantships of at least $400 a semester are available for outstanding upperclass sociology and criminal justice majors each year.

Undergraduate assistantships—The department awards up to ten assistantships during the fall and winter semesters each year to upperclass sociology and criminal justice majors who wish to become more involved in the department's activities and projects. These students receive a stipend, and are assigned to work for a faculty member or on a department project.

Stanley S. and Helenan S. Robin Scholarship Award—This award for academic excellence in the fields of Sociology and Political Science has been established to honor Stanley and Helenan Robin, Professors Emeritus, respectively of Sociology and Political Science. The award is given in alternating years by the Departments of Sociology and Political Science. The award is granted by the department to exceptional undergraduates majoring in that department who are in the final semester of their junior year. The award is made on the basis of academic achievement, disciplinary and professional accomplishment, and assessed potential for and commitment to advanced graduate work in the disciplines of either sociology or political science.

College of Aviation

Scholarships from Outside the College of Aviation

Applicants must be enrolled in an aviation program. Criteria details and applications available through the College of Aviation.

American Association of Airport Executives—Junior/senior status, 3.25 GPA, $5,000, apply by March 31.

ACPA Air Safety Foundation—Two scholarships available:

• McAllister Memorial Scholarship—Sophomore status at time of application, $1,000, 3.0 GPA, apply by March 31.

• Donald Burnside Memorial Scholarship—Sophomore status at time of application, $1,200, 3.0 GPA, apply by March 31.

National Business Aviation—Junior/senior status, enrolled in professional pilot program, apply by November 1.
West Michigan Business Aircraft Foundation—Enrolled in professional pilot program, $1,000, applicants selected by aviation faculty during winter semester.

Scholarships within the College of Aviation

Duke Harrah Memorial Scholarship—Juniors and seniors enrolled, $400, 3.0 GPA, application deadline is January 15 each year.

W. K. Kellogg Foundation Women and Minority Aviation Scholarship—Full tuition, room, board, plus $500 per year for a four-year undergraduate education. Applicants must be enrolled in the Haworth College of Business and have a minimum 3.0 GPA. Application deadline is January 15 each year.

Haworth College of Business

General scholarships open to all students in the Haworth College of Business—Applications available January 1 each year, 250 awards available each year, Application deadline is February 1 each year.

Old Kent Bank Scholarship—This award is available in memory of Robert M. Rogge, is given to a student enrolled in a major in the Haworth College of Business. The award is based on academic achievement and financial need. Applicants must meet the academic requirements of the Haworth College of Business.

Accountancy Scholarship—A scholarship is awarded to a student majoring in accounting and who meets the academic requirements of the department. Preference is given to students who have demonstrated financial need.

First of America Minority Scholarship—A scholarship is awarded to a minority student who is enrolled in the Haworth College of Business. The award is based on academic achievement and financial need. Preference is given to minority students who have demonstrated financial need.

Herman Under Award—A scholarship is awarded to a student enrolled in the Haworth College of Business. The award is based on academic achievement and financial need. Preference is given to students who have demonstrated financial need.

Bernadine Branchaw Award—A scholarship is awarded to a student enrolled in the Haworth College of Business. The award is based on academic achievement and financial need. Preference is given to students who have demonstrated financial need.

Army Reserve Officers Scholarship—A scholarship is awarded to a student enrolled in the Haworth College of Business. The award is based on academic achievement and financial need. Preference is given to students who have demonstrated financial need.

Robert A. Welborn Endowed Scholarship—A scholarship is awarded to a student enrolled in the Haworth College of Business. The award is based on academic achievement and financial need. Preference is given to students who have demonstrated financial need.

First of America Minority Scholarship—A scholarship is awarded to a student enrolled in the Haworth College of Business. The award is based on academic achievement and financial need. Preference is given to students who have demonstrated financial need.

Accountancy Scholarship—A scholarship is awarded to a student majoring in accounting and who meets the academic requirements of the Department of Accountancy. Preference is given to students who have demonstrated financial need.

First of America Minority Scholarship—A scholarship is awarded to a student enrolled in the Haworth College of Business. The award is based on academic achievement and financial need. Preference is given to students who have demonstrated financial need.

Herman Under Award—A scholarship is awarded to a student enrolled in the Haworth College of Business. The award is based on academic achievement and financial need. Preference is given to students who have demonstrated financial need.

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Accountancy Scholarship—A scholarship is awarded to a student majoring in accounting and who meets the academic requirements of the Department of Accountancy. Preference is given to students who have demonstrated financial need.

First of America Minority Scholarship—A scholarship is awarded to a student enrolled in the Haworth College of Business. The award is based on academic achievement and financial need. Preference is given to students who have demonstrated financial need.

Herman Under Award—A scholarship is awarded to a student enrolled in the Haworth College of Business. The award is based on academic achievement and financial need. Preference is given to students who have demonstrated financial need.
The following Food Marketing scholarships are awarded annually during the winter semester for the following academic year to declared food marketing majors whose cumulative grade point average is at least 2.5. Consideration is also given to a demonstrated career interest in food marketing, work experience, participation in University and community activities, need, and faculty recommendations. Application forms can be obtained from the Marketing Department and must be returned by February 15.

**Sid Brooks Memorial Scholarship**—A renewable scholarship of at least $1,000 given in honor of the late director of trade relations with Chicago-based food companies. Preference will be given to entering freshmen with a declared major in food marketing, or to family of employees or customers of Chatalee Farms.

**Distinguished Order of Zerocrats Scholarship**—Up to five scholarships of $1,000 each given through funds donated by the Distinguished Order of Zerocrats to honor the frozen food industry. Preference will be given to entering freshmen with a declared major in food marketing, or to family of employees or customers of Chatalee Farms.

**Jules W. Englander Memorial Scholarship**—One or more renewable scholarships of at least $1,000 given to food marketing students affiliated with Chicago-based food companies. Preference will be given to entering freshmen with a declared major in food marketing, or to family of employees or customers of Chatalee Farms.

**Sid Brooks Memorial Scholarship**—A renewable scholarship of at least $1,000 given in honor of the founders of Chatalee Farms. Preference will be given to entering freshmen with a declared major in food marketing, or to family of employees or customers of Chatalee Farms.

**Chrystal I. Grady Scholarship—**A $500 scholarship is available in the Dean's Office, College of Education, 2306 Sangren Hall, or by telephoning 387-2966.

**Health, Physical Education and Recreation**

**Harriet Kiser Creed Scholarship**—One (1) available, $1,000.

**Sidney P. Johnston Award**—One (1) available, $1,000.

**Sidney A. Miles Award**—One (1) available, $1,000.

**Katharine Pratt Burrell Education Fund**—Four (4) awards of $500-$1,000 each.

**Robert and Irene (Smith) Davies Education Fund**—Four (4) awards of $500-$1,000 each.

**Jane Blackburn Memorial Scholarship for Early Childhood Education**—One (1) award of $500.

**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 the late William O. Haynes, Associate Professor Emeritus of Food Marketing.

**S. C. Johnson Wax Scholarship**—One or more renewable scholarships of at least $1,000 awarded on the basis of scholarship and need in honor of the late S. C. Johnson, President Emeritus of the Johnson Wax Company.

**Julie Krawitz Memorial Scholarship**—One or more renewable scholarships of at least $1,000 awarded on the basis of scholarship and need in honor of Julie Krawitz, 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 $3,000 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 served between the recipient's junior and senior years.

**Nabisco Foods Group Scholarships**—Two $2,000 scholarships sponsored by the Nabisco Foods Group.

**Richard Nesichich Scholarship**—A renewable scholarship of at least $1,000 awarded on the basis of scholarship and need in honor of Mr. Richard Nesichich, 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.

**Military Science**

**Military Science R.O.T.C. Scholarships**—Three- and two-year scholarships are available to qualified male and female students. Each scholarship provides up to $36,000 in tuition monies, and a flat rate for books, uniforms, and lab fees ($450), and a subsistence allowance of $150 a month (up to $1,500 per year) while school is in session. Additionally, WMU provides R.O.T.C. scholarship recipients with a $1,000 annual incentive award. It is not a requirement to be enrolled in R.O.T.C. to apply for a scholarship.

General qualifications are as follows: The student must be a United States citizen, be enrolled as a full-time student in any major course of study leading to a baccalaureate degree, meet medical requirements, be at least seventeen years of age by October 1 of the year of enrollment as a scholarship cadet and be under twenty-seven years of age on June 30 of the calendar year in which the individual is scheduled to graduate (extensions to this age limit granted to veterans).

Scholarship boards begin in January of each year and are normally closed out at the end of February of each academic year and three-year scholarships. Contact the Department of Military Science at 387-8122 or 387-8120 for more specific information.

All advanced-course R.O.T.C. cadets receive $150 a month while school is in session (up to $1,500 per year).

**College of Education**

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

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

**Kathleen Roeder Memorial Scholarship**—One (1) award of $500.

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

**Lenore T. Thomas Scholarship**—One (1) award of $500.

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

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

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

**Dorothy H. and Cora Hurst Charles Scholarship**—One (1) award of $500.

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

**Funds for the Advancement of Minorities in Education (FAME)**—Five (5) awards of full tuition each.

**Crystl Grady Home Economics Scholarship**—One (1) award of $100.

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

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

**Nabisco Foods Group**—One (1) award of $1,500.

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

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

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

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**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**

**Harriet Kiser Creed Scholarship**—One (1) available, $1,000.

**Howard E. Thompson Endowed Scholarship Fund for Physical Education**—One (1) available, $1,000.

**Home Economics**

**Crystl I. Grady Scholarship**—An endowment from the estate of Crystl I. Grady has made possible an annual scholarship to students majoring in curriculum within home economics. Information is available from the Department of Family and Consumer Sciences.

**Neil L. Schoenhals and Leta C. Schoenhals Undergraduate Scholarship—**Annual award of $500 presented to an outstanding junior or senior student majoring in Industrial Arts. Full-time students with a minimum 3.0 grade point average are encouraged to apply. Information available from the Department of Family and Consumer Sciences.

**Norman E. Slack Endowed Scholarship—**An endowed scholarship made possible through personal contributions from Norman E. Slack, Emeriti, friends and relatives, and WMU alumni. Annual scholarship award will be based primarily on financial need. Those eligible will be junior or senior students majoring in any curriculum within the Department of Family and Consumer Sciences. Information available from the Department of Family and Consumer Sciences.

**College of Engineering and Applied Sciences**

**College of Engineering and Applied Sciences Scholarship Fund**—A limited number of scholarships is awarded each year by the College of Engineering and Applied Sciences to outstanding students enrolled in four-year curricula within the college. Funds for this program are made available through donations of alumni and friends of the University. Apply to the College of Engineering and Applied Sciences.

**The George E. Kohrman Scholarship**—The George E. Kohrman Scholarship is designed to recognize a full-time student who is majoring in one of the curriculums within the College of Engineering and Applied Sciences and who is completing the final year of his or her bachelor's degree. Eligible candidates must have at least a 3.25 grade point average in all course work approved to reach senior status. Other factors which will be considered are special aptitudes in one of the technological areas of the College, financial need of the
candidate, demonstrated leadership ability and participation in school or community activities. One-half of the $1,500 scholarship shall be awarded at the beginning of the fall semester and the balance at the beginning of the winter semester. Application for this scholarship award should be made to the College Scholarship Committee.

Construction Engineering, Materials Engineering, and Industrial Design Department

Robert B. Day Memorial Award—Each spring, the department presents an award to an outstanding student involved in materials engineering or materials science. The award is given to a student who has demonstrated purpose and commitment to one of these areas. These awards are given in honor and recognition of the late Dr. Day, who actively supported the metallurgical programs during his tenure as a 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 sophomores) in Materials Engineering/Materials Science. Apply to the Department of Construction Engineering, Materials Engineering, and Industrial Design.

Materials Publication Award—This scholarship (from $200 to $600) is awarded annually to graduate and undergraduate students in Materials Engineering/Materials Science in conjunction with the publication of 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.

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.

National Science Foundation Research Experience for Undergraduate Students Awards—Deadline for application is February, annually. Details and applications are available through the Department of Construction Engineering, Materials Engineering, and Industrial Design.

Air Force National Research Fellows—This award is limited to graduate students who have completed at least two years of full-time undergraduate study. Applicants must be U.S. citizens, be willing and able to accept an assignment to perform research in national security-related fields, and be pursuing course work in a field of study related to national defense. Applications are available through the Department of Construction Engineering, Materials Engineering, and Industrial Design.

Electrical and Computer Engineering

The E. Bruce and Eleanor Pierce Dwyer Scholarship—This award is limited to a full-time undergraduate student enrolled in the College of Engineering and majoring in Electrical or Computer Engineering. The award is $1,000. Details and applications are available through the Department of Electrical and Computer Engineering.

Industrial and Manufacturing Engineering

American Foundrymen's Society Scholarship—The award is given annually to one student in the mechanical engineering curriculum, but includes other automotive areas. Awards may be renewed, based on the student's achievement and the recommendation of the scholarship committee. Application to the Department of Industrial and Manufacturing Engineering.

Foundry Educational Foundation Scholarship—The Foundation offers a number of scholarships each year to any technical student having a direct interest in the cast metals industry. A student must have AFS registration completed by November 1 each year to qualify. Apply to the Department of Industrial and Manufacturing Engineering.

H.H. Harris Foundation Scholarship—The foundation has made funds available to students in technical programs with an interest in the cast metals industry. Awards range from $300 to $2,000. Apply to the Department of Industrial and Manufacturing Engineering.

Lloyd Hutt Memorial Scholarship—This scholarship is awarded annually to a full-time undergraduate student by the Emergency Associates of the Society of Die Casting Engineers. Application is available from the Department of Industrial and Manufacturing Engineering.

Society of Manufacturing Engineers Scholarship—This scholarship is awarded to students who have been involved in promoting manufacturing education in secondary and middle schools. Apply to the Department of Industrial and Manufacturing Engineering.

Society of Plastics Engineers Scholarship—The Society of Plastics Engineers offers one grant each year, in the amount of $100, to a WMU student enrolled in the College of Engineering and majoring in Polymer Engineering and high school participation in extracurricular activities. The awards are $250 per year for the junior and senior years and $500 per year for the junior and senior years. Apply to the Department of Industrial and Manufacturing Engineering.

Society for Manufacturing Engineers Scholarship—This scholarship is awarded to members of the student chapter of the Society of Manufacturing Engineers. Preference is given to students who have been involved in promoting manufacturing education in secondary and middle schools. 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 a demonstrated interest and ability in liberal studies. The award is given to a student with at least 30 hours at Western Michigan University and within 30 hours of graduation. A minimum GPA of 3.0 is required. The award is made during the winter semester and the amount varies. Information on the award is available from the Department of Mechanical and Aeronautical Engineering.

The DuraMetall Corporation—Offers several scholarship 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 3.0 or higher GPA. Award is not 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 spring semester. Award is not renewable. Apply to the Department of Mechanical and Aeronautical Engineering Department.

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 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 Walworth, phone 387-8799.

Paper Technology Foundation Scholarship Funds
Albany International Corp. Scholarship
David and Doris Bossen Scholarship
Burgess Cellulose Foundation Scholarship
Mae Murdock Scholarship
Olin W. Callighan Scholarship
Carlton H. Cameron Scholarship
Cargill Incorporated Scholarship
Celanese Polymer and Specialties Company Scholarship
Champion Packaging Division Scholarship
Champion Papers Scholarship
Champion/St. Regis Scholarship
CIBA-Geigy/ Joseph A. Paciello 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.I. du Pont De Nemours and Company, Inc. Scholarship
E.I. du Pont Ti-Pure Titanium Dioxide Scholarship
E. B. Eddy Paper, Inc. - A. Richard Wagner Scholarship
Federal Pacific Board Company, Inc. Scholarship
John M. Fisher/Ts’ai Lun Scholarship
Fletcher Paper Company Scholarship
James A. Foxgover Memorial Scholarship
Foxgrover/Calden Foundation Scholarship
General Endowment Scholarship
Georgia-Pacific Alumni Scholarship
Gilman-Haer Scholarship
Philip H. Glattfeiter Scholarship
Grain Processing Corporation Scholarship
Gerald A. Hatt Scholarship
Hammermill Paper Company Scholarship
Albert S. Harmon Scholarship
Hercules Inc. Scholarship
U. M. Huber Scholarship
International Paper Company Scholarship
Raymond L. Janes/Beulol Corp. Scholarship
John F. King Family Scholarship
Perry H. King Scholarship
Dr. and Mrs. Stephen I. Kukolich Scholarship
K. A. Uno Lowgren/Orr Felt Scholarship
E. D. Marvin/Orr 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
Recknagel Scholarship
Sandpiper Scholarship
William and Martha Siekman Scholarship
Simpson Paper Company Scholarship
TAPPI/Paper Chase Scholarship
TAPPI/Pho Chan Scholarship
Tag and Label Manufacturers Institute—$1,000 to $3,000 award to sophomore through senior, awarded on the basis of 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 entering freshmen. They are awarded on basis of need and academic achievement and are renewable.

Pamphlet Techniques—Thirty national scholarships of $1000 are available to freshmen through seniors. They are awarded on academic achievement and are renewable.

Graphic Arts Technical Foundation—There are 100 national scholarships ranging from $500 to $1500 each. They are available to entering freshmen through seniors and are awarded on academic achievement and are renewable.

Specific details are available in the Printing Programs Office, 1104 Welborn 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 full-time undergraduate students, 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 Hearroon/Sommerfeld Music Theatre Scholarship, are available to full-time students in the Music Theatre Performer curriculum. These scholarships are based on talent and are renewable upon application to students maintaining a 3.0 or above average who remain active in the program.

The Beverly A. Nelson Scholarship Fund for Music Theatre is awarded to a junior preparing for a professional career in music theatre. The recipient must 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 good academic standing. One-half of
the award shall be made during the first semester/session enrollment of the senior year and one-half during the second semester/session of the senior year.

Funds for these programs 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 high school graduates, admissible to the University and enroll for the upcoming fall and winter semesters as a full-time student. Portfolios 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 Office of Undergraduate Admissions, 1406 Sangren Hall, Western Michigan University, Kalamazoo, MI 49006 or call (616) 387-2440.

Lydia Siedschlag Scholarship—Special scholarships have been established for arts students residing in Off-Campus Housing, an off-campus residence hall for women. All art majors, enrolled full-time, with a minimum GPA of 3.3, and living in Siedschlag Hall will automatically be considered. Recipients are notified prior to the Annual Art Awards Ceremony late in winter.

Art Star Awards—The Department of Art offers yearly grants-in-aid to junior and senior art majors. Based on faculty recommendations, these grants are awarded to arts students who demonstrate exceptional promise in their major(s). Recipients are selected by the art faculty and are expected to fulfill the conditions dictated by the donor. These conditions might include such things as performing in School of Music ensembles, participating in collaborative projects with musicians, or studying in Japan. Recipients are selected on the recommendation of the Art Department. The recipient, selected by a committee of Art Education faculty, is notified prior to the Annual Art Awards Ceremony in late winter. The amount of the award varies each year.

Royko Kie Scholarship—Scholarships in the amounts of $2,000 to $3,000 are awarded annually to full-time art students, enrolled in ceramics or sculpture, to study in Japan. Project and/or study proposals are due by February 1. Students are selected on the basis of their artistic achievements, merits of their submitted proposal and evidence of commitment to their project and/or discipline.

Dance

Dorothy Upjohn Dalton Young Artists’ Scholarships—These scholarships are awarded to dance majors. New dance major scholarships are given to incoming dance majors based on artistic and intellectual promise. Recipients are selected by application to the dance faculty. These scholarships are awarded to incoming dance majors who have achieved excellence in their dance participation at Western Michigan University. Dancers with Musicians Scholarship awards of $500 to $8,000 a year for students majoring in music and dance are awarded to junior or senior dance majors who have exhibited exceptional choreographic ability and musicality for proposed collaborative projects. Recipients are selected by application to the dance faculty. Awards range from $250 to $500 per semester and may be renewed provided artistic and academic excellence are maintained.

Robert Christianson Scholarships for Male Dance Majors and Ethnic Minority Dance Major Scholarships—These scholarships are awarded to new and current male or ethnic minority dance majors who demonstrate artistic and intellectual promise. Recipients are selected by application to the dance faculty. Awards range from $100 to $500 per semester and may be renewed provided artistic and academic excellence are maintained.

Outstanding Student Scholarship—These scholarships are awarded to current dance majors who are outstanding in their dance participation at Western Michigan University, based on artistic and intellectual promise and the quality of the dance program. Scholarships are given to new students based on artistic and intellectual promise. Outstanding Student Scholarships may be awarded in the following four categories: New dance major, Current dance major, Ethnic dance major, Male dance major. Awards of $1,000 are paid in two installments per academic year. Students may apply for these scholarships on an annual basis.
endowment established by retired public school educators Beulah and Harold McKee.

The Geffenied Music Scholarship recognizes a music student who demonstrates outstanding accomplishment as a jazz major. Funds are made available through donations to the scholarship program in memory of Gene Whifflet, a 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 honor of H. Glenn Henderson, professor of music from 1914 to 1956.

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

Ivory Gilmore Piano Scholarships recognize outstanding pianists. The scholarships are funded by an endowment established by Kalamazoo philanthropist Ivory Gilmore to enrich the piano program at Western Michigan University.

The Theodore Presser Foundation Scholarship is a prestigious award presented to a senior who is majoring in music at WMU. The recipient must show 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 patron. 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 music 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 1948 to 1973.

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

Audrey Ekdahl Davidson Early Music Scholarship The scholarship recognizes and 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 1956–93.

Music Therapy Graduate Student Scholarship This scholarship is awarded each year to a graduate student in music therapy who has a particularly distinguished academic record.

Questions may be directed to: Music Student Advisor, 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 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 Mary and R.E. Jackson Scholarship—This award is given to an 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 promise 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 each winter semester to receive awards the following academic year. Apply directly to the school, department, or program office in the major field of study.

Hazel and Theodore Perg Scholarship Award—These scholarships are awarded biannually to students who are enrolled in the Western Michigan University School of Nursing and who are graduates of high schools in southwest Michigan. Awards, based on financial need and academic merit, are determined by a special scholarship committee comprised of representatives of the University.

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 definite need. 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 finalists awarded of up to $2,000 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 graduate 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. The annual 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.

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. Please see the Office of international Affairs section of this catalog, pages 265–269, for a complete list of the exchange and study abroad programs and the financial assistance many of the programs provide.

President's Grants for Foreign Study—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 warded 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. 

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.
DEGREES, CERTIFICATES, AND UNDERGRADUATE CURRICULA AND MAJORS

DEGREES
The Board of Trustees, on recommendation of the President and faculty of Western Michigan University, confers the following degrees:

Bachelor’s Degrees
Bachelor of Arts
Bachelor of Business Administration
Bachelor of Fine Arts
Bachelor of Music
Bachelor of Science
Bachelor of Science in Engineering
Bachelor of Science in Nursing
Bachelor of Social Work

DEGREES, CERTIFICATES, AND UNDERGRADUATE CURRICULA AND MAJORS

Graduate Degrees
Master of Arts
Master of Business Administration
Master of Development 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 Science in Medicine
Master of Social Work
Specialist in Education
Doctor of Education
Doctor of Philosophy

CERTIFICATES
Michigan Teaching Certificates, Validity Level
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 fifth grade all subjects, kindergarten through eighth grade all subjects in a self-contained classroom; and sixth to, and including, eighth grade in the teachable minor(s) and/or minor(s) for which a subject area test has been passed.

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 required initial certificate, called 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” section below; the Temporary Vocational Authorization; and the Occupational Education certificate.

PROVISIONAL CERTIFICATE
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 that person passes both a basic skills examination and an appropriate subject area examination for each subject in which certification is granted.

PROFESSIONAL CERTIFICATE
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.

   The success of the teaching experience is determined by the State Board of Education upon recommendation of the University and of the local school district(s) in which the candidate taught.

   Experience can be accumulated through part-time (including substitute teaching) under the following pro-rating formula: one half or more of a teaching day (2½ or more clock hours) is the equivalent of one day, and 150 accumulated days is the equivalent of one year. There is no requirement that such experience be under contract, in consecutive years, be completed in Michigan, nor be completed before expiration of the Provisional certificate. All experience stays forever cumulative toward the Professional 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.

   A “planned program” is a master’s degree program, an additional subject endorsement (a major or minor program), an additional grade level program, or an eighteen hour professional development program signed by the Certification Officer. Beginning September 1, 1993, Public Act 182 of 1992 was implemented. This act requires subject area testing prior to adding additional subject or grade-level endorsement(s).

   WMU students who wish to be recommended for the Professional 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 Professional 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 as part of the candidate’s college level preparation.

OCCUPATIONAL EDUCATION CERTIFICATE
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 Education certificate.

Certification Application Procedures
The Professional and the Occupational Education certificate and the 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 Michigan college or university regardless of what other college or university may have recommended the initial Provisional certificate. Public Act 339 of 1988 requires the collection of certification fees by the Michigan Department of Education “as a condition of having the application evaluated for conformance with the application requirements.” After payment is made, the certificate will be issued by the Michigan Department of Education. Applications are available from the Certification Officer, College of Education, Sangren Hall, 616-387-3473.

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 3 years depending on the month of issuance.

Continuing certificates (issued prior to July 1, 1992 — predating the present Professional
Certification Renewal Requirements

Provisional Certificate: 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."

Professional Education and Occupational Education: Beginning July 1, 1992, persons receiving a Professional Education certificate or an Occupational Education certificate will be subject to the provisions of Rule 390.1135. 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). Three SB-CEU's are equivalent to one semester hour of credit.

PREPROFESSIONAL PROGRAMS

Preprofessional Programs

Professional Education

Pre-Architecture

Pre-Dentistry (Select a major from Liberal Education Curriculum)

Pre-Law (Select a major from Liberal Education Curriculum)

Pre-Medicine (Select a major from Liberal Education Curriculum)

Coordinate Majors: These are majors to be selected only along with a standard major.

African Studies

American Studies

Black Americana Studies

Environmental Studies

European Studies

Latin American Studies

Russian and East European Studies

WOM's Women's Studies

College of Aviation:

CURR: AGL Aviation Flight Science

CURR: MTE Aviation Maintenance and Technology

CURR: MTA Av. Min. Tech./Advanced Management

CURR: MTT Av. Min. Tech./Maintenance Management

CURR: AVA Aviation Science and Administration

CURR: AVA Aviation Science and Administration

Haworth College of Business:

CURR: BBA Pre-Business Administration

CURR: BAD Business Administration

CURR: ACT Accountancy

CURR: ADS Administrative Systems

CURR: CBS Advertising and Promotion

CURR: CIS Computer Information Systems

CURR: ECO Economics

CURR: FIN Finance

CURR: FMB Financial Management

CURR: GSB General Business

CURR: HUM Human Resource Management

CURR: ISM Information Systems Management

CURR: MGT Management

CURR: MKT Marketing

CURR: PAB Public Administration

CURR: SBM Sales and Business Marketing

CURR: STB Statistics

College of Education:

CURR: EED Elementary Education

CURR: EGM Elementary Education

CURR: EMM Elementary Minors

CURR: FSA Food Service Administration

CURR: FST Family Studies

CURR: PST Family Studies

CURR: HHR Health, Physical Education and Recreation

CURR: CHE Community Health

CURR: PEX Exercise Science

CURR: REC Recreation

CURR: IET Industrial Education Technology

CURR: IDT Industrial Technology

CURR: TAD Technology and Design

CURR: ITD Interior Design

CURR: ITD Interior Design

CURR: SED Secondary Education

CURR: BIO Biology

CURR: CHM Chemistry

CURR: EAS Earth Science

CURR: ENG English

CURR: FRE French

CURR: GEG Geography

CURR: GER German

CURR: HIS History

CURR: LAT Latin

CURR: MAT Mathematics

CURR: PHY Physics

CURR: POL Political Science

CURR: SEB Secondary Education in Business

CURR: SPA Spanish

CURR: PEP Physical Education

CURR: PDE Physical Education

CURR: PDE Physical Education

CURR: HET Health Education Teaching

CURR: PEY Physical Education—Teacher/Coach

CURR: SDC Special Education—Emotionally Impaired

CURR: SDE Special Education—Emotionally Impaired

CURR: SDS Special Education—Emotionally Impaired

CURR: SMH Special Education—Mentally Impaired

CURR: SME Special Education—Mentally Impaired

CURR: SMD Special Education—Mentally Impaired

CURR: SBV Special Education—Visually Impaired

CURR: SBE Special Education—Visually Impaired

CURR: SBS Special Education—Visually Impaired

CURR: TEX Textile and Apparel Studies

CURR: TEX Textile and Apparel Studies

College of Engineering and Applied Sciences:

(4) Students selecting engineering programs will be placed in the "PRE-ENGINEERING" (PE) CURRICULUM until requirements have been met. See the College of Engineering and Applied Sciences' section for complete information on admission requirements.

(5) Not available on-campus.

CURR: AER Aeronautical Engineering

CURR: AER Aeronautical Engineering

CURR: AUM Automotive Engineering Technology

CURR: AUM Automotive Engineering Technology

CURR: CHG Chemical Engineering

CURR: CHG Chemical Engineering

CURR: CPE Computer Engineering

CURR: CPE Computer Engineering

CURR: CEM Construction Engineering and Management

CURR: CEM Construction Engineering and Management

CURR: EE Electrical Engineering

CURR: EE Electrical Engineering

CURR: EGR Engineering Graphics and Design Technology

CURR: EGR Engineering Graphics and Design Technology

CURR: UEM Engineering Management Technology

CURR: UEM Engineering Management Technology

UNDERGRADUATE CURRICULUM AND MAJORS

Curricula and Majors by College

College of Arts and Sciences: Students selecting a communication or psychology program will be placed in the (1) "PRE-COMMUNICATION (PCM)" or (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

BCH Biochemistry

BMS Biomedical Sciences

BCP Broadcast and Cable Production

BUC Business-Oriented Chemistry

CHM Chemistry

CIS Computer Science

CPS Computer Science—Theory and Analysis

CRU Criminal Justice

EAE Earth Science

ECO Economics

ENG English

FRE French

GEG Geography

GEL Geology

GEO Geophysics

GER German

HIS History

HYG Hydrobiology

IPC Interpersonal Communication

JNL Journalism

LAT Latin

MAT Mathematics

MDS Media Studies

OCO Organizational Communication

PHI Philosophy

PHY Physics

POL Political Science

PRA Political Science in Public Administration

PSY Psychology

PUR Public History

PUR Public Relations

REI Religion

SOC Sociology

SPA Spanish

STA Statistics

SPM Student Planned Major

TDM Telecommunications Management

TOU Tourism and Travel

Preprofessional Programs

Provisional Certificate: 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.”

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CURR: ISM Information Systems Management

CURR: MGT Management

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CURR: EMM Elementary Minors

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CURR: FST Family Studies

CURR: PST Family Studies

CURR: HHR Health, Physical Education and Recreation

CURR: CHE Community Health

CURR: PEX Exercise Science

CURR: REC Recreation

CURR: IET Industrial Education Technology

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CURR: TAD Technology and Design

CURR: ITD Interior Design

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CURR: PDE Physical Education

CURR: HET Health Education Teaching

CURR: PEY Physical Education—Teacher/Coach

CURR: SDC Special Education—Emotionally Impaired

CURR: SDE Special Education—Emotionally Impaired

CURR: SDS Special Education—Emotionally Impaired

CURR: SMH Special Education—Mentally Impaired

CURR: SME Special Education—Mentally Impaired

CURR: SMD Special Education—Mentally Impaired

CURR: SBV Special Education—Visually Impaired

CURR: SBE Special Education—Visually Impaired

CURR: SBS Special Education—Visually Impaired

CURR: TEX Textile and Apparel Studies

CURR: TEX Textile and Apparel Studies

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CURR: AER Aeronautical Engineering

CURR: AUM Automotive Engineering Technology

CURR: AUM Automotive Engineering Technology

CURR: CHG Chemical Engineering

CURR: CHG Chemical Engineering

CURR: CPE Computer Engineering

CURR: CPE Computer Engineering

CURR: CEM Construction Engineering and Management

CURR: CEM Construction Engineering and Management

CURR: EE Electrical Engineering

CURR: EE Electrical Engineering

CURR: EGR Engineering Graphics and Design Technology

CURR: EGR Engineering Graphics and Design Technology

CURR: UEM Engineering Management Technology

CURR: UEM Engineering Management Technology
Student Planned Curriculum

Gerry Schma,
Division of Continuing Education
A318 Ewitts Hall
387-4146

The Student Planned Curriculum (STC) provides students the opportunity to pursue educational goals which cannot readily be accommodated in one of the University curricula. The student's academic and educational goals are important elements of this program. The student enjoys considerable freedom and flexibility in designing such a program. 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 course work 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 this latter reason.

Any undergraduate student in good academic standing, with 75 or fewer semester hours earned, is eligible to enter the STC providing they meet program requirements. Those applying for admission into the curriculum are expected to complete a written statement outlining educational goals as well as the proposed course of study. Once the student has outlined a proposed course of study, the student is required to review the course selections with a faculty member of the department in the department(s) offering a majority of the proposed courses. The department members will advise the student regarding the course selections. Once a department has provided guidance, the STC advisor oversees the ongoing student progress.

General University Studies

Gerry Schma, GUS Advisor
Division of Continuing Education
A318 Ewitts Hall
387-4146

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: American Studies, Applied Liberal Studies, Applied Professional Studies, Health Studies, Occupational Education Studies, Social Science Studies, and Technical Scientific Studies. 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 the GUS advisor.

University Curriculum

Mrs. Betty Dennis, Director
203 Moore Hall
387-4410

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 Assessment
• Specially-designed freshman curriculum options suited to skills and interests.

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:...
It is important that premedical students see the preprofessional advisor on a regular basis for curriculum guidance. The advisor is located in 2318 Friedmann Hall. Also available through the advising office are registration materials for the Medical College Admission Test (MCAT) and the American Medical Colleges Application Service (AMCAS).

Students should complete the minimal requirements by the end of their junior year or before they take the Medical College 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 Medical College Admission Test, are listed below:

1. CHEM 110 and 111; 112 and 113; 375 and 376; 377 and 378.
2. BIOS 150 and 151; and recommended courses BIOS 250 and 350.
3. PHYS 113 and 114; 115 and 116 or 205 and 206; 207 and 208.
4. ENGL 105 plus an English course in literature or creative writing.

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 schools of architecture tend to be specific in nature and vary from school to school, course recommendation is based in coordination with a particular school to illustrate the kinds of programs that preprofessional students should follow. It cannot be emphasized too strongly that the student should exercise care to make certain that the specific requirements of a particular school have been met.

DENTISTRY
Maria McGurn
Kerrie Jo Harvey
Medical Sciences Advisors
2318 Friedmann Hall
387-4366

Dental schools increasingly want students with diverse backgrounds and a variety of skills and interests. A science major is not a prerequisite for dental school, although good training in chemistry, biological sciences, and physics is expected. Dental schools are most concerned with overall quality and scope of undergraduate work and want students to have well-developed communication skills and interests in the humanities and social sciences.

Nearly every dental school, including those in Michigan, requires two semesters each of English, physics, biological sciences, inorganic chemistry, and organic chemistry. Dental schools may have additional requirements. Interested students should consult the handbook Admission Requirements of U.S. and Canadian Dental Schools (call number: RK 91.A58; Latest Edition in Waldo Library's Science Reference Desk), for specific requirements. It is also important for interested students to read the specific bulletins (available in the advising office) of the dental schools in which they are interested.

It is important that predental students see the preprofessional advisor on a regular basis for curriculum guidance. The advisor is located in 2318 Friedmann Hall. Also available through the advising office are registration materials for the Dental Aptitude Test (DAT) and the American Association of Dental Schools Application Service (AADSAS).

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 110 and 111; 112 and 113; 375 and 376; 377 and 378.
2. BIOS 150 and 151; and recommended courses BIOS 250 and 350.
3. PHYS 113 and 114; 115 and 116 or 205 and 206; 207 and 208.
4. ENGL 105 plus an English course in literature or creative writing.

LAW
Advisors: College of Arts and Sciences Academic Advising Office
2318 Friedmann Hall
387-4366
Advisors: Department of Finance and Commercial Law
3390 Haworth College of Business
387-5720
Advisors: Department of Political Science
3302 Friedmann Hall
387-5680

No special college program is required or recommended by most law schools. Generally, law schools urge a solid four-year program leading to a bachelor's degree. As long as a student receives a quality education featuring critical analysis, logical reasoning, and written and oral communications, a number of majors are acceptable for the prelaw student. Most often chosen are English, business, political science, history, and economics, but such disciplines as philosophy, anthropology, mathematics, sociology, and the natural sciences are also suitable majors. Interested students should discuss possible majors and major/minor combinations with an advisor to find which best suits them.

Regardless of major, certain kinds of courses are essential during an undergraduate career. Courses which stress writing such as English and business communication courses are indispensable. Courses which require students to use legal reasoning such as administrative law, constitutional law, and business law are highly recommended. Courses which develop an awareness of the structure and processes of government such as national government, legal environment, and judicial processes are also valuable. Finally, acquaintance with the structure and development of American business, the American historical experience, economics, and logic is advisable.

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
Gyula Ficsor
Medical Sciences Faculty Mentor
gyula.ficsor@wmich.edu
5040 McCracken Hall
5040 McCracken Hall
Kerrie Jo Harvey
Maria McGurn
Medical Sciences Advisors
2318 Friedmann Hall
387-4366

Medical schools increasingly want students with diverse backgrounds and a variety of skills and interests. A science major is not a prerequisite for medical school, although good training in chemistry, biological sciences, and physics is expected. Medical schools are most concerned with overall quality and scope of undergraduate work and want students to have well-developed communication skills and interests in the humanities and social sciences.

Nearly every medical school, including those in Michigan, requires two semesters each of English, physics, biological sciences, inorganic chemistry, and organic chemistry. Medical schools may have additional requirements. Interested students should consult the handbook Medical School Admission Requirements (call number: R 745.A8; Latest Edition in Waldo Library's Science Reference Desk), for specific requirements. It is also important for interested students to read the specific bulletins (available in the advising office) of the medical schools in which they are interested.
GRADUATION REQUIREMENTS

General Requirements, Bachelor's Degree

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.

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 signatory to 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 any 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-instrucional) courses may be applied to a degree. Individual colleges and departments may have restrictions on the application of correspondence (self-instrucional) courses to degree requirements.
10. Students transferring from a two-year community or junior 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 “Graduation 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 junior 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.

Earning a 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 of one or 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.

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. However, since not all majors and minors require the same number of hours, students should consult the departmental advisor to be assured of the requirements.

1. The student's major and minor 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 not specified, students should consult the departmental advisor 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.
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 curricula requirements.
9. 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.

Intellectual Skills Requirements

The Baccalaureate degree at Western Michigan University includes proficiency in the intellectual skills of writing, reading, and quantification. To assure 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

Students whose test results indicate weak writing skills must pass a basic writing course before proceeding to the required college-level writing course. All WMU students are required to pass a 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:

- ENGL 100
- BIS 100 (Business students)

College-level writing course options are:

- ENGL 105
- BIS 142 (Business students)
- IME 102 (Engineering and Applied Sciences students)

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

Intellectual Skills Requirements 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 MTELP (Michigan Test of English Language Proficiency) or the TOEFL (Test of English as a Foreign Language). Scores of 75-84 on the MTELP or 500-549 on the TOEFL warrant placement into this language program.

The Office of International Students 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 (see above).

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

INTERNATIONAL TRANSFER STUDENTS

International transfer students will abide by the Intellectual Skills Requirements for transfer students. See immediately below for the specific requirements.

Intellectual Skills Requirements for Transfer Students

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 computation 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.

INTERNATIONAL TRANSFER STUDENTS

International transfer students will abide by the Intellectual Skills Requirements for transfer students.

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 or a credit-by-examination for an approved computer usage course;
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. University Assessment functions in three general areas: Liberal Education and Skill Development Assessment, Majors Assessment and Environmental Scanning. 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 nationally 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 should be directed to 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 Requirements

The requirements for the completion of the General Education program are listed directly below. The goals and structure of the program, as well as the criteria for both the proficiencies and the distribution areas are described in a following section entitled "General Education Policy."

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 or to develop another foundational skill. Each student must:
1. complete a college-level writing course;
2. complete a baccalaureate-level writing course in one's major or curriculum;
3. complete a college-level mathematics or quantitative reasoning course beyond MATH 110 (not 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 college-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 300 or above.

DISTRIBUTION AREAS

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, 3-4 hours
Area II, Humanities, 3-4 hours
Area III, 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 area 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 and/or curriculum major hour requirements.
   a. 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 toward general education. Courses with prerequisites may count toward general education.
5. Students may receive credit by examination in place of course work in the proficiencies, but not proficiencies 4a - 4g, if the department offering the course provides for the same examination, and the COGE approves. Placement in a foreign language at a second-year level does not waive the fourth proficiency requirement.

General Education Requirements 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 college 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 course work 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.

General Education Program Courses

Approved as of 4/1/99

The Proficiencies

PROFICIENCY 1: COLLEGE-LEVEL WRITING

BIS 142 Informational Writing
ENGL 105 Thought and Writing
IME 102 Technical Communication

PROFICIENCY 2: BACCALAUREATE-LEVEL WRITING

Does not count toward 37 credit minimum General Education hour requirement.
Consult your curriculum or major program advisor for course approved for your area of study.
AMS 490 American Studies in a Global Context
ANTH 439 Issues in South American Ethnography
ANTH 440 Ethnography
ANTH 450 Primate Behavior and Ecology
ART 325 Writing About Art
ART 327 Writing About Art History
AVS 490 Senior Project I—Planning
AVS 491 Senior Project II—Analysis
BIOS 319 Plant Physiology
BIOS 350 Human Physiology for Majors
BIS 340 Principles of Business Communication
BUS 370 Integrated Communication in Business
CHEG 487 Senior Design Project
CHEM 436 Physical Chemistry Lab I
CMD 443 Industrial Design Thesis and Project I
CMD 447 Industrial Design Thesis and Project II
CMD 483 Project Design and Control
CMO 485 Senior Project
COM 335 Leadership
COM 350 Public Relations and Organizations
COM 358 TV and Film Scripting
COM 359 Broadcast Journalism
COM 370 Interpersonal Communication
32 GRADUATION REQUIREMENTS AND ACADEMIC ADVISING

COM 372 Introduction to General Semantics 3
COM 441 Documentary Film and Management 3
COM 448 Telecommunications in the Organization 3
CS 460 Software Systems Development I 3
CTE 342 Curriculum Development in CTE 3
DANC 345 Twentieth Century American Dance 3
ECE 481 Electrical/Computer Engineering Design I 2
ECON 484 Comparative Economic Systems 3
ED 395 School and Society 3
ENGL 305 Practical Writing 4
ENGL 362 Literary Journalism 3
ENGL 415 Practical Literary Criticism 4
ENGL 444 Studies in Verse 4
ENGL 448 Shakespeare Seminar 4
ENVS 320 Major Environmental Writings 2
FCS 350 Textiles for Interiors 3
FFC 415 Effective Parenting 3
FFC 486 Advanced and Experimental Foods 3
GEOG 303 Geographic Inquiry 4
GEOG 432 Geomorphology 3
GEOG 435 Sedimentation and Stratigraphy 4
HIST 390 Introduction to the Study of History 3
IME 316 Report Preparation 3
IME 491 Multidisciplinary Senior Proposal 2
IME 492 Multidisciplinary Senior Project 2
JRN 420 Obligations of Contemporary American Journalism 3
LANG 375 Foreign Literature in English Translation: Views of Humanity 3
MATH 314 Mathematical Proofs 3
MATH 402 Mathematical Modeling 3
ME 365 Machine Design I 3
ME 480 Mechanical and Aeronautical Engineering Project 3
MUS 352 Non-Western Music 4
NURS 307 Nurses' Role in Facilitating Health and Self-Care II 9
NURS 308 Nurses' Role in Facilitating Health and Self-Care (RN) 8
OT 483 Capstone Experience in OT 1
PAPP 485 Research Design 3
PEPP 450 Cultural Dynamics of HPER 2
PHIL 300 Ancient and Medieval Philosophy 4
PHIL 301 History of Modern Philosophy 4
PHIL 310 Moral Philosophy 4
PHIL 332 Theory of Knowledge 4
PHIL 333 Metaphysics 4
PHYS 466 Advanced Laboratory 3
PSCI 421 Gender and Law 3
PSCI 450 Seminar in International and Comparative Politics 3
PSCI 490 Political Science Honors Seminar 3
PSCI 494 Seminar in Political Science 3
REL 301 Writing About Religion 3
SOC 456 Social Stratification 3
SOC 466 Advanced Criminology 3
SPPA 459 Special Studies in Communication Disorders 3
THEA 370 Theatre History I 3
THEA 372 Musical Theatre History and Script Analysis II 3

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 4
MATH 150 Number Concepts for Elem/Mid School Teach 4
MATH 160 Statistics and Data Analysis 3
MATH 190 Survey of Mathematical Sciences 3
MATH 200 Calculus with Applications 4
MATH 366 Introduction to Statistics 4

PROFICIENCY 4: ENHANCE OR DEVELOP A PROFICIENCY

A course or courses in one of the following categories:

Proficiency 4a, Advanced Writing
ENGL 364 Feature and Article Writing 3
ENGL 442 Shakespeare Seminar 4
JRN 300 Newswriting and Reporting 4

Proficiency 4b, Mathematics or Quantitative Reasoning
MATH 122 Calculus I 4
MATH 151 Geometry for Elem/Mid School Teachers 3
MATH 200 Calculus with Applications 4
MATH 216 Business Statistics 3
MATH 260 Elementary Statistics 4
MATH 265 Probability and Statistics for Elementary/Middle School Teachers 4

Proficiency 4c, Critical Thinking
PHIL 220 Critical Reasoning 3
PHIL 225 Deductive Logic 3
PHIL 320 Introduction to Formal Logic 4
PHIL 325 Inductive and Scientific Reasoning 3

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

Proficiency 4e, American Sign Language

Proficiency 4f, Computer Science
CS 111 Computer Science I 3
CS 112 Computer Science II 3

Proficiency 4g, Foreign Languages
All Western Michigan University foreign language courses are granted general approval to satisfy Proficiency 2.
Two semesters of college-level foreign language study will satisfy this requirement; students entering the University without 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.

The Distribution Areas

DISTRIBUTION AREA I: FINE ARTS

A-S 330 Study Abroad - WMU Programs 1-16

A-S 405 Foreign Studies Seminar - Humanities 1-6

ENG 111 Myth and Folk Literature 4
ENG 112 Literary Classics 4
ENG 252 Shakespeare 4
ENG 282 children's Literature 4
ENG 307 Literature in Our Lives 3
ENG 308 Quest for the Self 3
ENG 311 Our Place In Nature 3
ENG 312 Western World Literature 3
ENG 315 The English Bible as Literature 3
ENG 416 Women in Literature 4
HIST 101 Modern Western World 3
HIST 145 Heroes and Villains of the Middle Ages 3
HIST 212 American Culture 3
HIST 300 Arts and Ideas: Ancient/Medieval 3
HIST 301 Modern Arts and Ideas 3
HIST 336 Women in European History 3
LANG 350 Classical Greek and Roman Mythology 3
LANG 375 Foreign Literature in English Translation: Views of Humanity 3
MEDV 145 Heroes and Villains of the Middle Ages 3
PHIL 200 Introduction to Philosophy 4
PHIL 201 Introduction to Ethics 4
PHIL 300 Ancient and Medieval Philosophy 4
PHIL 301 History of Modern Philosophy 4
PHIL 302 Existentialist Philosophy 4
PHIL 307 Philosophy of Science 3
PHIL 310 Political Philosophy 3
PHIL 311 Political Philosophy 3
PHIL 312 Philosophy and Public Affairs 3
PHIL 315 Ethics in Engineering and Technology 3
PSCI 360 Introduction to History of Political Theory: I Political Theory to Thomas Hobbes 3
PSCI 361 Introduction to History of Political Theory II: Political Theory from Thomas Hobbes to Karl Marx 3
CHEG 261 Environmental Engineering... 3
CMD 131 Introduction to the... 3
CMD 251 The Evolution of Mater... 3
ENVS 300 Environment, Technology, and Values 4
FCS 160 Introduction to Agriculture... 4
FCS 364 Land Use and Soil Conservation 4
GEOG 100 World Ecological Problems 3
GEOG 144 Environmental Earth Science 3
GEOG 222 Resources, Technology, and Challenges 3
GEOG 312 Geology of the National Parks and Monuments 3
HHS 461 Information Systems for Health Care Professionals: Medical Informatics 3
IME 122 Automobile in Society 3
IME 150 Introduction to Manufacturing 3
ME 220 Processes and Materials in Manufacturing 3
PAPR 160 Introduction to Environmental Engineering 3
PHIL 250 Science, Technology, and Values 3
PHIL 334 Biomedical Ethics 4
PHIL 355 Philosophy of Science 3
SCI 133 Issues in Social Biology 4
SOC 160 Introduction to Sociology 4
SPPA 200 Communication Disorders and Well-Being 3

DISTRIBUTION AREA VII: HEALTH AND WELL-BEING

ADA 225 Drug Use: Personal and Social Impact 3
HOL 100 Choices in Living 3
IME 122 Automobile in Society 3
ME 220 Processes and Materials in Manufacturing 3
PAPR 160 Introduction to Environmental Engineering 3
PHIL 250 Science, Technology, and Values 3
PHIL 334 Biomedical Ethics 4
PHIL 355 Philosophy of Science 3
PHYS 102 Physics, Technology, and Society 3
SCI 133 Issues in Social Biology 4
SPPA 200 Communication Disorders and Sciences 3

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

The program has two parts: proficiencies and distribution areas. What follows describes these elements of the program. However, all descriptions of course content and structure presuppose use of the professor's freedom to teach the course according to personal professional judgment. Stated requirements are not intended to impinge 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.

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 support ideas and arguments and express them clearly.

Baccalaureate-level, writing-intensive courses should reinforce the skills acquired in college-level courses and should promote maturity as a writer. They should further the ability to analyze and evaluate writing, the ability to construct and develop a point or idea, the ability to develop organized paragraphs and use appropriate transition devices, and the ability to employ the grammatical and mechanical conventions of standard written English. Papers in every proficiency required for baccalaureate-level writing must be substantial in nature and length. Instructors and departments will be responsible for determining the format, modes of presentation, technical vocabulary, and research or bibliographic conventions appropriate for writing in their respective disciplines. These descriptions of the superseded criteria stated in the current University baccalaureate-level writing requirement.

MATHMATICS OR QUANTITATIVE REASONING COURSES (Proficiency 3)

Each student must either: complete a college-level mathematics or quantitative reasoning course requiring Math 110 (not 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 foundations of algebra, properties of real numbers, linear equations and 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, 4a

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

Mathematics or Quantitative Reasoning, 4b

The second course in mathematics or quantitative reasoning courses 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, 4c
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 expert in reasoning, listen, read, think, evaluate, write, speak, and when they carry out plans of action. To this end, the courses have at least two of these four goals: provide skill in reasoning in several kinds of distinctions: between arguments (chains of reasoning) and other information, between conclusions and premises, between the common patterns of arguments, between complete and incomplete presentations of arguments, between strong and weak arguments, and between cogent and incoherent ways of exposing weak arguments. Provide skill in reasoning in the opinion by locating common ground, by marshaling arguments, and by becoming sensitive to fallacies and other pitfalls of disputes.
provide sensitization methods of overcoming differences that obstruct agreements to cooperate, so that the parties may come to an agreement on a basis which minimizes 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, 4d
Courses in oral communication should provide 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, 4e
Courses should enable students to recognize, describe, and produce under appropriate circumstances the natural and symbolic features and vocabulary of American Sign Language with the aim of achieving conversational fluency. Courses should also enable students to recognize and describe the essential features of the culture, education, and communication strategies of deaf people.

Computer Programming and Applications, 4f
The level of programming and applications required should be beyond the University’s requirements for computer usage (literacy). Courses are not limited to those offered by the Department of Computer Science.

Foreign Language, 4g
Foreign language courses should develop facility in understanding, speaking, reading, and writing a language other than one’s own. Additionally, these courses should introduce students to particular features of the culture from which the language derives 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 the Distribution Areas

AREA I, FINE ARTS
Courses which meet the fine arts requirement are designed to provide students with experiences and develop skills that promote awareness of the imaginative and inventive capacities of the mind and of the aesthetic qualities of works of fine art. Courses may focus on the role of an 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 which human beings have reflected upon and represented human experience and the varieties of the human condition. These forms are mostly linguistic—literary, philosophic, historiographic, 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 scope. They 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 racial and social groups. As the United States, increasingly multicultural and aware of the claims and rights of its diverse citizenry, strives to include all groups fully into the national and 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 overwhelming. In recent centuries, Western powers have vastly overseas empires whose impact has been far-reaching and varied, sometimes devastating. As part of this legacy, our perceptions regarding the human condition are formed by the world-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 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 science requirements. 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, and economic welfare; the storage, transfer, and processing of information; and the management of society’s impact on the environment with sensitivity to ecological interconnections. Courses in this area help students attain this understanding and promote the ability to evaluate and participate in the decisions of society regarding science and technology. A substantial portion of the course work will be devoted to the teaching of the relevant science and technology. All courses will contain a core of natural science, computer science, or the technology based on these sciences, they will explore practical applications and implications.

AREA VIII, HEALTH AND WELL-BEING
Courses which satisfy this area must advance students’ knowledge of 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 HIV/AIDS, and alcohol and substance abuse.

Courses which satisfy this requirement should improve a student’s capacity to make healthy life-style choices. Single-topic courses may not be used to satisfy the requirement, and course content must address a minimum of four areas of health and well-being, such as substance abuse, stress-related issues, grief and loss, development of healthy relationships, sexually transmitted diseases, life-style related diseases (primarily heart disease and cancer), and the principles of a healthy life-style.

Courses may be drawn from any department within the University. This area requirement supersedes 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 education may be counted toward graduation.”)

Students who have completed a minimum of two years United States military service through active, reserve, or national guard duty, will be deemed to have satisfied and will receive two credit hours for Area VIII, Health and Well-being of the University General Education Program.

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 when choosing their degree programs. Curriculum advisors offer academic advising which includes General Education requirements, specific curriculum requirements, co-curricular 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. Students not certain of their curriculum or advisor should contact the Advising Office of the College to which they have been admitted. (See list below.) Students should refer to their Admission Certificates to find out to which curriculum and College they have been admitted.

Academic Advising for Freshmen Students
Freshmen students admitted for the Fall Semester will receive a written invitation to attend one of the Orientation sessions held during the summer. Attendance is mandatory. During this program, students will have the opportunity to meet with their curriculum advisors, at which time they will receive academic information and assistance in requesting classes for their first semester. Orientation provides comprehensive advising, as well as important campus information. Students who have been admitted for winter, spring, or summer must make individual appointments for advising prior to registering. Appointment should be with curriculum advisors.

Academic Advising for Transfer Students
Newly-admitted transfer students will be invited either to an Advising Conference scheduled especially for transfer students, to summer orientation, or to an individual appointment. Invitations to these events will be sent along with the Admission Certificates or shortly thereafter. At these events, students will be advised as to how transfer courses apply to programs at Western. In addition, students will receive curriculum and major/minor advising, as well as Intellectual Skills Program advising. 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.

Academic Advising for Graduation
Applications for a graduation audit to determine the student's eligibility for graduation are available in the College Advising Offices. Major and minor slips also must be secured from the appropriate advisor(s) and submitted along with the application for a graduation audit. Advisors will assist students with this application process, and students should visit regularly with their advisors to ensure that their progress toward degree completion conforms with all University and degree requirements.

College Advising Offices
College of Arts and Sciences
2318 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 Kehrman Hall, 387-4033
College of Fine Arts
2148 Dalton Center, 387-4672
College of Health and Human Services
B-119 Henry Hall, 387-2656
University Curriculum
203 Moore Hall, 387-4410
Lee Honors College
Main Office, Lee Honors College Building, 387-3230
General University Studies (GUS) Program
A-318 Ellsworth Hall, 387-4146

Freshman Graduation Rates
FULL-TIME DEGREE-SEEKING BEGINNING FRESHMEN, CLASS OF 1992
Number of Beginners: 2,866
6 years
Number of Graduates: 1,452 (50.7 percent)
REGISTRATION, ACADEMIC REGULATIONS, AND RECORDS

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 any subsequent change in their schedules should be made before the final day of the drop/add period. See the sections below on "Changing Courses" and "Withdrawal from Classes." for more information about changing registration schedules.

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.

Late Registration Fee
See Student Fees.

Adding or Withdrawing from Classes Prior to the Official Date to Drop

Students may enroll in (add) 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 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 withdrawing 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:
- Must have previously earned thirty hours of credit from WMU.
- 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 Cashiering, 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, or 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 as the project, and then submit the agreed-upon proposal to 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 lecture content, but that 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 System**

The student receives one grade in each course taken. This grade combines the results of course work, 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</th>
<th>Significance</th>
<th>Honor Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Outstanding, Exceptional</td>
<td>4.0</td>
</tr>
<tr>
<td>BA</td>
<td>Very Good, Extraordinary</td>
<td>3.5</td>
</tr>
<tr>
<td>B</td>
<td>Very Good, High Pass</td>
<td>3.0</td>
</tr>
<tr>
<td>CB</td>
<td>Satisfactory, Acceptable</td>
<td>2.5</td>
</tr>
<tr>
<td>C</td>
<td>Adequate</td>
<td>2.0</td>
</tr>
<tr>
<td>DC</td>
<td>Poor</td>
<td>1.0</td>
</tr>
<tr>
<td>D</td>
<td>Failing</td>
<td>0.0</td>
</tr>
<tr>
<td>E</td>
<td>Failure (Unofficial Withdrawal)</td>
<td>0.0</td>
</tr>
<tr>
<td>W</td>
<td>Official Withdrawal</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>Credit</td>
<td></td>
</tr>
<tr>
<td>NC</td>
<td>No Credit</td>
<td></td>
</tr>
<tr>
<td>AUD</td>
<td>Audit (non-credit enrollment)</td>
<td></td>
</tr>
</tbody>
</table>

**Credit/No Credit System**

The regulations of a system supplementing the A, B, C, D, and E grading system for undergraduate students 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 undergraduate student who earns the grade of "C" or better. "No Credit" will be posted for any grade below a "C." Faculty members will be asked whether a student is taking a course for a grade or for Credit/No Credit.
3. A student may elect for Credit/No Credit for 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 General Physical Education requirement. 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 requiring the course.
4. A student may change only during the drop/add period from Credit/No Credit to letter grade or from letter grade to Credit/No Credit.
5. All undergraduate students, regardless of classification or probationary status, will be allowed to enroll Credit/No Credit.
6. Grades for thesis courses, while counting toward a degree, will not be used to determine the overall grade point average (GPA) of the individual student.

Important: Students should be fully aware of the implications of this system for acceptance in graduate schools. It has been ascertained that most graduate schools will accept students who have elected to take courses on a Credit/No Credit basis, but that if courses taken on this basis are sufficient in number on the transcript, the Graduate Record Examination may be utilized to determine the student's acceptability. Graduate schools, in general, do tend to favor those applicants who have good letter grades on their transcripts.

**Grading System**

**Grade Significance Points**

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 above. For example, a grade of B(3 honor points) in a 4 credit 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 32 ÷ 16 = 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 twelve 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.

Official Dean's Lists are not prepared for the spring or summer sessions.

**Honors**

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

Recipients of honors receive the following degrees:

- Cum laude—when their grade point average is 3.50 to 3.69, inclusive
- Magna cum laude—when their grade point average is 3.70 to 3.89, inclusive
- Summa cum laude—when their grade point average is 3.90 to 4.00, inclusive

In computing the grade point average for honors, the following rules shall apply:

1. All credits and honor points earned at Western Michigan University will be counted.
2. Credits and honor points earned in correspondence and extension classes will be counted toward honors.

3. All students must have earned at least fifty-six semester hours of credits at Western Michigan University, of which fifty must be graded by a letter grade and computed into the final cumulative grade point average.

The graduation program will list as candidates for honors all students who have earned a point-hour average of 3.50 through the next-to-last semester of residence (based on a minimum of forty-five semester hours of credit earned at Western of which thirty-five hours must be in courses with grades.) Final determination of honors and level of awards will be based upon all work and will appear on the final transcript.

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 the student's 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, 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 the student's 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 one additional enrollment period.

6. Dismissal
   Students who fail to increase their 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 (AP)
Western Michigan University participates in the Advanced Placement Program (AP) of the College Board. Students with scores of at least 3 (in the case of Physics) on any AP 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 AP 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 WMU, the Office of the Registrar will post course credit to students' transcripts. For more information on AP 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 testing 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 making 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 attending 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.

4. The following eligibility rules apply to nontraditional students who wish to take the general CLEP examinations:
   - Students who have already received credit for a college writing class cannot receive credit by passing the English examination.
   - Students who have already received credit in a college mathematics course cannot receive credit by passing the mathematics examination.
   - Students who have received college credit for two courses in any of three areas, the humanities, social sciences, or natural sciences (excluding mathematics courses), from the Distribution Areas of General Education, or comparable transferred courses, cannot receive credit for the respective examinations.

5. The following guidelines shall apply in the earning of CLEP credit:
   - If a student passes the humanities examination with a score of 540 or above, three hours of credit will be awarded in Area I (fine arts) of the General Education Program.
   - If a student passes the social sciences-history examination with a score of 520 or above, six hours of credit will be awarded to Area V (social and behavioral sciences) of the General Education Program.
   - If a student passes the English test (with the writing sample) with a score of 550 (660 for 1978 through April 1986 testing) or above, four hours of credit will be awarded in Proficiency 1 of the General Education Program.
   - If a student passes the natural sciences examination with a score of 489 or above, three hours of elective credit will be awarded in Area VI (natural sciences) of the General Education Program, but will not satisfy the lab course requirement for Area VI.
   - If a student passes the mathematics examination with a score of 497 or above, three hours of credit will be awarded in Proficiency 3 (mathematics) of the General Education Program.

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 thirteen 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 departmental 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 must be completed at a four-year degree-granting institution.
3. Credit by comprehensive examination can be used to meet all other University graduation requirements, except the minimum residence 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 Application Deadlines and Fees
Summer Session Graduation (August) $30.00 Application Deadline: April 1
$50.00 Application Deadline: July 15
Fall Semester Graduation (December) $30.00 Application Deadline: August 1
$50.00 Application Deadline: November 15
Winter Semester Graduation (April) $30.00 Application Deadline: December 1
$50.00 Application Deadline: March 15
Spring Session Graduation (June) $30.00 Application Deadline: February 1
$50.00 Application Deadline: May 15

Graduation Procedures
When a student satisfactorily completes all academic requirements for a degree, fulfills all financial and legal obligations to the University, and meets all relevant processing deadlines, the student is eligible for
graduation and to receive the appropriate degree. An eligible student may graduate at the end of a semester or a session—in December, April, June, or August; however, a Commencement Ceremony is held only in December, April, and June.

Applications for a graduation audit to determine the student's eligibility for graduation are available in the College Advising Offices. Major and minor slips also must be secured from the appropriate advisor(s) and submitted along with the application. The deadlines and fees for submitting the application are listed directly above.

The graduation audit, initiated by the submission of the Application for a Graduation Audit form, is a process by which a student's academic record is examined to make sure all University obligations and all academic requirements for the degree have been met. The audit is conducted by a graduation auditor in the Registrar's Office and its outcome depends greatly on the completeness and appropriateness of the materials contained in the student's academic record.

Students whose audit determines that they do not fully meet degree and University requirements or students who wish to change from one graduating class to another will be removed from the anticipated graduation class identified on the application form. Such students must then change their graduation date; the graduation auditor will not automatically move the student to another graduation class. No fee is charged for submitting a Change of Graduation Date form.

Completion of Work for Graduation—Final Date

All work taken either on or off the campus must be completed by graduation day. 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 credit hours earned at the close of the summer session. Students who take or complete such courses will receive their degrees and certificates at the close of the fall semester.

Students who fail to meet academic standards or complete all degree requirements, will be removed from graduation lists automatically. Such students will be placed in the class of the succeeding semester or session only after reapplication 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. Under no circumstances will any student be graduated with a class if his/her academic record does not show complete fulfillment of all requirements within thirty days after the established commencement date.

Transcripts

Students desiring a transcript of their academic records 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 $20.00 fee in subsequent semesters. This card is used throughout the student's entire enrollment at Western. There will be a $20.00 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.
The Lee Honors College is a member of the Michigan Honors Association and regularly participates on regional and national Honors committees, making presentations to other Honors colleagues. 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 individuals who are fine teacher/scholars and 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/note taking format. Teachers are encouraged to broaden the arena 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.Hons.Col@wmich.edu

**Baccalaureate Writing Requirement**

Students who have been accepted into 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.Hons.Col@wmich.edu

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**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 member of the faculty, 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 administrative 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisite: Approval of the thesis project by the Dean.
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 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 prepared to make their way in a changing world, 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 Majors" in the Degrees, Certificates, and Undergraduate Curricula and majors 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 35 semester hours. 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 through Self-Instructional Programs may be used in fulfillment of the General Education Distribution, Academic 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.

4. Students who will graduate from the College of Arts and Sciences 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
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 at home and abroad. Completion of portions of the program through study abroad, in Western Michigan University’s International Programs or by transfer of coursework 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 one course.
2. Foreign Language requirement: Two semesters (6-8 hours) of a foreign language, or proficiency by exam, or two years of high school foreign language. Students must earn a grade of “B” 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 (Natural Science) or from a science department (3-4 credit hours) [Need not include a lab. Courses in Mathematics and Statistics, Computer Science, and Geography (social science) are excluded]; (c) one additional course in the Humanities (see Distribution Area 2 for departments; additional course need not be General Education course); (d) one additional course in the Social Sciences (see Distribution Area 5 for departments; additional course need not be General Education course); (e) only one of the two courses in the social sciences may be a "principles" or introductory social science course from the following list: ANTH 100, 110, 140, 210, 240; BUS 170, 220; COM 200; ECON 107, 108, 109, 201, 202, 203; GEO 100, 101, 102; HIST 100, 101, 102, 105, 120, 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.

Art 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 Curriculum and work with a College Advisor plus at least one faculty advisor to create an individually tailored course of study of sufficient credit hours to meet the general degree requirements.

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.

Academic Advising Office

G. H. Demetrakopoulos
Kerrie Harvey
Kate Hayes
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 with an advisor 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 for 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, minors and majors 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 the office.

Students may stop by, or call 387-4366 for an appointment.

Arts and Sciences Student Planned 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 approval must 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 is encouraged. 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, University Education Program, provided the course is appropriate. Students desiring to use study abroad in fulfillment of LEC or General Education requirement 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. May be repeated for up to 32 credit hours.

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 and/or Proficiency. May be repeated for up to 32 credit hours.

A-S 390 Arts and Sciences Seminar 1-14 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 an 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. Prerequisite: A written outline of the student's project, approved by a faculty supervisor, with approval from the office of the Dean.
A-S 498 Directed Independent Study
1–6 hrs.
A program of independent study (reading or research) that allows the student to pursue a subject that falls outside of the traditional disciplines. The initiative for describing the project, planning the method(s) of investigation, determining appropriate product or results, and securing the cooperation of a faculty member to supervise the work must come from the student. Application forms may be picked up in the College of Arts and Sciences Advising Office and must be approved by the Dean of the College. Approval is contingent on the merit of the proposal. Repeatable up to the maximum of 6 credit hours. Prerequisite: Approved application and permission of the instructor.

A-S 596 Directed Off-Campus Independent Studies
1–16 hrs.
A program of independent study that allows the student to pursue a subject that falls outside of the traditional disciplines. The initiative for describing the project, planning the method(s) of investigation, determining appropriate product or results, and securing the cooperation of a faculty member to supervise the work must come from the student. Application forms may be picked up in the College of Arts and Sciences Advising Office and must be approved by the Dean of the College. Approval is contingent on the merit of the proposal. Repeatable to a maximum of 16 hours. Prerequisite: Approved application and permission of the instructor(s) and Dean of the College.

FOREIGN STUDIES SEMINARS
Students may receive up to six hours of credit in any combination of departments as described provided the seminar is planned with that combination in mind. No student will receive credit under any of the course plans indicated here for work done in seminars planned and conducted by other institutions, or for work done independent of seminars planned by the College of Arts and Sciences.

A-S 404 Foreign Studies Seminar
1–6 hrs.
Seminars in the Social Sciences conducted outside the United States by WMU faculty or others associated with WMU. Students who complete such a seminar may receive credit in the Departments of Anthropology, Economics, Geography, History, Political Science, or Sociology if the credit is approved by the chairperson of the department prior to registering for the seminar. Individual courses may be designated as fulfilling some areas of the College of Arts and Sciences Liberal Education Curriculum or the University General Education Program. May be repeated for up to 32 credit hours.

A-S 405 Foreign Studies Seminar
1–6 hrs.
Seminars in the Humanities conducted outside the United States by WMU faculty or others associated with WMU. Students who complete such a seminar may receive credit in the Departments of Asian and Middle Eastern Languages, Communication, Comparative Religion, English, Foreign Languages and Literatures, Philosophy, and departments in the College of Fine Arts if the credit is approved by the chairperson of the department prior to registering for the seminar. Individual courses may be designated as fulfilling some areas of the College of Arts and Sciences Liberal Education Curriculum or the University General Education Program. May be repeated for up to 32 credit hours.

INTERDISCIPLINARY PROGRAMS

1. Program in American Studies
2. Black Americana Studies
3. Criminal Justice Program
4. Environmental Studies Program
5. Diether H. Haenicke Center for International Studies and Area Studies: African Studies, Asian Studies, Canadian Studies, European Studies (British Studies, Germanic Studies, Romance Studies), Latin American Studies, Russian and East European Studies
6. Medieval Studies
7. Science and Mathematics Teaching
8. Social Studies Teaching
9. Women’s Studies
10. World Literature

Program in American Studies
Katherine Joslin, Director
301 Moore Hall
(616) 387-2086
Email: joslin@wmich.edu

Associate Faculty:
Linda Borish, History
Michael Chiarappa, History
James Ferreira, History
Rick Gershon, Communications
Vycheslav Karpov, Sociology
Ashyn Kuersten, Political Science
Michael Nassaney, Anthropology
James Petersen, Sociology
Gwen Raaberg, Women’s Studies
Chet Rogers, Political Science
John Saillant, History
Kristin Szyman, History
Ben Wilson, Black Americana Studies
Brian Wilson, Comparative Religion

The American Studies curriculum looks at America from a variety of perspectives, beginning with the individual student and moving outward into the world. The program offers students classes in American history and culture as they exist in a region, as they function throughout the nation, and as they interact within diverse cultures and contexts in the world. This interdisciplinary program imparts an important lesson: that human life, like many individual lives, grows outward from a region into larger settings.

The program in American Studies consists of an undergraduate major and a minor designed to be interdisciplinary in theory and method. The program brings together WMU faculty from many departments and programs within the College of Arts and Sciences who are scholars and teachers specializing in aspects of American Studies, covering such topics as the exploration and settlement of the Americas, American religion, American government in theory and in practice, various movements within American literature, elements of popular culture such as folklore, sport, and film, the experience of American women, African American and Native American history and culture, anthropology and archaeology, environmental history, American dialects and ethnic groups, and the history of parts of the world with deep-rooted ties to the USA. An interdisciplinary course of study in American history and culture can provide a solid background for students preparing for careers in journalism, research organizations, publishing houses, politics, public relations, mass communications, the foreign service, or for graduate work in the humanities or law.

MAJOR IN AMERICAN STUDIES (36 hours)
Students must select courses in at least four (4) departments participating in the program and must concentrate to solve (12) hours of study in one department; at least sixteen (16) hours must be taken at the 400-level or above.

Required Courses (6 hours)
AMS 200 Introduction to American Studies ................................................. 3
AMS 300 Regional Culture in America ................................................. 3

Core Courses from Participating Departments and Programs (18 hours)
Students will work with the director to create a program of study that will incorporate attention on three perspectives: regional, national, and global. Students must select courses from at least four departments.

Regional Perspectives Select two of the following courses:
ANTH 405 Archaeology of the Great Lakes States
BAS 315 The Underground Railroad in the Midwest
ENGL 320 American Literature I
HIST 315 Popular Art and Architecture
PSCI 300 Urban Politics in the United States

National Perspectives Select two of the following courses:
ANTH 344 Indians and Eskimos
BAS 300 Black Experience: From the African Beginnings to 1865
BAS 301 Black Experience: From 1866 to the Present

COM 240 Introduction to Telecommunication
COM 507 Freedom of Expression
ENGL 321 American Literature II
ENGL 522 Studies in American Literature
HIST 212 American Culture
PSCI 200 National Government
PSCI 421 Gender and Law
REL 313 Religion in America
SOC 100 American Society
SOC 210 Modern Social Problems
WMS 200 Introduction to Women’s Studies

Global Perspectives Select two of the following courses:
ANTH 303 Historical Archaeology
ENGL 222 Literatures and Cultures of the United States
ENGL 223 Black American Literature
ENGL 539 Post-Colonial Literature
HIST 313 American Diplomatic History
PSCI 250 International Relations
PSCI 350 American Foreign Policy
REL 400 Topics in Religion
SOC 314 Ethnic Relations
SOC 354 Population and Society

Capstone Seminar and Baccalaureate Writing Requirement (3 hours)
Students who have chosen the American Studies major will satisfy the Baccalaureate Writing Requirement by successfully completing the following course:
AMS 490 American Studies in a Global Context ................................................. 3

Electives (9 hours)
Students may choose electives from the approved list of courses. Courses from other departments and colleges may be elected with the approval of the program director.

Optional American Studies Courses
AMS 390 Internship
AMS 500 Special Topics in American Studies
AMS 590 Interdisciplinary Theory and Methods
AMS 598 Independent Study
American Studies Abroad
The director will arrange for WMU students to study American culture from the perspective of another country at a university outside the United States. Consult the director for more information about this option.

MINOR IN AMERICAN STUDIES (24 hours)

Required Courses (6 hours)
AMS 200 Introduction to American Studies 3
AMS 300 Regional Culture in America 3

Required Capstone Seminar (3 hours)
AMS 430 American Studies in a Global Context 3

Elective Course (3 hours)
Core Courses from Participating Departments and Programs (12 hours)
Students must select four (4) courses from different departments, including at least one from each perspective: regional, national, and global.

Approved Elective Courses
Regional
BAS 350 Blacks in Michigan 3
COM 343 American Film History 3
ENGL 410 Special Topics: Native American Literature 3
HIST 250 Michigan History 3
HIST 318 Environment and the American Experience 3
HIST 322 The American West 3
HIST 324 Everyday Life in America 3
HIST 326 American Indian Cultural History 3
HIST 330 History of Canada 3
HIST 412 Local History Techniques 3
HIST 416 Topics in Michigan History 3
HIST 434 American Indians to 1867 3
HIST 515 Topics in Public History 3
PSCI 202 State and Local Government 3
SOC 353 The City and Society 3
SOC 568 Race, Ethnicity, and Justice 3

National
BAS 330 History and Significance of Black Popular Culture 3
COM 444 Mass Communication, News, and Public Affairs 3
COM 541 Telecommunications Law and Policy 3
ENGL 311 Our Place in Nature 3
ENGL 416 Women in Literature 3
HIST 204 American History to 1800 3
HIST 210 American History to 1890 3
HIST 211 American History since 1890 3
HIST 314 American Minorities 3
HIST 316 Women in United States History 3
HIST 328 African-American Cultural History 3
HIST 420 Colonial America 3
HIST 421 The New Nation: American Revolution and Independence 3
HIST 422 Antebellum America 3
HIST 424 The Civil War and Reconstruction 3
HIST 425 United States, 1877-1919 3
HIST 426 United States, 1920-1945 3
HIST 427 United States, 1946-1960 3
HIST 428 United States since 1960 3
HIST 432 Women in American History 3
HIST 433 Women in American History since 1870 3
JRN 330 Cultural History of Journalism 3
PSCI 311 American Politics and the Media 3
PSCI 363 American Political Thought 3
PSCI 423 Constitutional Law 3
WMS 300 Working Women, Past and Present 3
WMS 310 Women and Social Institutions 3

Global
ENGL 210 Film Interpretation 3
HIST 320 American Military History 3
SPAN 275 Latino Writing/Latino Culture 3

AMS 200 Introduction to American Studies 3
This course introduces students to the interdisciplinary study of American culture and history focusing on the theme of the place of the individual in the community. Students will gain an understanding of the social forces that have shaped men's and women's experiences in American history in various regions. This course explores American culture in such areas as religion, politics, sport, literature, labor, popular culture, and social reform.

AMS 300 Regional Culture in America 3
This course looks closely at a region in America, considering ways scholars work across traditional disciplinary boundaries to construct a coherent understanding of what is meant by culture. The region studied will vary but will always take similar questions about the history of the culture, including native and immigrant populations, regional and ethnic spaces, diversity in its many forms, as well as regional uniformity and sense of identity in juxtaposition to notions of the nation as a whole.

AMS 390 Internship 3-6 hrs.
After completing at least 18 hours of course work in the AMS program, a student may choose to work outside the University in a regional or national project, such as an archaeological field school, or work as an intern for the Maritime Museum, a political party, or a social service agency. The program director will help to make arrangements and will evaluate the student's performance.

AMS 490 American Studies in a Global Context 3 hrs.
This final seminar for the American Studies major and minor is designed to broaden students' conception of American Studies by challenging them to place their knowledge of the culture of the United States within a global context. Students will be asked to compare some element from American culture to similar elements in other cultures from around the globe. In this way, students will come to better appreciate what is unique and what is universal in American culture. Prerequisites: At least 20 hours of work in the American Studies major or minor, including AMS 200 and AMS 300.

AMS 500 Special Topics in American Studies 3 hrs.
This course provides group study of special topics in American Studies. Topics will vary with the training and scholarship of the professor or professors involved. Prerequisites: At least 18 hours of courses approved in the American Studies Program, including AMS 200 and AMS 300, or graduate-student status in any participating department.

AMS 590 Interdisciplinary Theory and Methods 3 hrs.
This course will allow students to understand the development of American Studies from the early history and literature syntheses to the symbolic and myth school to the social and cultural studies approaches that have drawn their techniques from anthropologists and other social and natural scientists. Prerequisites: At least 18 hours of courses approved in the American Studies Program, including AMS 200 and AMS 300, or

INTERDISCIPLINARY PROGRAMS

AMS 598 Independent Study 1-3 hrs.
An individual project is available to advanced students by special permission from the director of American Studies. Prerequisites: At least 18 hours of courses approved in the American Studies Program, including AMS 200 and AMS 300, or graduate-student status in any participating department.

Black Americana Studies
Earl M. Washington, Director and Advisor
330 Moore Hall *(616) 387-2964*
Leander C. Jones, Advisor
332 Moore Hall *(616) 387-2962*
Benjamin C. Wilson, Advisor
331 Moore Hall *(616) 387-2967*

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 COORDINATE MAJOR
24 credit hours minimum, including Capstone Experience

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 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.

Core Courses
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.

BAS 200 Black Presence 3
BAS 210 Black Nationalism 3
BAS 300 Black Experience: The African Beginnings to 1866 3
BAS 301 Black Experience: From 1866 to the Present 3
BAS 310 Black Woman: Historical Perspective and Contemporary Status 3
*BAS 314 Black Community 3
*BAS 320 Ecology and the Black Community 3
*BAS 330 History and Significance of Black Popular Culture 3
BAS 350 Blacks in Michigan 3
Electives
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.

Social Science Courses
ANTH 341 Cultures of Africa. 3 hrs.
GEOG 361 Population: The Crowding World. 3 hrs.
GEOG 386 Sub-Saharan Africa: Man, Environment, Resources. 3 hrs.
HIST 210 American History to 1890. 3 hrs.
HIST 211 American History since 1890. 3 hrs.
HIST 250 Michigan History. 3 hrs.
HIST 328 African American Cultures and History. 3 hrs.
HIST 388 Introduction to African Civilization. 3 hrs.
HIST 434 American Indians to 1887. 3 hrs.
HIST 435 American Indians since 1887. 3 hrs.
HIST 436 Topics in African American History. 3 hrs.
HIST 488 History of West Africa. 3 hrs.
PSCI 300 Urban Politics in the United States. 3 hrs.
PSCI 341 African Political Systems. 4 hrs.
PSCI 346 Women in Developing Countries (Africa). 4 hrs.
SOC 200 Principles of Sociology. 3 hrs.
SOC 210 Modern Social Problems. 3 hrs.
SOC 314 Ethnic Relations. 3 hrs.
SOC 353 The City and Society. 3 hrs.
SOC 454 Juvenile Delinquency. 3 hrs.
SOC 456 Social Stratification (both SOC 454 and SOC 456 require either SOC 200 or SOC 210 as a prerequisite). 3 hrs.
WMS 401 Foundations of Feminist Theory. 3 hrs.

Humanities Courses
COM 305 Special Topics—African-American in Mass Communication. 3 hrs.
COM 474 Intercultural Communication. 3 hrs.
ENGL 223 Black American Literature. 4 hrs.
ENGL 314 African Literature. 3 hrs.
ENGL 484 Multicultural American Literature for Children (Requires Prerequisites). 4 hrs.
ENGL 583 Multicultural American Literature for Adolescents (Requires Prerequisites). 4 hrs.
LANG 375 Foreign Literature in English Translation. 4 hrs.
MUS 151 Music Appreciation. 3 hrs.
REL 100 Religions of the World. 4 hrs.
REL 307 The Islamic Tradition. 4 hrs.
REL 304 African Religions. 3 hrs.
THEA 105 Introduction to Black Theatre. 3 hrs.

Capstone Experience
The Capstone Experience is an opportunity for the student to utilize the skills that have been accumulated in the program. The experience involves participating in an internship/practicum where knowledge would be directly put into practice. Students will be guided through this experience led by a member of the BAS core faculty and an appropriate person(s) from the student's disciplinary major department. Students must have completed a minimum of 15 credit hours toward the BAS major before enrolling for the Capstone Experience and must apply for admission to the program director.

BAS MINOR
A minor will consist of the four undergraduate courses (BAS 200, 300, 500, and 314 or 320) and at least 8 hours of departmental courses.

The student will select the general minor in consultation with the Director of Black Americana Studies and an advisor.

Black Americana Studies Courses (BAS)
A list of approved General Education courses can be found in "Graduation Requirements and Academic Advising" 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 African 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 colonial world 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 African-Americans, 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 adjustments 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. Students will examine how the Black presence altered the race of idea 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 the 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 effect of slavery on both the victims and the victimizers, the search and the victimization 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 Black Experience with a seminar and internship/practicum where knowledge would be directly put into practice. Students will be guided through this experience led by a member of the BAS core faculty and an appropriate person(s) from the student's disciplinary major department. Students must have completed a minimum of 15 credit hours toward the BAS major before enrolling for the Capstone Experience and must apply for admission to the program director.

BAS 314 The Black Community
3 hrs.
An investigation of the Black Experience with a seminar and internship/practicum where knowledge would be directly put into practice. Students will be guided through this experience led by a member of the BAS core faculty and an appropriate person(s) from the student's disciplinary major department. Students must have completed a minimum of 15 credit hours toward the BAS major before enrolling for the Capstone Experience and must apply for admission to the program director.

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 is focused 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 their contributions 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 development of Black Pop Culture in the twentieth century, its developmental stages and its emergence as the nucleus of Pop Culture in "mainstream" America. Students will study 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 involvement of Blacks into Michigan, investigate patterns of settlement, reactions to the migration 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.
A survey of the dynamics of the Black woman's interactions with Black men in a variety of contemporary settings. Students are expected to assist in the conduct and documentation of the proceedings of the annual Black Male-Black 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 universal 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.

Criminal Justice Program

Ronald C. Kramer, Director
2407 Sangren Hall
(616) 387-5284
Amy Doxtater, 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 Institute

Charles Ide, Director
College of Arts and Sciences
(616) 387-5159

The Environmental Institute houses both the Environmental Research Center and the Environmental Studies Program. The Environmental Research Center was established in 1997 as a collaborative center for environmental research and training. The Center’s faculty includes more than 35 faculty with a broad spectrum of the disciplines. The goal of the Center is to develop interdisciplinary approaches to the study of environmental problems. The Center includes faculty from the Departments of Biological Sciences, Chemistry, Economics, Environmental Studies, Geography, Geology, Political Science, Mathematics and Statistics, and Sociology.

Central to the Environmental Studies Program is a concern for the long-term health and well-being of the planet and its inhabitants (sustainability in the broadest sense of the term), and a commitment to thoughtful action designed to protect and promote that state of health and well-being. 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.

Environmental Studies
Kenneth Dahlberg, Director
229 Moore Hall
Molly Cole, Program Coordinator
229 Moore Hall
(616) 387-2716
John Cooley
Kenneth Dahlberg
Harold Glasser
David Hargreave
Michael Swords

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 choose the Environmental Studies major will satisfy the Baccalaureate Writing Requirement by successfully completing ENVS 320 Major Environmental Writings.

Liberal Education/General Education Requirements
Students in any curriculum 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). Those students enrolled in the Arts and Sciences LEC curriculum will be deemed to have also satisfied the second required course from the LEC core in Areas V and VI.

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 a 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 the EVS major as their first or degree major. If the Environmental Studies major is selected as the degree major, the student will graduate with either 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.

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 that disciplinary major as well as all University degree requirements.

ENVIRONMENTAL STUDIES MAJOR
35–36 hrs., plus cognates

Program Introduction
ENVS 110 Introduction to Environmental Studies .............. 3

Conceptual Foundations
The 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.

ENVS 210 Environmental Ecology .............. 3
ENVS 220 Environmental Physical Science .............. 4
ENVS 230 Environmental Environmental Science .............. 3
ENVS 240 Cultures and Global Change .............. 3
ENVS 250 Political Economy of the Environment .............. 3

Skills and Vision
The prerequisites for all three courses below are ENVS 110 and all 2nd Sciences courses listed above, or approval of a program advisor.

ENVS 320 Major Environmental Writings (should be taken before ENVS 360) .............. 2
ENVS 350 Environmental Problem Solving .............. 4

INTERDISCIPLINARY PROGRAMS 47
A minimum of four semester hours required from the 400-level courses listed above, or approval of a program advisor.

ENVS 401 Selected Environmental Topics 3 hrs.

ENVS 410 Appropriate Technologies and Sustainability 3 hrs.

ENVS 420 Internship 1-3 hrs.

ENVS 430 Environmental Projects 1-4 hrs.

ENVS 440 Field Experience 1-4 hrs.

Capstone
The prerequisites are ENVS 350 and ENVS 360, or approval of a program advisor.

ENVS 450 Senior Seminar in Environmental Studies 3 hrs.

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.

Program Introduction
ENVS 110 Introduction to Environmental Studies 3 hrs.

Conceptual Foundations
The 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, Economics, Geography, 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.

ENVS 210 Environmental Ecology 3 hrs.

ENVS 220 Environmental Physical Science 3 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.

Skills and Vision
The 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 with approved majors. Those electing a teaching minor in Environmental Studies must successfully complete all of the requirements of the non-teaching minor (see above), plus an approved environmental/outdoors education course (2-4 hours) chosen in consultation with a program advisor.

Environmental Studies Courses (ENVS)

ENVS 110 Introduction to Environmental Studies 3 hrs.

This course is an interdisciplinary introduction to the study of environmental concerns open only to those enrolled as majors or 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 of various sizes and degrees of complexity. Drawing from the disciplines of ecology and human biology, it emphasizes how individual organisms, natural populations, biotic communities and ecosystems vary, how they are interconnected, and how human activities influence the complex interrelationships within and among them. Prerequisite: ENVS 110 or approval of a program advisor.

ENVS 220 Environmental Physical Science 4 hrs.

Students develop 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 ability 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.

A global cross-cultural overview of various techno/economic systems. Various types of past and present cultural and technological systems, from small-scale rural tribal communities to large-scale industrial societies, will be discussed in terms of their adaptiveness. Global threats to current societies will be reviewed in terms of the debates over global warming and the loss of biodiversity. Case studies of different approaches to development will be used to develop criteria to evaluate which will better mitigate global threats and be sustainable. Prerequisite: ENVS 110 or approval of a program advisor.

ENVS 250 Political Economy of the Environment 3 hrs.

This course will cover the major concepts of political and economic systems, from small-scale rural tribal communities to large-scale industrial societies, will be discussed in terms of their adaptiveness. Global threats to current societies will be reviewed in terms of the debates over global warming and the loss of biodiversity. Case studies of different approaches to development will be used to develop criteria to evaluate which will better mitigate global threats and be sustainable. Prerequisite: ENVS 110 or approval of a program advisor.

ENVS 260 Environmental Studies 3 hrs.

This course will cover the major concepts of environmental studies 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 270 Environmental Ethics 3 hrs.

This course will cover the major concepts of environmental ethics 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 280 Environmental Law 3 hrs.

This course will cover the major concepts of environmental law 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 290 Environmental Policy 3 hrs.

This course will cover the major concepts of environmental policy 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 300 Environmental 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 parameters, 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 import, to introduce students to the wisdom and the variety of voices speaking on behalf of the environment and environmentally responsible courses of human action. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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 this through 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.
Center draw heavily on courses in the College conjunction with a standard major) and minors. These programs include interdisciplinary courses in different settings will be discussed and mini-assessments will be conducted. Prerequisite: Required conceptual foundations courses or approval of a program advisor.

ENV 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 professionals. Students will gain "hands on" knowledge and add an important non-academic dimension to their resumes. Prerequisite: Approval of program advisor.

ENV 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 a program advisor.

ENV 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.

ENV 450 Senior Seminar in Environmental Studies 3 hrs.

A team-taught, integrated capstone experience involving a semester-long environmental problem-solving/planning simulation. Students will be evaluated in terms of their ability to function individually and with their colleagues in a simulated professional work environment. As the capstone course, this should normally be the last course taken from the program. Prerequisites: ENV 350 and ENV 360, or approval of a program advisor.

Diether H. Haenicke Center for International and Area Studies

Ronald W. Davis, Director
B200 Elsworth Hall
(616) 388-3007
EMAIL: ronald.davis@wmich.edu

The Diether H. Haenicke Center for International and Area Studies houses a family of interdisciplinary programs devoted to the study of major areas and regions of the world, and to global and international developments and institutions. These programs include coordinate majors (which must be taken in conjunction with a standard major) and minors. Interdisciplinary programs in the Haenicke Center draw heavily on courses in the College of Arts and Sciences, as well as offerings from other colleges. They provide a broad variety of intellectual and experiential stimuli designed to promote an understanding of large geographical regions, and the nature of interactions among cultures and nations of the world. In addition, the programs strongly encourage foreign language study and study abroad.

Haenicke Center programs are designed for students planning careers in international business, education, government, or other professions in which success would be enhanced by an understanding of diverse cultural practices around the world. They also provide preparation for systematic study of geographical and cultural regions at the graduate level.

African Studies Program

COORDINATE MAJOR OR MINOR

Sisay Asefa (Economics), Advisor
5418 Friedmann Hall
(616) 387-5545
Email: asefa@wmich.edu

The African Studies Program is an interdisciplinary, internatonal education program of concentrated study leading to a coordinate major or regular 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 variety of African cultures and their achievements; to stimulate acquisition of languages spoken in Africa and knowledge about contemporary African affairs; and to provide a forum for the exchange, analysis, and evaluation of information and ideas concerning U.S.—Africa 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 1–6
*ANTH 341 Cultures of Africa 3
BAS 300 African Beginnings to 1865 3
ECON 108 Contemporary International Economic Issues 3
ECON 380 International Economics* 3
ECON 484 Comparative Economic Systems* 3
*ENGL 314 African Literature 3
*GEOG 385 The Pacific Realm 3
*GEOG 386 Sub-Saharan Africa 3
GEOG 387 Geography—Africa 3
*HIST 388 Introduction to African Civilization 3
HIST 485 Early Islam 3
HIST 488 History of West Africa 3
HIST 489 History of Africa and Asia* 3
HIST 495 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.

INTERDISCIPLINARY PROGRAMS

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
(616) 387-4648

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 transfer, economic development, cross-cultural negotiations, 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 must take 24 credit hours of approved Asian Studies courses. An Asian language e.g. Chinese 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 1–6
ANTH 240 Principles 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 3
* ENGL 314 African Literature 3
* ECON 380 International Economics* 3
* GEOG 387 Geography—Africa 3
* HIST 388 Introduction to African Civilization 3
* HIST 485 Early Islam 3
* HIST 488 History of West Africa 3
* HIST 489 History of Africa and Asia* 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

Enrollment in the program requires 24 semester hours of approved Asian Studies courses.

COORDINATE MAJOR

A-S 330–331 Study Abroad 1–16
A-S 404–405 Foreign Studies 1–6
ANTH 240 Principles of Cultural Anthropology* 3
ANTH 340 Cultures of Asia* 3
ANTH 332 Topics in World Cultural Areas* 3
* BUS 594 International Business 3
* 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 International Economics 3
* ECON 588 Economic Development* 3
* ENGL 313 Asian Literature 3
* GEOG 385 The Pacific Realm 3

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 1–6
ANTH 240 Principles 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 3
* 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 International Economics 3
* ECON 588 Economic Development* 3
* ENGL 313 Asian Literature 3
* GEOG 385 The Pacific Realm 3
European Studies Program

COORDINATE MAJOR

William Ritchie (Political Science), Advisor
3412 Friedmann Hall
(616) 387-5698

The courses for this program concentrate on the European area. They are drawn from fifteen 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 broaden 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 provide 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 want 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 any of the following options concerning these specific areas:
   - British Studies
   - Germanic Studies
   - Romance 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 fine tuning. 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, 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 satisfy the Baccalaureate Writing Requirement by successfully completing the designated course in their standard 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 requirements. The language requirement can be waived only by written approval of the European Studies advisor. In case the student obtains permission to waive a 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, participation 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 satisfy 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
(616) 387-5698

The Coordinate Major in British Studies is designed to complement, not substitute for, conventional major programs in the various departments of the University. 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 hour credits 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 approved are included in the list below.

Students should consult with the advisor as to additions or changes.

A-S 330-331 Study Abroad
A-S 404-405 Foreign Studies Seminars
including the Oxford Seminar and Studies in Theatre, Music, Art, Literature and Communication
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 383 Britain and the British Empire
HIST 460 Europe: 1945-Present
HIST 462 Great Britain in English History
HIST 561 Victorian England
PSCI 340 West European Political Systems
Students in Germanic Studies usually combine a major in a conventional academic discipline with a broader study of the culture, history, literature, politics, geography, and economics of the Germanic areas of Europe. Travel and study in the particular areas are encouraged whenever possible. Study abroad opportunities, including exchange programs with German universities, are made available through The Office of International Affairs.

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 the Modern World 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 12 credit hours or the corresponding knowledge of German or another Germanic language area, required together with two core courses drawn from the list below.

**CORE COURSES**
- GEOG 383 Western and Southern Europe
- HIST 460 Europe Since 1945
- PSCI 340 Western European Political Systems

**A SELECTION OF GERMANIC STUDIES COURSES**
- A-S 330-331 Study Abroad
- A-S 404-405 Foreign Studies
- ART 221 History of Art
- ART 585 History of Renaissance Art
- ART 586 History of Baroque Art
- ART 591 History of Modern Architecture
- ECON 484 Comparative Economic Systems
- ENGL 410 Norse Literature and Mythology in Translation
- GER 200-201 Intermediate German
- 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 574 Romantic Music
- PHIL 301 History of Modern Philosophy
- PHIL 303 Existentialist Philosophies
- PSCI 555 International Law
- REL 305 The Christian Tradition

In addition, departments often offer seminars, independent studies, and variable topic 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

William A. Ritchie (Political Science), Advisor

European Studies Program

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 study, not only 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 knowledge of the cultural life of Western Europe. Courses may include music, political science, history, 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 Minor in Romance 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 outside of the United States may 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 101–102 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
- HIST 460 Europe Since 1945
- PSCI 340 Western Europe Political Systems

**OPTIONAL COURSES**
- A-S 330-331 Study Abroad
- A-S 404-405 Foreign Studies
- ANTH 343 Cultures of Europe
- ART 221 History of Art
- ART 585 History of Renaissance Art
- ART 586 History of 17th Century Art
- ART 589 History of 20th Century Art
- ART 590 History of 20th Century Art, 1945-present
- ECON 484 Comparative Economic Systems
- ENGL 442 Modern Drama
- FREN 200-201 Intermediate French
- FREN 316 French Composition
- FREN 317 French Conversation
- FREN 322 French Civilization
- FREN 328 Introduction to French Prose, Poetry and Drama
- FREN 344 Summer Study in France
- FREN 477 French Study
- HIST 452 The French Revolution and Napoleon
- HIST 458 Europe 1815–1871
- HIST 457 Europe 1871–1919

**INTERDISCIPLINARY PROGRAMS**
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 GEOG 382 are recommended. Students enrolled in this minor are strongly urged to acquire a proficiency in Spanish especially through study abroad experience.

Students wishing to enroll in this minor concentration should make this desire known to the Latin American studies advisor before courses 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 certificates 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 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
ECON 389 Latin America's Economy 3
ECON 381 South America 3
ECON 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 4
SOC 335 Modern Latin American Societies 3
SPAN 323 Life and Culture of Latin America 3
SPAN 477 Study Abroad 1-16
SPAN 528 Survey of Spanish American Literatures Modernismo to Present 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 WMU 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.

Russian and East European Studies
COORDINATE MAJOR AND MINOR
James Butterfield (Political Science), Director 3352 Friedmann Hall 387-5696
Dasha Nisula (Foreign Languages and Literatures), Advisor 413 Sprau Tower 387-3005

The 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.

WMU hosts its own study abroad site in Saratov, Russia. A major provincial center located on the Volga, Saratov University offers a range of Russian language courses and direct enrollment opportunities for students of various disciplines. Credit earned in the Saratov program can be applied toward a Russian and East European Studies Coordinate major or minor as well as a Russian language minor. For more information, see the Saratov Study Abroad Web Site at http://www.wmich.edu/oia/spa/saratov/saratov.html.

A student who enrolls in this Coordinate Major in Russian and East European Studies must take at least 24 credit hours of course work distributed as follows. All courses must be passed with a grade of "C" or better.

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.

ECON 385 Central European, East European and Central Asian Economies 3
GEOG 384 Post-Soviet States 3
HIST 366 Soviet Union 3
HIST 465 Russia to 1855 3
HIST 466 Russia Since 1855 3
LANG 375 Russian Literature in Translation 3
PSCI 344 Russian and East European Politics 4
RUS 316 Russian Composition 3
RUS 317 Russian Conversation 3
RUS 325 Introduction to the Study of Russian Literature 3
RUS 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. All courses must be passed with a grade of "C" or better.

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 Russia and other countries in Eastern Europe.

The Medieval Institute
Paul E. Szarmach, Director and Advisor 100E Walwood Hall 387-8745

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.

MEDIEVAL STUDIES, MINOR PROGRAM
Students with an undergraduate minor must complete twenty-four hours, to include the following:

1. MDVL 145 Heroes and Villains of the Middle Ages 3
2. HIST 360 The Medieval World: Society and Culture 3
3. MDVL 500 Interdisciplinary Studies in Medieval Culture 3
4. Fifteen additional hours of coursework selected from the list below, with the approval of the Director. The student should take care that the courses selected represent the interdisciplinary nature of Medieval Studies; therefore, no maximum of two courses from each category may be credited toward the minor.

APPROVED COURSES

Fine Arts
ART 583 History of Medieval Art 3
MUS 517 Collegium Musicum 1
MUS 595 Medieval Music 2
Office of Admissions and Advising 2504 Sangren Hall

The minor is open only to students enrolled in the elementary education or special education curriculum. Transfer students will need to have their previous course work in science 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. Mathematics courses must be taken in sequence, and a "C" grade is required in each. Minimum 2.0 GPA required in this minor.

Required Courses:

- SCI 170 Life Science for Elementary Educators I 3 hrs.
- SCI 270 Life Science for Elementary Educators II 3 hrs.
- SCI 180 Physical Science for Elementary Educators I 3 hrs.
- SCI 280 Physical Science for Elementary Educators II 3 hrs.
- SCI 190 Earth Science for Elementary Educators I 3 hrs.
- SCI 290 Earth Science for Elementary Educators II 3 hrs.
- MATH 150 Number Concepts for Elementary/Middle School Teachers 4 hrs.
- MATH 151 Geometry for Elementary/Middle School Teachers 4 hrs.
- MATH 265 Probability and Statistics for Elementary/Middle School Teachers 4 hrs.

ADDITIONAL SOCIAL STUDIES PROGRAMS

Two additional interdisciplinary Social Studies programs are available through the Division of Continuing Education listed under General University Studies Curriculum. The first is social science studies—interdisciplinary, the second is criminal justice. The latter program is designed for students possessing an Associate Degree—Criminal Justice, Law Enforcement, or Police Science from a community college who desire the bachelor's degree in this field.

For more detailed information see a description of these programs in the Undergraduate Catalog under the heading "Division of Continuing Education." (Contact one of the Western Michigan University Regional Centers in Battle Creek, Benton Harbor, Grand Rapids, Lansing, or Muskegon.)

Women's Studies Programs

WMS 200 Introduction to Women's Studies 4

WMS 300 Working Women, Past, and Present 3

WMS 320 Women, Multiculturalism, and Social Change 3

WMS 401 Foundations of Feminist Theory 3

WMS 500 Seminar in Women's Studies 3

WMS 510 Internship Seminar 3

The following selected from WMS approved courses at the 300 or 400 level. At least:

- One course in Multicultural or Global Studies.
- 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 (16 hours)

- Electives to be taken from the WMS approved courses

WMS APPROVED ELECTIVES

For specific descriptions of the courses consult the departmental sections of the
Women’s Studies Courses (WMS)

A list of approved General Education courses can be found in the Graduation Requirements and Academic Advising earlier in this catalog. The world literature minor can provide useful backgrounds 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.

Women’s Studies provides analytical frameworks for the study of gender-indefining institutions, focusing on women in American society. Course emphasizes approaches that recognize the diversity and similarity of women’s experience 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.

The course will provide an interdisciplinary analysis of the impact social institutions have on the lives of women as well as the influence women have on those same institutions. The focus will be on social change and gender role awareness in the media, medicine, law, education, business, and politics. This course may be taught in a seminar format.

WMS 320 Women, Multiculturalism, and Social Change 3 hrs.

This course focuses on the interrelationships of women, multiculturalism, and social change. The course pursues an interdisciplinary analysis of multicultural gender roles and change in social institutions, such as law, medicine, education, media, business, and politics. Study will consider gender, ethnicity, class, and cultural experience in the context of national and global forces. Prerequisite: WMS 200.

WMS 330 Gender Issues in Education 3 hrs.

Various gender issues in education are studied from both an historical and a contemporary perspective. The course will analyze current research on self-esteem and gender inequities in education and seek solutions. Attention will be given to theoretical and pedagogical concerns and to development issues affecting students.

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. Full-time baccalaureate-level writing requirement. 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 prerequisites for admission of undergraduates to 500-level Women’s Studies classes are 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.
2. Two or three courses (i.e. at least eight semester hours) selected from the following list:
   ENGL 110 Literary Interpretation ........ 4
   ENGL 210 Film Interpretation ........... 4
   ENGL 252 Shakespeare .................. 4
   ENGL 312 Western World Literature, if not used under Requirement (1) ........ 3
   ENGL 313 Asian Literature, if not used under Requirement (1) ........ 3
   ENGL 314 African Literature, if not used under Requirement (1) ........ 3
   ENGL 315 The English Bible as Literature .................. 3
   ENGL 410 Special Topics in Literature (If the topic is appropriate it may be approved by the minor advisor.) ........ 4
   ENGL 442 Modern Drama ................ 4
   ENGL 530 Medieval Literature in English Translation ................ 3
   ENGL 538 Modern Literature ............ 3
   ENGL 555 Studies in Major Writers (If the authors studied are appropriate, this course may be approved by the minor advisor) .................. 3
   ENGL 598 Readings in English: Independent Study (with the approval of the minor advisor) ........ 1-4

3. Three courses selected from the following list:
   LANG 350 Classical Greek and Roman Mythology ................ 3
   LANG 375 French Literature in English Translation ................ 3
   LANG 375 German Literature in English Translation ................ 3
   LANG 375 Russian Literature in English Translation ................ 3
   LANG 375 Spanish Literature in English Translation ................ 3
   LANG 375 Spanish-American Literature in English Translation ........ 3
   LANG 375 Classical Literature in English Translation ............ 3

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 .................. 3
   THEA 570 Devel. of Theatre Arts ................ 3
   OR
2. Substitute an advanced literature course in a foreign language for one of the courses listed above in either Requirement 2 or Requirement 3.
   OR
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.

AFRICAN STUDIES PROGRAM
See "Interdisciplinary Programs" in the College of Arts and Sciences.

ANTHROPOLOGY
Robert Ulin, Chair
Robert Anemone
James Clifton
Linwood Cousins
William Cremin
Arthur Helweg
Erika Loefter
Vincent Lyon-Callo
Ann Miles
Rosario Montoya
Michael Nassenhay
Tal Simmons
Robert Sundick
Allen 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 appropriate programs.

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 150
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 439 Issues in South American Ethnography
ANTH 440 Ethnography
ANTH 450 Primate Behavior and Ecology

Anthropology Courses (ANTH)

A list of approved General Education courses can be found in "Graduation Requirements and Course Descriptions" in this catalog.

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 150 Race, Biology, and Culture 3 hrs.
This course is an introduction to the anthropological study of human biological variation in modern populations. We will examine from a biocultural perspective how human populations adapt to life in difficult environments (e.g., tropics, high altitude, arctic) and in so doing, we will explore the biological and social meanings of human racial variation.

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 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-flung 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 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, palaeopathology, 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 the sexes, and ideologies supporting the differences. This course, biological and cross-cultural data will be used to explore the foundation of this process and the 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 390 Archaeological Field School 6 hrs.
Archaeological investigation of specific problems relating to the prehistory or history of 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 consent of instructor.
permission of instructor, but does not count toward the anthropology major or minor twice. Prerequisite: ANTH 210 or consent of instructor.

**ANTH 400 Midwest Prehistory**
3 hrs.
A survey of developments in the midcontinent from the arrival of human populations during the Ice Ages to the point of European contact. Emphasis will be on changing adaptive requirements of the environment over time as reflected in subsistence-settlement behavior, interaction through exchange, and societal complexity. Prerequisite: ANTH 210 or consent of instructor.

**ANTH 404 Early Technologies**
3 hrs.
This course deals with the analysis and interpretation of early technologies and technological organization and their relationship to social, political, and economic dimensions of cultural systems. Prerequisite: ANTH 210 or consent of instructor.

**ANTH 405 Archaeology of the Great Lake State**
3 hrs.
Current interpretations of Native American lifeways in the western Great Lakes from the Paleo-Indian through Early Historic periods will be reviewed, with special attention to the State of Michigan. Cultural patterns observed by explorers, traders, and missionaries entering this region in the 17th century provide the frame of reference for an examination of changing strategies for survival reflected especially in the distribution of sites (communities) across the landscape and the nature of activities undertaken from them during the past 10,000 years. Prerequisite: ANTH 210 or consent of instructor.

**ANTH 439 Issues in South American Ethnography**
3 hrs.
Employing ethnographies about South America, this course is designed to acquaint students with various methodological, theoretical, and topical orientations in ethnographies of the region. Specific issues to be considered may include the cultures of indigenous peoples, religious practices and conversions, the lives of women in indigenous and cosmopolitan settings, ethnicity and race, and the effects of "modernization" on families, children, and health. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisite: ANTH 240.

**ANTH 440 Ethnography**
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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisite: ANTH 240 or consent of instructor.

**ANTH 450 Primate Behavior and Ecology**
3 hrs.
An advanced survey of the primates. Topics include: primate characteristics; 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisite: ANTH 250 or consent of instructor.

**ANTH 488 Independent Readings in Anthropology**
1–3 hrs.
Students may contact a faculty member to undertake independent readings on a specific topic of interest. Each 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.

**ANTH 500 Topics in Anthropology**
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. 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. 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 bio-systematics of selected cultivars; and the cultural systems which have arisen from the economic foundations of plant domestication. Prerequisites: 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 social groups by analyzing and interpreting the material world. Focus will vary between complex and simple 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 societies. 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: 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, the cultural meaning of 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 from a 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 sociocultural 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 occurrence of the hominid lineage to the origin of modern Homo sapiens. Emphasized in this course will be paleoanthropological theory, issues relating to species definition and recognition, functional anatomical complexes, adaptive processes,
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. 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, paleopathology, 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.

ARABIC
See "Asian and Middle Eastern Languages" in the College of Arts and Sciences.

ASIAN AND MIDDLE EASTERN LANGUAGES

Hideo Abe, Chair
Timothy Light
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.

Minors

CHINESE MINOR
The minor in Chinese requires the completion of twenty-three hours, including 100-level, 200-level, and CHIN 316, 317 or equivalent. Completion of CHIN 477 or 550 beyond 200-level is an option.

JAPANESE MINOR
Twenty-three hours, including 100-level (basic) courses or equivalent.

Arabic (ARAB)

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 101 Basic Chinese I
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.

CHIN 316 Chinese Composition
3 hrs.
Advanced study of composition in Chinese. Emphasis is upon increasing the student's command of written Chinese. Chinese characters competency and basic skills of using Chinese word processors are reinforced. Prerequisite: CHIN 201 or equivalent.

CHIN 317 Chinese Conversation
4 hrs.
Advanced study of conversation in Chinese. Students practice spoken Chinese through role-playing, the viewing of films, discussion, and other oral activities. Emphasis on both listening and speaking of the language. Prerequisite: CHIN 201 or equivalent.

CHIN 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.

CHIN 550 Independent Study in Chinese
1-3 hrs.
Directed individual study of a specific topic in Chinese language, literature, or culture. May be repeated for credit to a maximum of three hours. Prerequisite: Completion of four courses in Chinese or equivalent; minimum grade point average of 3.0 in Chinese; departmental approval required.

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 Hiragana and Katakana). Introduction to about 25 kana, or Chinese characters, and some aspects of the Japanese culture and people. Introduction to computer-assisted Japanese language learning, including basic word-processing in Japanese.
BIOL O GICAL SCIENCES

Leonard J. Beaving, Chair
Bruce Bejek
Christine Byrd
David P. Cowan
Paul L. Durham
Ewald B. Chrisl
Robert C. Eisenberg
Alexander J. Enyedi
Karim Essani
Gyula Ficsor
John R. Gerster
Leonard C. Ginsberg
Charles Ide
William F. Jackson
John A. Jellies
David Karowe
Stephen B. Malcolm
Jay C. Mean
Richard W. Pippin
David Reinhold
Silvia Rossbach
DeWayne Shoemaker
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 and up-to-date knowledge and training in various areas of the life sciences, including medical aspects of human biology.

The Biology Major explores the broad spectrum of the life sciences with opportunities to study botany, zoology, ecology, and 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 major include: (1) providing basic training for employment in clinics and basic research laboratories, industrial laboratories, as well as 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, as well as in the the Secondary Education Curriculum.

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 3447 Wood 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.

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. The work includes two introductory courses, two intermediate level courses, two advanced interest courses, and a capstone experience. Only three credit hours may be BIOS 498 and only four hours may be BIOS 499.

INTRODUCTORY COURSE REQUIREMENTS

B IOS 150 and 151

INTERMEDIATE LEVEL COURSES

BIOS 202 or 312; 250; 319 or 350

TWO ADVANCED INTEREST COURSES

FROM THE FOLLOWING:


CAPSTONE EXPERIENCE

BIOS 497 or BIOS 499

BACCALAUREATE WRITING

REQUIREMENT

Students who have chosen the Biology major can satisfy the Baccalaureate Writing Requirement by successfully completing BIOS 319 or 350.

COGNATE REQUIREMENTS

CHEM 110 and 111; 112 and 113, 370 with 371 or 375 with 376 and 377; 376 with 356.

MATH a calculus course (122 or 200) and a statistics course (MATH 260 or 366).

PHYSICS, 2 semesters with labs. In addition, QECOL 130 is recommended for those who plan to pursue advanced degrees in Biology, Botany, and Zoology (especially in the areas of ecology and field biology).

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, one advanced interest course, and a capstone course. SED 404. Three credit hours of BIOS 498 and/or 499 may be used as the advanced interest course.

INTRODUCTORY COURSES

BIOS 150 and 151

INTERMEDIATE LEVEL COURSES

BIOS 202, 211, 250, a Microbiology course (232 or 312), BIOS 301, and a Physiology course (BIOS 319 or 350).

ONE ADVANCED INTEREST COURSE

FROM THE FOLLOWING:

BIOS 420, 425, 427, 439, 441, 455, 456, 498, 499, 518, 524, 529, 599, 530, 534, 536, 542, 547, 549, 553, 557, 574, 597 (minimum 3 hrs.).
**Biomedical Sciences Major**

**REQUIREMENTS**

A major in Biomedical Sciences (BMS) consists of a minimum of 34 credits of course work. This course work includes two introductory courses, four intermediate level courses, two advanced level interest courses, and a capstone experience. Only three credit hours may be BIOS 496 and only four hours may be BIOS 499.

**INTRODUCTORY COURSES**

BIOS 150 and 151

**INTERMEDIATE LEVEL COURSES**

BIOS 211, 250, 312 and 350.

**TWO ADVANCED INTEREST COURSES FROM THE FOLLOWING:**

BIOS 420, 425, 437, 498, 499, 507, 512, 518, 524, 531, 534, 536, 559, 560, 561, 570, 574, 597 (minimum 6 hrs.)

**CAPSTONE EXPERIENCE**

BIOS 497 or 499

**BACCALAUREATE WRITING REQUIREMENT**

Students who have chosen the Biomedical Sciences major may satisfy the Baccalaureate Writing Requirement by successfully completing BIOS 350.

**COGNATE REQUIREMENTS**

CHEM 110 and 111; 112 and 113, 375 with 371 or 375 with 376 and 377 with 378, PHYSICS, 2 semesters with labs, and GEOL 130.

**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 110 and 111. Minors in health related fields can take the following courses to fulfill a minor: BIOS 105, 112, 191 or 211, 232, 240, and one advanced elective, such as BIOS 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 the Biological Sciences, including BIOS 150, 151, 202, 250, 301, a Physiology course (240, 319 or 350) and SCI 404. Cognate requirements include: CHEM 110 and 111; CHEM 112 and 113; MATH 118 (or 122 or 200).

**Transfer Students**

A minimum of 15 hours of course work in the Biology Major, the Secondary Education Major, and the Biomedical Sciences Major must be earned at Western Michigan University. At least 12 hours in the Biological Sciences Minor must be earned at Western Michigan University. Transfer students should consult with the Undergraduate Advisor in Room 3447 Wood Hall (616-387-5617), before registering for classes.

**Biological Sciences Courses (BIOS)**

A list of approved General Education courses can be found in "Graduation Requirements and Academic Advising" earlier in this catalog.

**BIOS 105 Environmental Biology**

3 hrs. Fall, Winter

An ecology course that examines 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 the Biological Sciences minor and Liberal Education Area 6. Credit applies for Distribution Area 6 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 general 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 Biology, 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 Biology or Biomedical Sciences majors. The course fulfills Liberal Education Curriculum Area 6. If taken with BIOS 110, it fulfills Distribution Area 6.

**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. Prerequisite: 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, and 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 and 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 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 applies toward a minor in Biomedical Sciences.

**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 an identification of common organisms living in our area, hypothesis testing, data analysis, and report writing. Credit applies toward a minor in Biomedical Sciences.

**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, as well as 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. Prerequisite: 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. Interrelationships of individuals and the physical environment, dynamics of populations, as well as structure and function in the community and ecosystem are considered. Prerequisite: 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. Fall
An examination of plant functions and metabolism. The chemical elements essential for plant growth are studied, along with processes, such as photosynthesis, through which these elements combine to form the components of cells and tissues. The lab uses up-to-date techniques and equipment to investigate processes such as enzyme action and the movement of substances through membranes. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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 this 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, laboratory instrumentation, data organization and scientific writing. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: BIOS 250 and organic chemistry; anatomy is recommended.

BIOS 401 Pathogenic Microbiology for Physicians
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 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 botanical 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. Prerequisites: 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 biometric and chromosomal abnormalities. Developmental and mental retardation, genetic counseling and the ethical and legal implications of genetic counseling are discussed. Prerequisite: BIOS 250.

BIOS 425 Genetics Laboratory
3 hrs. Winter (alternate years)
A study of 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 studied in lectures, in the field, and the laboratory experiences, using vascular plants as examples. Evolutionary trends, family 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 microscopic anatomy and function 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 anatomy, physiology, embryology, and life history of selected 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 456 Tropical Biology
3 hrs. Spring
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. Ecological fields, 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 capstone course integrates a variety of biological concepts within a selected broad topic. The student makes a technical presentation and submits a paper on a selected subject. The student's record will indicate the nature of the seminar in which he/she has participated. Not repeatable for credit. Prerequisite: Senior standing and an approved major slip.

BIOS 498 Readings in Biological Sciences
1-3 hrs. Fall, Winter
Approved upon request.

BIOS 499 Independent Research in Biological Sciences
1-4 hrs. Fall, Winter, Spring, and Summer
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. Prerequisites: Approved application, junior standing, and a declared major in the Biological Sciences Department.

The prerequisites to 500-level courses are: Junior/Senior standing and at least 12 credits in biology including the specific prerequisite for each course.

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, amphetamine, heroin, methadone, LSD, PCP, and nicotine. Prerequisites: An introductory physiology course or enrollment in SPADA (Specialty Program in Alcohol and Drugs).

BIOS 512 Environment and Health Problems
3 hrs.
Human activities impact the environment and environmental factors impact health. Human environment interactions are often not optimal or without cost. In this course we seek sustainable solutions to environment and health problems. May not be taken for credit with BIOS 497 Senior Seminar with similar topic.

BIOS 518 Endocrinology
3 hrs. Winter (alternate years)
A survey of the hormonal integration of organ-system function including the chemical nature of these secretions and the 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 350; 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, and bryophytes. 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 phylogeny 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. Prerequisite: 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 anatomic, 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. Prerequisites: 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 effects, 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. Prerequisite: 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. Streams, lakes and ponds 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. Prerequisite: 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 system 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, aquatic and ecological systems will be explored. Topics will include bioaccumulation, distribution and excretion 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. Chemodynamic processes which control exposure of organisms will be presented in the context of risk assessment, and the problems inherent in predicting and quantifying risks will be discussed. This course is cross-listed with CHEM 558. Prerequisites: BIOS 350, and chemistry through biochemistry, or permission of instructor.

BIOS 561 Pharmacology
3 hrs. Winter (alternate years)
The study of the mode of action of drugs 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 course in organic chemistry.

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 a course in 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.

CANADIAN STUDIES PROGRAM
See "Interdisciplinary Programs" in the College of Arts and Sciences.

CHEMISTRY
Jay C. Means, Chair
Steven B. Bertman
Brian Buffin
Susan E. Burns
John E. Chateauneuf
Michael R. Dziewiatkowski
James A. Howell
Yi-Fing Liu
Michael E. McCarville
John B. Miller
Marc W. Perkovic
David S. Reinhold
Elke Schoffers
Donald R. Schreiber
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, 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 110 General Chemistry I
CHEM 111 General Chemistry Laboratory I
CHEM 112 General Chemistry II
CHEM 113 General Chemistry Laboratory 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 Multivariate Calculus and Matrix Algebra

PHYS 205 and 206 Mechanics and Heat
PHYS 207 and 208 Electricity and Light

Junior Year:
CHEM 225 Quantitative Analysis
CHEM 226 Quantitative Analysis Laboratory
CHEM 430 Physical Chemistry I
CHEM 431 Physical Chemistry II
CHEM 436 Physical Chemistry Laboratory I

Senior Year:
CHEM 437 Physical Chemistry Laboratory II
CHEM 520 Instrumental Methods
CHEM 515 Inorganic Chemistry

The ACS major student must also complete either CHEM 355, Introductory Biochemistry, or both semesters of the 500-level Biochemistry sequence: CHEM 550, Biochemistry I, or CHEM 552, Biochemistry I with Lab, and CHEM 554, Biochemistry II.

Students electing to enroll in CHEM 355 must also complete an additional 3- or 4-hour 500-level chemistry elective, or an appropriate mathematics or physics course, as approved by the Chemistry advisor.
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 110 and 111 and 103. 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.

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 their last 14 credit hours or 7 credit hours, respectively, in the Chemistry Department. These should be taken 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 number of courses under the credit/no credit option.

Students who fail to earn a grade of 'C' or better in CHEM 112, 375, and 430 must not enroll in courses requiring these classes as prerequisites.

Students who have chosen a Chemistry major will satisfy the Baccalaureate-Level Writing Requirement by successfully completing CHEM 436 Physical Chemistry Laboratory I.

LEC Chemistry Major

The Arts and Sciences curriculum (LEC) Chemistry Major requires 34 hours in chemistry, including the basic sequence through Physical Chemistry as in the A.B.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 Major

The Secondary Education Chemistry Major requires 30 hours of chemistry courses as in the Arts and Sciences major described above, including a minimum of 4 hours of Physical Chemistry.

Biochemistry Major

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 100 Introduction to General Chemistry 4 hrs. Fall, Winter
CHEM 110 General Chemistry I 4 hrs. Fall, Winter (Required for students without high school chemistry or to those who demonstrate inadequate retention of their 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 101 General Chemistry I 4 hrs. Fall, Winter
CHEM 102 General Chemistry II 4 hrs. Fall, Winter
CHEM 110 General Chemistry I 4 hrs. Fall, Winter
CHEM 111 General Chemistry Laboratory I 1 hr. Fall, Winter
CHEM 112 General Chemistry II 4 hrs. Fall, Winter
CHEM 113 General Chemistry Laboratory II 1 hr. Fall, Winter
CHEM 100 Introduction to General Chemistry 4 hrs. Fall, Winter (Required for students without high school chemistry or to those who demonstrate inadequate retention of their 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.
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CHEM 102 General Chemistry II 4 hrs. Fall, Winter
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CHEM 103 General Chemistry I
4 hrs. Fall, Winter
A course primarily for students in Engineering and Applied Sciences curricula and others planning only 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 112 and 113 if passed with a grade of "C" or better. This course includes lectures and laboratory. Student can receive credit for only one of CHEM 101, 110 and 113, 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 105 Textiles and Design Media Chemistry
3 hrs.
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 in home economics who plan a career in merchandising, or other students of art and applied science who handle the materials considered. Not applicable for major or minor in chemistry, nor as a prerequisite to other chemistry classes. (To count for general education credit, both CHEM 105 and 106 must be passed.) Corequisite: CHEM 106.

CHEM 106 Textiles and Design Media Laboratory
1 hr.
The companion laboratory course to CHEM 105. (To count for general education credit, both CHEM 105 and 106 must be passed.) Corequisite: CHEM 105.

CHEM 110 General Chemistry I
3 hrs.
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 an examination. Student can receive credit for only one of CHEM 101, 103, 110 and 111. Prerequisite: One year of high school chemistry; passing the chemistry placement examination; or applicable school chemistry; passing the chemistry placement examination.

CHEM 111 General Chemistry Laboratory I
1 hr.
The companion laboratory course to CHEM 110. This course is also intended for students who completed a general chemistry course without laboratory at another institution. Corequisite: CHEM 110 (unless successfully completed in a prior term) or applicable transfer credit. (To count for general education credit, both CHEM 110 and 111 must be passed.)

CHEM 112 General Chemistry II
1 hr.
The properties of a number of the more representative elements and the compounds which they form are studied. Chemical relationships in the periodic table, electrochemistry, and the equilibrium principle are also treated. Prerequisites: CHEM 110 and 111.

CHEM 113 General Chemistry Laboratory II
1 hr.
The companion laboratory course to CHEM 112. Corequisite: CHEM 112 (unless successfully completed in a prior term).

CHEM 151 Chemistry for Health Professionals I
3 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. Corequisite: CHEM 152 (unless successfully completed in a previous semester).

CHEM 152 Chemistry for Health Professionals II
1 hr.
This laboratory course is designed to complement CHEM 151. Corequisite: CHEM 151 (unless CHEM 151 has previously been successfully completed).

CHEM 153 Chemistry for Health Professionals II
3 hrs.
The continuation of CHEM 151, emphasizing biochemistry. This course does not satisfy curricular requirements for chemistry outside the College of Health and Human Services, nor the chemistry requirements of the Physician Assistant Program. Prerequisites: CHEM 151 and 152. Corequisite: CHEM 154 (unless successfully completed in a prior term).

CHEM 154 Chemistry for Health Professionals II Lab
1 hr.
This is the laboratory course which should be taken concurrently with CHEM 153. Prerequisites: CHEM 151 and 152. Corequisite: CHEM 153 (unless successfully completed in a prior term).

CHEM 190 Chemistry in Society
3 hrs.
This course provides an overview of fundamental chemical principles so that the impact of chemistry on topics of importance to society may be discussed. These topics may include such areas as chemistry of the environment (air and water), radioactivity, energy sources, materials, household products, plastics, and food chemistry. Credit does not apply for a major or minor in chemistry. Prerequisite: MATH 110. Corequisite: CHEM 191 (unless successfully completed in a prior term). (To count for general education credit, both CHEM 190 and 191 must be passed.)

CHEM 191 Chemistry in Society Laboratory
1 hr.
This is the laboratory portion of CHEM 190 which must be taken concurrently with or after passing CHEM 190. Prerequisite: MATH 110. Corequisite: CHEM 190. (To count for general education credit, both CHEM 190 and 191 must be passed.)

CHEM 200 Chemical Science in Elementary Education
4 hrs. Winter
This course is designed to help students understand the chemical nature of the world around them and how the behavior of things depends on chemical makeup and physical conditions. Demonstrations and experiments will show how these ideas can be made meaningful to students in the context of everyday experiences and commonly encountered materials. Credit does not apply for a major or minor in chemistry.

CHEM 225 Quantitative Analysis
3 hrs. Fall, Winter
This course includes the theory, techniques, and calculations of quantitative analysis. Instrumental techniques are used to supplement classical analytical procedures in the laboratory. Prerequisites: CHEM 112 and 113. Corequisite: CHEM 226 (unless successfully completed in a prior term).

CHEM 226 Quantitative Analysis Laboratory
1 hr.
This is the laboratory course which should be taken concurrently with CHEM 225. Prerequisite: CHEM 112 and 113. Corequisite: CHEM 225 (unless successfully completed in a prior term).

CHEM 350 Biochemistry for Physician's Assistant
3 hrs. Winter
This course emphasizes those aspects of biochemistry that are required for an understanding of physiology and pharmacology. The focus includes; metabolism, bioenergetics, pH control systems, oxygen-carbon dioxide transport and some aspects of nutrition, disease and hormone action. Prerequisite: PA Curriculum and CHEM 370 or CHEM 371 or CHEM 377 and CHEM 378.

CHEM 355 Introductory Biochemistry
3 hrs. Winter
A basic course in the chemistry and metabolism of carbohydrates, lipids, proteins, and nucleic acids. Prerequisites: CHEM 370 AND CHEM 371; or CHEM 377 and CHEM 378.

CHEM 356 Introductory Biochemistry Laboratory
1 hr.
Basic biochemistry laboratory techniques. Isolation and properties of proteins, enzymes, carbohydrates, lipids and nucleic acids. Use of instrumentation for bioanalytical determinations. Prerequisite or corequisite: CHEM 355 or CHEM 550.

CHEM 370 Introduction to Organic Chemistry
3 hrs. Fall, Winter
A one semester course which surveys the chemistry of aliphatic and aromatic carbon compounds, designed for those needing a working knowledge of organic chemistry without the theoretical detail of a full year course. Prerequisites: CHEM 112 and 113. Credit may not be received for both CHEM 370 and CHEM 357. CHEM 370 is not a satisfactory prerequisite for CHEM 377. It is strongly recommended that students take CHEM 371 concurrently.

CHEM 371 Introduction to Organic Chemistry Lab
1 hr.
This course is the laboratory to accompany CHEM 370 and should be taken concurrently with CHEM 370. Prerequisite: CHEM 112 and 113. Corequisite: CHEM 370.

CHEM 375 Organic Chemistry I
3 hrs. Fall, Winter
The preparation and chemical properties of aliphatic and aromatic compounds are studied. The emphasis is placed on the nature of covalent bonds and molecules and the general reactions of functional groups. Prerequisites: CHEM 112 and 113. It is strongly recommended that students take CHEM 376 concurrently.

CHEM 376 Organic Chemistry Lab I
1 hr.
This course is the laboratory to accompany CHEM 375. Should be taken concurrently with CHEM 375. Prerequisites: CHEM 112 and 113. Corequisite: CHEM 375.
CHEM 404 Teaching of Secondary Science

This course is the continuation of CHEM 375. Prerequisites: CHEM 375 and 376. It is strongly recommended that students take CHEM 378 concurrently.

CHEM 378 Organic Chemistry Lab II

1 hr. This course is the laboratory to accompany CHEM 377. Should be taken concurrently with CHEM 377. Prerequisites: CHEM 375, CHEM 376. Corequisites: CHEM 377.

CHEM 390 Special Problems in Chemistry

2 hrs. Fall, Winter

This course is designed to give students that have completed basic chemistry an opportunity to receive credit for experience in chemical laboratory independent study in association with a faculty member. May be repeated once for credit. Prerequisite: 18 hours of chemistry, with approval of the department chairperson and a faculty director.

CHEM 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 acquire 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 equipment, and safety concerns are introduced in CHEM 404. Corequisites: CHEM 304, 305.

CHEM 431 Physical Chemistry II

3 hrs. Fall

Emphasis will be placed on the principles of organic chemistry as they apply to the "real world" of industry and other organic syntheses. Students are strongly advised to complete 24 hours of chemistry. Prerequisite: CHEM 430 or permission of the instructor.

CHEM 435 Organic Chemistry II

3 hrs. Fall

This course is the continuation of CHEM 434. 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 acquire 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 equipment, and safety concerns are introduced in CHEM 434. Corequisites: CHEM 304, 305.

CHEM 436 Physical Chemistry Laboratory I

2 hrs. Fall

Laboratory experiments designed to emphasize and reinforce the principles covered in CHEM 431. This course expands on the qualitative and quantitative interpretation of physical and chemical measurement skills introduced in CHEM 431. Prerequisites: CHEM 431, may be taken concurrently. CHEM 436, concurrent enrollment strongly discouraged.

CHEM 495 Co-op/Internship

1-4 hrs. Research or practical training experience outside the department or university. This work is to be summarized in a written report. Students may take a maximum of six credit hours in CHEM 495. Consent of the instructor will be required so that students can be matched appropriately with employers according to the course work they have completed.

CHEM 505 Chemical Literature

2 hrs. Fall

An introduction to the use of the various types of chemical literature such as journals, abstracts, monographs, government, and institutional publications and patents. Both manual and computer search techniques are employed in the course of completing assigned problems involving literature searches in analytical, inorganic, biological, organic, and physical chemistry fields. Prerequisites: 23 hours of chemistry.

CHEM 506 Chemical Laboratory Safety

1 hr. Fall

A study of toxic, corrosive, flammable, explosive, electrical, mechanical, thermal, and radiant energy hazards frequently encountered in chemical laboratory work. Emphasis is placed on precautionary methods to avoid damaging accidents and on emergency procedures to apply when accidents occur. Prerequisite: CHEM 256 or permission of instructor.

CHEM 509 Topics in Chemistry

3 hrs. This topic is presented in greater depth or from a perspective different from that of a typical undergraduate course. Representative topics include microprocessors, industrial chemistry, chemical pollution, etc. according to student interest and request. Prerequisite: 16 hours of chemistry.

CHEM 515 Inorganic Chemistry

3 hrs. Winter

The course, along with CHEM 570 and 575, provides a capstone chemistry experience for undergraduates. The course will present the principles of inorganic chemistry in terms of its relevance to the "real world" of industry and environmental protection. Topics include symmetry, structure, and bonding, as well as a survey of the descriptive chemistry of the elements. Students are strongly advised to have already completed CHEM 570 and be coregistered in CHEM 575. Prerequisite: CHEM 431 or permission of the instructor.

CHEM 520 Instrumental Methods in Chemistry

2 hrs. Fall

An introduction to the theory and application of modern chemical instrumentation is presented. General topics covered are inductively coupled plasma, electrochemistry, spectroscopy, and other instrumental techniques. This course includes lecture and laboratory. Prerequisite or corequisite: CHEM 431, 436.

CHEM 525 Techniques in Water Analysis

2 hrs. Analytical techniques and methodology commonly used to determine water quality are presented. Modern instrumental methods are stressed with an emphasis on spectroscopic and chromatographic measurements. Laboratory provides practical experience in application of principles discussed in lecture. This course is not available to Chemistry majors. Prerequisites: CHEM 370 and 371 or 377 and 378.

CHEM 528 Chemical Separations

3 hrs. Principles and applications of chemical separations, including distillation, 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 biology 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 558 Toxicology

3 hrs. Fall

Through a lecture/discussion format, the means by which toxicants exert their effects on mammalian, aquatic and ecological systems will be explored. Topics will include bioaccumulation, distribution and excretion 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. Chemodynamic processes which control exposure of organisms will be presented in the context of risk assessment and the problems inherent in predicting and quantifying risks will be discussed. This course is cross-listed with BIOS 560. Prerequisites: BIOS 550, and chemistry through biochemistry or permission of instructor.

CHEM 570 Advanced Organic Chemistry and Spectroscopy

3 hrs. Fall

This course, along with CHEM 515 and 575, provides a capstone chemistry experience for undergraduates. The course expands on fundamentals of organic reactions and mechanisms through investigation of molecular structure and reactivity. Students will gain experience in modern spectral interpretation and will learn to use the organic chemical literature and databases. Prerequisites: CHEM 377, 378, 431 and 24 hours of chemistry.

CHEM 575 Advanced Chemical Synthesis

2 hrs. This course provides a synthetic laboratory experience for undergraduates in conjunction with CHEM 570 and CHEM 515 capstone courses. The fundamentals of synthetic techniques will be exercised through independent synthetic laboratory projects and detailed investigations of molecular structure using modern spectroscopic methods. Students will get hands-on experience with modern spectroscopic instrumentation and will learn to utilize the chemical literature and databases. It is strongly recommended that CHEM 570 be taken before CHEM 575 to prepare students for spectral interpretation. Prerequisites: CHEM 377, 378, 431, 520 or permission of the instructor.
CHEM 580 History of Chemistry
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 370 or 375.
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 Glicrast, Chair
Lynwood Bartley
Sandra Borden
Nancy Cornwell
Loren Crane
Richard Dieker
Leigh Ford
Wendy Ford
Richard Gerston
Melissa Gibson
Keith Henri
Richard Joyce
Joseph Kayany
Steven Lipkin
Peter Northouse
Mark Orbe
Thomas Pagel
Kathleen Propp
Steven Rhodes
George Robeck
Thomas Sil
Paul Yelmsa

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); Interpersonal Communication (IPC); Media Studies (MDS); Organizational Communication (OCM); Public Relations (PUR); and Telecommunications 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 central to positions 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 and film provide both the background knowledge and training for positions in 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 advising 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 applying 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 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 upon application filed with a departmental advisor following completion of the PCM requirements. Declaration of a minor in communication must be made with a departmental advisor following 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 will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:
COM 335 Leadership
COM 350 Public Relations and Organizations
Broadcast and Cable Production (BCP) Major

39 hours

1. Pre-Mass Communication Requirements ............... 9 hrs.
   COM 170 Interpersonal Communication I ............ 3
   COM 200 Introduction to Communication Theory ........ 3

   One of the following is required before declaring major:
   COM 241 Film Communication .................. 3
   COM 256 Broadcast Operations .................. 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 (3 hrs.):
      COM 240 Introduction to Media and Telecommunications ........ 3
   B. Select one, in consultation with an advisor (3 hrs.):
      COM 104 Public Speaking .................. 3
      COM 106 Voice and Diction .................. 3
      COM 210 Performance of Literature ............. 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 335 Small Format Video .................. 3
      COM 336 Film Production ..................... 3
   B. Select one of the following courses (3 hrs.):
      COM 257 Radio 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 .................... 3
      COM 457 Advanced TV Production ................ 3
   D. Select one of the following courses (3 hrs.):
      *COM 356 TV/Film Scripting .................. 3
      *COM 359 Broadcast Journalism ................. 3

   E. Select two of the following courses (6 hrs.):
      *COM 305 Special Topics in Communication ........ 3
      COM 342 The Film Industry (Prereq. 241) ........ 3
      COM 441 Documentary in Film and TV ............. 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 445 Media Criticism ..................... 3

   Six hours of electives in communication, selected from any courses offered by 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.
   *Baccalaureate-level Writing Requirement must be met by taking one of the courses marked with an asterisk (*).
   **Requires approval by an advisor of a specific topic.

Interpersonal Communication (IPC) Major

36 hours

1. Pre-Communication Requirements .................. 9 hrs.
   COM 170 Interpersonal Communication I ............. 3
   COM 200 Introduction to Communication Theory ........ 3

2. Communication Core Requirements ............... 18 hrs.
   A. Select two of the following courses (6 hrs.):
      *COM 305 Special Topics in Communication ........ 3
      COM 332 Group Problem Solving .................. 3
      COM 334 Argumentation and Debate ................ 3
      COM 370 Interpersonal Communication II ............ 3
      *COM 372 Introduction to General Semantics .......... 3
      COM 432 Group Communication Theory ................ 3
      COM 472 Nonverbal Communication .................. 3
      COM 475 Interpersonal Communication .......... 3
      COM 479 Female/Male Interaction ................. 3
      COM 484 Health Communication ..................... 3
      COM 507 Freedom of Expression .................... 3
   B. Select two of the following courses (6 hrs.):
      *COM 305 Special Topics in Communication ........ 3
      *COM 335 Leadership .................................. 3
      COM 350 Public Relations in Organizations .......... 3
      COM 430 Studies in Attitude Change ................. 3
      COM 447 Organizational TV Production ............... 3
      COM 474 Intercultural Communication ................ 3
      COM 477 Communication Ethics ..................... 3
      COM 482 Communication Processes in Organizations .......... 3
      COM 483 Interviewing .................................. 3
   C. Select two of the following courses (6 hrs.):
      *COM 305 Special Topics in Communication ........ 3
      *COM 335 Leadership .................................. 3
      COM 422 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 457 Advanced TV Production .................... 3
      COM 507 Freedom of Expression ..................... 3
      COM 551 Methods of Media Analysis .................. 3
      COM 554 Communication Technology .................. 3
   D. Communication Studies Electives ................. 6 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.
   *Baccalaureate-level Writing Requirement must be met by taking one of the courses marked with an asterisk (*).
   **Requires approval by an advisor of a specific topic.

Media Studies (MDS) Major

36 hours

1. Pre-Communication Requirements .................. 9 hrs.
   COM 170 Interpersonal Communication I ............. 3
   COM 200 Introduction to Communication Theory ........ 3

2. Communication Core Requirements ............... 18 hrs.
   A. Select two of the following courses (6 hrs.):
      COM 342 The Film Industry (Prereq. 241) ........ 3
      COM 441 Documentary in Film and TV ............. 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 457 Advanced TV Production .................... 3
      COM 507 Freedom of Expression .................... 3
      COM 551 Methods of Media Analysis .................. 3
      COM 554 Communication Technology .................. 3
   B. Select two of the following courses (6 hrs.):
      COM 342 The Film Industry (Prereq. 241) ........ 3
      COM 441 Documentary in Film and TV ............. 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 457 Advanced TV Production .................... 3
      COM 507 Freedom of Expression .................... 3
      COM 551 Methods of Media Analysis .................. 3
      COM 554 Communication Technology .................. 3
   C. Communication Studies Electives ................. 6 hrs.

   Six hours of electives in communication, selected from any courses offered by 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.
   *Baccalaureate-level Writing Requirement must be met by taking one of the courses marked with an asterisk (*).
   **Requires approval by an advisor of a specific topic.
COM 256 Broadcast Operations ...... 3
2. Media Studies Emphasis Core Requirements ........ 9 hrs.
A. This course is required:
COM 240 Introduction to Media and Telecommunications .... 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.):
COM 257 Radio Production ...... 3
COM 355 Small Format Video ...... 3
COM 356 Film Production ...... 3
COM 357 TV Studio Production ...... 3
*COM 358 TV Film Scripting ...... 3
Two courses from each of the following groups required:
A. Select two of the following courses (6 hrs.):
COM 342 The Film Industry ....... 3
COM 343 American Film Industry ....... 3
*COM 441 Documentary in Film/TV ....... 3
COM 445 Media Criticism ....... 3
COM 551 Methods of Media Analysis ....... 3
B. Select two of the following courses (6 hrs.):
**COM 305 Special topics in Communication ....... 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 477 Communication Ethics ....... 3
COM 507 Freedom of Expression ....... 3
C. Select two of the following courses (6 hrs.):
*COM 448 Telecommunications Management ....... 3
COM 455 International Telecommunications Policy ....... 3
COM 456 Broadcast/Cable Programming ....... 3
*COM 541 Telecommunications Law and Policy ....... 3
COM 554 Communication Technology ....... 3
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.
*A Baccalaureate-level Writing Requirement must be met by taking one of the courses marked with an asterisk (*).
**Requires approval by an advisor of a specific topic.

Organizational Communication (OCM) Major
36 hours
1. Pre-Communication Requirements ....... 9 hrs.
COM 170 Interpersonal Communication I ....... 3
COM 200 Introduction to Communication Theory ....... 3
COM 201 Communication Inquiry ....... 3
2. Communication Core Requirements ....... 3 hrs.
COM 104 Public Speaking ....... 3
3. Upper-level Organizational Communication Requirements ....... 15 hrs.
A. Both of these courses are required (6 hrs.):
*COM 335 Leadership ....... 3
*COM 482 Communication Processes in the Organization ....... 3
B. Select three of the following courses (9 hrs.):
**COM 305 Special topics in Communication ....... 1-4
COM 332 Group Problem Solving ....... 3
COM 334 Argumentation and Debate ....... 3
*COM 350 Public Relations and Organizations ....... 3
*COM 372 Introduction to General Semantics ....... 3
COM 430 Studies in Attitude Change ....... 3
COM 432 Group Communication Theory ....... 3
COM 440 Public Relations Case Studies ....... 3
COM 447 Organizational TV Production ....... 3
*COM 450 Public Relations Program Development ....... 3
COM 474 Intercultural Communication ....... 3
COM 477 Communication Ethics ....... 3
COM 479 Female/Male Interaction ....... 3
COM 483 Interviewing ....... 3
COM 507 Freedom of Expression ....... 3
4. Organizational Communication 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.
*Baccalaureate-level Writing Requirement must be met by taking one of the courses marked with an asterisk (*).
**Requires approval by an advisor of a specific topic.

Public Relations (PUR) Major
49-50 hours
1. Pre-Communication Requirements ....... 6 hrs.
COM 170 Interpersonal Communication I ....... 3
COM 200 Introduction to Communication Theory ....... 3
2. Public Relations core requirements ....... 30 hrs.
A. Required courses (12 hrs.):
*COM 350 Public Relations and Organizations ....... 3
COM 440 Public Relations Case Studies ....... 3
*COM 450 Public Relations Program Development ....... 3
*COM 482 Communication Processes in the Organization ....... 3
B. Select one of the following (3 hrs.):
*COM 358 Television and Film Scripting ....... 3
*COM 359 Broadcast Journalism ....... 3
C. Select one of the following (3 hrs.):
COM 332 Group Problem Solving ....... 3
*COM 356 Telecommunications Law and Policy ....... 3
COM 430 Studies in Attitude Change ....... 3
D. Select two of the following (6 hrs.):
COM 256 Broadcast Operations ....... 3
COM 257 Radio Programming and Production ....... 3
COM 355 Small Format Video Production ....... 3
COM 356 Film Production ....... 3
COM 357 Television Studio Production ....... 3
COM 447 Organizational TV Production ....... 3
E. Select two of the following (6 hrs.):
COM 240 Introduction to Media and Telecommunications ....... 3
COM 443 Mass Communication and Social Change ....... 3
COM 444 Mass Communication, News and Public Affairs ....... 3
3. Cognitive Course Requirements ....... 13-14 hrs.
A. These courses are required (7 hrs.):
PAPR 150 Fundamentals of Graphic Arts ....... 3
JRN 102 Introduction to News Writing ....... 4
B. Select one of the following (3 hrs.):
PAPR 251 Design and Electronic Publishing ....... 3
COM 454 Interactive Media ....... 3
COM 499 Internship ....... 3
C. Select one of the following (3-4 hrs.):
JRN 200 Journalism Research ....... 4
ENGL 364 Feature/Article Writing ....... 3
(Journalism English courses may be counted toward a journalism minor.)

Recommended minors include: Journalism, General Business, Marketing, Management, and Public Administration. Recommended majors include: Public Administration, Advertising, Environmental Studies, and Travel and Tourism.

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.
*Baccalaureate-level Writing Requirement must be met by taking one of the courses marked with an asterisk (*).

Telecommunications Management (TCM) Major
36 hours
1. Pre-Communication Requirements ....... 9 hrs.
COM 170 Interpersonal Communication I ....... 3
COM 200 Introduction to Communication Theory ....... 3
COM 240 Introduction to Media and Telecommunications ....... 3
A. All of these courses are required (12 hrs.):
*COM 448 Telecommunications Management ....... 3
COM 456 Broadcast and Cable Programming ....... 3
COM 541 Telecommunications Law and Policy ....... 3
COM 554 Communication Technology ....... 3
B. Select one of the following courses (3 hrs.):
**COM 452 Broadcast and Cable Sales ....... 3
**COM 454 Interactive Media ....... 3
**COM 506 Special Topics in Telecommunications ....... 3
3. Communication Electives ....... 12 hrs.
Select one course from each of the three area clusters, plus an additional 3 hrs.
A. Critical Communication Theory — Select one course (3 hrs.):
COM 305 Freedom of Expression ....... 3
COM 442 Mass Media and the Child ....... 3
COM 443 Mass Communication/Social Change ....... 3
COM 444 Mass Media/News/Public Affairs 3 hrs.
COM 446 Mass Entertainment 3 hrs.
COM 477 Communication Ethics 3 hrs.
COM 507 Freedom of Expression 3 hrs.
COM 551 Methods of Media Analysis 3 hrs.

B. Telecommunications — Select one course (3 hrs.):
COM 256 Broadcast Operations 3 hrs.
**COM 342 The Film Industry 3 hrs.
**COM 452 Broadcast and Cable Sales 3 hrs.
**COM 454 Interactive Media 3 hrs.
COM 455 International Telecommunications Policy 3 hrs.
COM 506 B Satellite and Wireless Telecommunications 3 hrs.
**COM 564 Telecommunications Networks 3 hrs.

C. Organizational Theory and Practice — Select one course (3 hrs.):
COM 104 Public Speaking 3 hrs.
COM 332 Group Problem Solving 3 hrs.
*COM 335 Leadership 3 hrs.
*COM 350 Public Relations and Organizations 3 hrs.
COM 440 Public Relations Case Studies 3 hrs.
COM 447 Organizational TV Production 3 hrs.
*COM 482 Communication Processes in Organizations 3 hrs.
COM 499 Internship 3 hrs.

Both COM 104 and COM 256 cannot be taken for the major.

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.

*Baccalaureate-level Writing Requirement: COM 448 satisfies the requirement.

**These courses can be used to fulfill either the Telecommunications Management upper-level requirement or the elective, but not both.

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 300-400 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.

Course requirements may be required, based on an analysis of student's proficiency, with a total of at least 21 hours in COM, nine of which must be at the 300-400 levels.

Communication Courses (COM)

A list of approved General Education courses can be found in "Graduation Requirements and Academic Advising" 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. $10.00 lab fee.

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 social occasion speeches. $10.00 lab fee. Prerequisite: COM 104 or consent of department.

COM 207 Intrapersonal Communication 3 hrs.
The examination of intrapersonal communication processes that include the use of imagery and symbolic processes to 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. $10.00 lab fee.

COM 240 Introduction to Media and Telecommunications 3 hrs.
This course will introduce the history, development, and study of media and telecommunications. Areas of study will include roles in media organizations, including management, programming, journalism, and media production. In addition, this course will examine the media's relationship to economic, political, and social institutions (including advertising and regulation), media literacy, and social effects research.

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, dramas, 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. $10.00 lab fee. Prerequisites: COM 170, COM 200 and ENGL 105 or the equivalent.

COM 334 Argumentation and Debate 3 hrs.
Theory and practice in argumentation and debate. Included are the analysis of propositions and the use of logic and evidence. Students will build, present, and defend cases. Debate is taught as a process of inquiry and advocacy.

COM 335 Leadership 3 hrs.
A study of the characteristics and behaviors of leaders with emphasis on the development of leadership abilities in the individual for different group situations. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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 343 American Film History 3 hrs.
This course will survey developments over time in the production and reception of feature films. Major concerns will include the evolution of the studio system, the impact of technological change on film practice, influences on Hollywood of other national cinemas, and the changing relationship between Hollywood and American society. Representative films will provide key texts for each unit of the course. $12.00 lab fee. Prerequisite: COM 241.
COM 350 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 professional situations concerned with the flow of information across organization boundaries. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum. Prerequisite: COM 200 or consent of instructor.

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, 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, studio supplies averaging about $10. $20 lab fee. Prerequisite: COM 200, COM 256.

COM 358 TV and Film Scripting
3 hrs.
Theories and techniques of film and television scripting for broadcast formats, station continuity, commercials, dramatic scripts, small format video, and documentary. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum.

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 is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum. $10.00 lab fee.

COM 370 Interpersonal Communication II
3 hrs.
An analysis of relational communication with particular emphasis on the nature of transactional relationships. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum. 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 symbol-user. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum. 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 library 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 credits, 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 a theoretical perspective. Students will be stressed. $25 lab fee. Prerequisite: COM 200, COM 241.

COM 440 Public Relations Case Studies
3 hrs.
The course uses a case study approach to apply principles of communication and persuasion theory to public relations problems. The course examines a variety of types of organizations in relation to issue advocacy and public policy, risk communication, legitimation, defense, and crisis management. Prerequisite: COM 350.

COM 441 Documentary in Film and Television
3 hrs.
A study of documentary philosophies, strategies, and accomplishments through an examination of important documentaryists, movements, and films. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum. $12.00 lab fee. 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. Prerequisite: Junior or senior standing, COM 200 and COM 240, or graduate standing.

COM 450 Public Relations Program Development
3 hrs.
This is an advanced course in public relations emphasizing research methodology, developing planning objectives, and program evaluation for corporate, governmental, educational, and social service organizations. The course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum. Prerequisite: COM 200, COM 449.

COM 452 Broadcast and Cable Sales
3 hrs.
This course examines the theory and process of buying and selling broadcast and cable time on the local and network levels. Prerequisite: COM 240.

COM 454 Interactive Media
3 hrs.
The course is designed to investigate the psychological and social effects of on-line interactive communication technologies in the interpersonal, organizational, and social contexts. The course also emphasizes the use of on-line communication and information retrieval skills, and guide students through non-linear organization of information and hypertext design of communication on the Web. Prerequisite: CS 105 or equivalent.

COM 455 International Telecommunications
3 hrs.
The course is designed to provide the student with an overview of the essential regulatory and policy issues governing the field of...
The course examines theory and research in the field of 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 458 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 ethical 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 holistic 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 3 hrs.
Ethical theories and justification models are studied and related to ethical decision making in a variety of communication contexts, including mass communication, organizational communication, and interpersonal communication. The course will examine the components of good ethical decision making in communication, as well as obstacles that can stand in the way of responsible choices.

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 is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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. $10.00 lab fee.

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 for internships and 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.

Undergraduates with junior or senior status and 15 hours of COM or related courses may enroll in 500-level courses with prior approval 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 506 approved by an advisor may be accumulated as credit toward a major or minor in communication.

COM 506 Special Topics in Telecommunications 3 hrs.
Study of special topics in telecommunications management, law and policy, and technology. Prerequisites: COM 240 and junior or senior standing; or graduate standing.

COM 507 Freedom of Expression 3 hrs.
The tradition and justifications for freedom of expression are explored and applied to contemporary concerns facing interpersonal, organizational, and mass media-based communication. Beginning with the historical roots of freedom of expression, students will trace the rise of modern First Amendment rights, through careful case analysis. Topics to be investigated include free expression on the Internet and in the mass media, hate speech, speech codes, sexual harassment, freedom of expression in the workplace, corporate free speech rights and other topical free speech issues. Prerequisite: Junior, Senior, or Graduate standing.

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 551 Methods of Media Analysis 3 hrs.
An investigation of the approaches to media analysis (auteur, institutional, sociological, structural, historical, ideological, psychological) by intensive "reading" and shot sequence examination and evaluation of widely divergent works. $12.00 lab fee. 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 556 Telecommunications Networks 3 hrs.
This course provides an overview of telecommunications networks technology, standards, and protocols. Network configurations, switching technologies and signaling standards that sustain voice and data communications networks, corporate networks, and advanced intelligent networks are major sections of the course. Prerequisites: Junior or Senior standing and COM 240, or Graduate standing.
COMPARATIVE RELIGION

E. Thomas Lawson, Chair
H. Byron Earhart
David Ede
Nancy Falk
Francis Gross, Jr.
Timothy Light
Mrozik, Susan
Rudolf Siebert
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.

Courses By Topic

INTRODUCTORY STUDIES

INTRODUCTORY STUDIES

HISTORICAL STUDIES

301 Buddhist Traditions
302 Chinese Religion
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 Morphological and Phenomenological Studies in Religion

COMPARATIVE STUDIES IN RELIGION

311 Myth and Ritual
313 Religion in America
510 Morphological and Phenomenological Studies in Religion

511 Women in Religion

HISTORICAL STUDIES

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
498 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 "Graduation Requirements and Academic Advising" earlier in this catalog.

REL 100 Religions of the World

An approach to the religions of the world which surveys themes in various religious traditions (such as Judaism, Christianity, Islam, Hinduism, Buddhism and primitive religions).

REL 200 Introduction to Religion

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 acknowledgement 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

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. This course is approved as writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum.

REL 301 Buddhist Traditions

This course is an introduction to the panorama of Buddhist traditions in South, Southeast, 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 civilizations. Special attention will be devoted to the problem of the religious ideals and how that is to be pursued. We will lead scholarly studies on the traditions as well as original Buddhist texts in translations.

REL 302 Religion in the Indian Tradition

This course draws its materials primarily from the great religious traditions native to India—i.e. Brahmanism, Buddhism, Jainism, 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

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 will be to examine what 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

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, divinization, 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

This course draws its materials primarily from the great religious traditions within Christianity—i.e., 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.
This course is designed to introduce students (e.g. Utopian communalism, occult and frequently non-institutional forms of the communities whose lives are governed) development of American culture and society culture at large, are now increasingly brought into question as the United States enters a millennial dominance, and civil religion which, among others, is a driving force of social and cultural change. The course will examine the conservative and progressive roles the religious 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 neurotic stability, mental health and wholesomeness 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 344 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 also be paid to the questions raised by the various contexts in which religion occurs as well as to 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 asking 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 will include religious traditions, forms of religion and current issues in method and theory.

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.

REL 598 Readings in Religion
Variable Credit
Research on some selected period or topic 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.

COMPUTER SCIENCE
Ajay Gupta, Chair
Fred Boals
Elise de Doncker
Donna Kaminski
John Kapenga
Karlis Kaugars
Mark Kerstetter, Director of Undergraduate Programs
Dionysis Koutaninis
Mukesh Mohania
Dalia Motzkin
Donald Nelson
Thomas Pliskin, Director of Graduate Programs
Ben Pinkowski
Robert Treasery
Kenneth Williams, Director of Doctoral Program
Li Yang

Computer Science
The study of digital computers and their uses for the effective processing of information. Degree programs offered emphasize the software aspects both in theory and application rather than the physical construction of computers (hardware aspects). The department offers a number of introductory programming courses as well as complete programs which provide a major or minor in computer science.

Students considering a major or minor in computer science should make an appointment for advising by contacting the Computer Science Office located in 3308 Friedmann Hall (phone 387-5645). This should be done as soon as possible—certainly within the second semester of enrollment in computer science classes. Eligibility requirements and admittance into a major or minor program are available from the computer science advisor.

The department offers two major options providing opportunities for students to pursue a variety of interests:

1. The majors in computer science are appropriate for students in a variety of fields. Graduates holding minors should be particularly qualified for applications programming positions.

Additional Information
General information regarding counseling and types of degrees may be found under the beginning of the Arts and Sciences section of this catalog. Students must satisfy prerequisites before enrolling in a course. Those who fail to earn a "C" or better grade in a prerequisite course will be denied permission to enroll in the next course.

The department reserves the right not to honor enrollment in a course if the student fails to attend the first two class meetings of the term, unless prior arrangements have been made with the instructor. Enrollment will not be honored if it is found that the proper prerequisites have not been met. Students whose enrollments are denied for whatever reason are responsible for processing drop slips with the Registration Office.

Computer Science
Major—Theory and Analysis Option
The Theory and Analysis program has been accredited by the Computing Sciences Accreditation Board, Inc. (CSAB). It provides a greater depth and breadth in computer science than the general option (see below). 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.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CS 111</td>
<td>Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td>CS 112</td>
<td>Computer Science II</td>
<td>4</td>
</tr>
<tr>
<td>CS 223</td>
<td>Computer Organization and Assembly Language</td>
<td>3</td>
</tr>
<tr>
<td>CS 224</td>
<td>Systems Programming Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CS 331</td>
<td>Data and File Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 460</td>
<td>Software Systems Development</td>
<td>3</td>
</tr>
<tr>
<td>CS 485</td>
<td>Programming Languages</td>
<td>3</td>
</tr>
<tr>
<td>CS 498</td>
<td>The Computer Science Profession</td>
<td>1</td>
</tr>
<tr>
<td>CS 531</td>
<td>Design and Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CS 554</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 580</td>
<td>Theory of Computation</td>
<td>3</td>
</tr>
</tbody>
</table>

Three approved non-language electives
(See advisor)

REQUIRED MATHEMATICS COURSES (19 hrs.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<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 145</td>
<td>Discrete Mathematical Structures</td>
<td>3</td>
</tr>
<tr>
<td>MATH 230</td>
<td>Elementary Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 364</td>
<td>Statistical Methods</td>
<td>4</td>
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REQUIRED PHYSICS COURSES (10 hrs.)

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<thead>
<tr>
<th>Course</th>
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</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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</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>
</tbody>
</table>

REQUIRED ELECTRICAL AND COMPUTER ENGINEERING COURSES (6 hrs.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ECE 250</td>
<td>Digital Logic I</td>
<td>3</td>
</tr>
<tr>
<td>ECE 357</td>
<td>Computer Architecture</td>
<td>3</td>
</tr>
</tbody>
</table>

BACCAULAUREATE WRITING REQUIREMENT
Students who have chosen the Theory and Analysis option of the Computer Science major will satisfy the Baccalaureate Writing Requirement by successfully completing CS 460 Software Systems Development.

REQUIRED SCIENCE COURSES
Two approved laboratory science courses suitable for majors in their respective disciplines. See advisor.

REQUIRED COMMUNICATIONS AND ETHICS COURSES (7 hrs.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>COM 104</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 410</td>
<td>Professional Ethics</td>
<td>4</td>
</tr>
</tbody>
</table>

APPROVED ELECTIVES
Approved electives for the Computer Science—Theory and Analysis major can be: CS 499, CS 518, CS 520, CS 525, CS 526, CS 527, CS 530, CS 543, CS 555, CS 581, CS 582, CS 585. 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 LEC requirements of the College of Arts and Sciences, students are required to complete a minimum of 23 hours of course work in the social sciences and humanities (excluding COM 104 and PHIL 410). See advisor.
Computer Science Major—General Option

This major option is designed to provide students 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.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 111</td>
<td>Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td>CS 112</td>
<td>Computer Science II</td>
<td>4</td>
</tr>
<tr>
<td>CS 201</td>
<td>Programming in FORTRAN</td>
<td>2</td>
</tr>
<tr>
<td>CS 202</td>
<td>Programming in COBOL</td>
<td>2</td>
</tr>
<tr>
<td>CS 223</td>
<td>Computer Organization and Assembly Language</td>
<td>3</td>
</tr>
<tr>
<td>CS 224</td>
<td>Systems Programming Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CS 331</td>
<td>Data and File Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 460</td>
<td>Software Systems Development</td>
<td>3</td>
</tr>
<tr>
<td>CS 485</td>
<td>Programming Languages</td>
<td>3</td>
</tr>
<tr>
<td>CS 554</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Two approved non-elective electives (see advisor) 6 hrs.

REQUIRED MATHEMATICS COURSES (19 hrs.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</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 145</td>
<td>Discrete Mathematics Structures</td>
<td>3</td>
</tr>
<tr>
<td>MATH 230</td>
<td>Elementary Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 364</td>
<td>Statistical Methods</td>
<td>4</td>
</tr>
</tbody>
</table>

REQUIRED ELECTRICAL AND COMPUTER ENGINEERING COURSE (3 hrs.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 220</td>
<td>Digital Logic I</td>
<td>3</td>
</tr>
</tbody>
</table>

Approved electives can be CS 495, 499, 518, 520, 525, 528, 527, 530, 531, 543, 555, 560, 561, 562, 565, 589, MATH 440, 506, 507, 574, PHIL 520. Electives must be approved in advance by the student's advisor.

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the General option of the Computer Science major will satisfy the Baccalaureate Writing Requirement by successfully completing CS 460 Software Systems Development.

Computer Science Minor—General Option

COMPUTER SCIENCE COURSES

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>CS 201</td>
<td>Programming in FORTRAN</td>
<td>2</td>
</tr>
<tr>
<td>CS 223</td>
<td>Computer Organization and Assembly Language</td>
<td>3</td>
</tr>
<tr>
<td>CS 331</td>
<td>Data and File Structures</td>
<td>3</td>
</tr>
</tbody>
</table>

Two approved electives (may be a language course) (see advisor) 5-6 hrs.

REQUIRED MATHEMATICS COURSES

<table>
<thead>
<tr>
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<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>MATH 122</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 200</td>
<td>Application and Analysis</td>
<td>4</td>
</tr>
</tbody>
</table>

Computer Science Minor—Sciences Option

COMPUTER SCIENCE COURSES

<table>
<thead>
<tr>
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<tr>
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<td>CS 112</td>
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<td>4</td>
</tr>
<tr>
<td>CS 201</td>
<td>Programming in FORTRAN</td>
<td>2</td>
</tr>
</tbody>
</table>

CS 223 Computer Organization and Assembly Language | 3 |
CS 331 Data and File Structures | 3 |

Two approved CS electives (see advisor), only one of which may be a language course 5-6 hrs.

REQUIRED MATHEMATICS COURSES

<table>
<thead>
<tr>
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<tr>
<td>MATH 230</td>
<td>Elementary Linear Algebra</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>

Computer Science Courses (CS)

A list of approved General Education courses can be found in “Graduation Requirements and Academic Advising” 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 include: programming practices and structures; C++ syntax including variable declaration types, arrays, assignment statements, looping, functions, scope, object-oriented design, object-oriented programming, boolean operators, 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 technology 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 coursework. Prerequisite: 1½ years of high school algebra or MATH 111. This course does not fulfill the computer literacy requirement.

CS 107 Introductory Programming: FORTRAN | 2 hrs.

An introduction to computer programming using the FORTRAN language (FORmula TRANslating). 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 111 Computer Science I | 4 hrs.

A first course in the science of programming digital computers. Analysis of problems and development of correct 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-requisite: 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 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-requisite: 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 1½ 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 107. Prerequisite: CS 111 and one and one-half years of high school algebra or MATH 111.

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 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 the language. This course assumes knowledge of a computer system, editors, and programming concepts. Prerequisite: Substantial programming in a structured high-level language.

CS 204 Programming in C++ | 2 hrs.

Details of the C++ 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 in C. 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 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.
CS 224 System Programming Concepts 3 hrs.
Topics include: program development tools, basic testing, timing, profiling and benchmarking, characteristics of physical devices, module and device management, device drivers, pseudo-devices, file structures, file I/O (both buffered and unbuffered), processes, shells, inter-process communications, signals, exceptions, shared memory and file and record locking. All topics are viewed from a UNIX system programming perspective. Prerequisite: CS 112 and CS 223.

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 computing, 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 for those in Secondary Education. Prerequisites: CS 105, CS 112, and junior status.

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. Note: 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. 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 data manipulation 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 application programs which use the data base system. Not for Computer Science Majors (except Teaching majors). Prerequisite: CS 202 or BIS 362. A student may not receive credit for both CS 443 and CS 453.

CS 460 Software Systems Development 3 hrs.
This is a projects course in software engineering that leads teams of students through the software development cycle: requirements 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 is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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 will be 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 covered within separate courses. This course may be taken more than once with the approval of the student's advisor. Prerequisite: Approval of Department.

CS 498 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 Undergraduate Research in Computer Science 1–3 hrs.
Supervised undergraduate research. Topics are chosen and arrangements are made on an individual student basis. With prior written approval, this course may be used for elective credit in the Theory and Analysis option of the B.S. degree in computer science. Students interested in CS 499 should consult their department advisor or the department chair for details. May be repeated for credit to a maximum of three hours. Graded on a Credit/No Credit basis. Prerequisite: Department approval.

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 computer simulation. A methodology is introduced which is generally applicable to simulation projects. The relationships between real systems and models, and simulation are presented, and the concept of experimental frames is discussed. General purpose simulation languages (e.g., Simscript, GPSS, CSM, 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 also be discussed. Several small programs and a simulation project will be assigned the student. Prerequisite: CS 331 and a course in probability or statistics.

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: ECE 250, CS 223 or ECE 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 software 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 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 different data structures affect 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 models will be emphasized. Query languages, query optimization, security, integrity, and concurrency protocols will also be covered. A student may not receive credit for both CS 443 and CS 543. 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 465 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 and "Interdisciplinary Programs" in the College of Arts and Sciences.

ECONOMICS Werner Siech, Chair
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Eskander Alvi
Sisay Asefa
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Bassam E. Harik
Salim E. Harik
Matthew L. Higgins
Emily P. Hoffman
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Wei-Chiao Huang
Timothy L. Hunt
William S. Kern
Jean Kimmel
Shohreh Majin
Daniel J. Meyer
Jon R. Neill
Christopher J. O'Leary
Susan Pozzo
Mark V. Wheeler
Huizhong Zhou

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 preparation for law school. 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
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CRIMINAL JUSTICE PROGRAM
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ECONOMICS 77

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1–3 hrs.
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CRIMINAL JUSTICE PROGRAM
See Sociology Department in the College of Arts and Sciences and "Interdisciplinary Programs" in the College of Arts and Sciences.
BACCALAUREATE WRITING REQUIREMENT
Students who have chosen the Economics major will satisfy the Baccalaureate Writing Requirement by successfully completing ECON 484 Comparative Economic Systems.

Economics Minor
A minor in economics consists of a minimum of 15 hours in the department.

Economics Courses By Topic

**PRINCIPLES AND GENERAL THEORY**

107 Economic Issues in the U.S. Today
108 Contemporary International Economic Issues
109 History of Modern Economic Society
201 Principles of Microeconomics
202 Principles of Macroeconomics
301 Economic Issues: Variable Topics
400 Managerial Economics
402 Introductory Economic Statistics
403 Intermediate Microeconomics
408 Intermediate Macroeconomics
409 Econometrics
501 Studies in Economic Problems: Variable Topics
503 Economic Computing
504 Introduction to Mathematical Economics
505 History of Economic Thought

**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
596 Readings in Economics

**Economics Courses (ECON)**

A list of approved General Education courses can be found in "Graduation Requirements and Academic Advising" earlier in this catalog.

ECON 107 Economic Issues in the U.S. Today

3 hrs. Fall, Winter

A non-technical examination of contemporary economic issues in the United States, such as unemployment, inflation, the environment, crime, education, health care, and taxation. This course cannot be used to satisfy major or minor requirements in Economics.

ECON 108 Contemporary International Economic Issues

3 hrs. Fall, Winter

A non-technical 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

An introduction to macroeconomics, the study of total output and employment, inflation, economic growth, and introduction to international trade and development. For students who plan to take both ECON 201 and ECON 202, it is preferable to take ECON 201 before taking ECON 202.

ECON 301 Economic Issues: Variable Topics

3 hrs.

This course is intended to teach "current events" topics to which economics is relevant. Examples of current events around which this course could have been structured are the savings and loan crisis, European economic integration, world petroleum, tax reform, and NAFTA. Prerequisite: One college-level economics course.

ECON 304 The Organization of Industries

3 hrs. Fall, Winter, Spring or 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 policy implications of various horizontal and vertical agreements among firms in industries. Prerequisite: ECON 201

ECON 309 Women and the Economy

3 hrs. Fall, 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, wages, 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 health 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 insurers, 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—economic growth, population and environmental quality 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 probe 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 of 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

The course concentrates on the study of the Japanese, Chinese, and Indian economic systems. These models are then applied as a basis of comparison other Asian economies. Prerequisites: ECON 201 and ECON 202.
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. Topics covered include structure and performance of the Latin American economies, the industrialization process, economic integration, stabilization programs, and capital formation. Prerequisites: ECON 201 and ECON 202.

ECON 400 Managerial Economics
3 hrs. Fall, Winter, Spring and/or Summer
An introductory examination of the application of tools of economic analysis to management problems and decision making. The basic concepts include marginalism and cost analysis, demand pricing, capital budgeting, and selected optimality models. Prerequisites: ECON 201 and 202, MATH 116, and MATH 216, or equivalent.

ECON 402 Introductory Economic Statistics
3 hrs. Fall
An introduction to statistical methods and techniques used in the acquisition and analysis of economic data. Data acquisition topics include organization and preparation techniques, survey design and sampling. Students will be familiarized with several government and private economic data sets and their strengths and weaknesses. Data analysis topics emphasize statistical methods used to analyze economic data such as descriptive statistics, hypothesis testing and regression analysis. Prerequisites: ECON 201, ECON 202, MATH 118 or equivalent.

ECON 403 Intermediate Microeconomics
3 hrs. Fall, Winter, Spring and/or Summer
An examination of microeconomic theory, with emphasis on the theory of consumer behavior (the derivation of the demand curve), the theory of the firm and factor pricing. Prerequisites: ECON 201 and ECON 202.

ECON 406 Intermediate Macroeconomics
3 hrs. Fall, Winter, Spring and/or Summer
An examination of macroeconomic theory with particular emphasis on business cycles, economic growth, and price level instability. The interplay between theory and policy is analyzed. Prerequisites: ECON 201 and ECON 202.

ECON 409 Econometrics
3 hrs. Winter
Instruction is given on the design and conduct of economic research and the analysis of economic data. Each student designs a research project drawing upon economics courses already taken by the student. In addition to examinations, the student conducts in-depth research, gives an oral report and submits a written report. Prerequisites: ECON 402, ECON 403, ECON 406, or equivalents.

ECON 484 Comparative Economic Systems
3 hrs. Fall
The economic institutions and conditions of capitalism, socialism, communism, fascism, and the cooperative movement are critically examined as to ideology and actual operation. This course is approved as a writing-intensive course which will fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: ECON 201 and 202, or consent of instructor.

Undergraduate students wishing to take 500-level courses must be of junior or senior standing and have 12 or more credit hours of economics or the consent of the department chairperson.

ECON 501 Studies in Economic Problems:
Variable Topics
3 hrs. Fall or Winter
An examination of a selected area of concern not intensively covered in other courses. The focus of the course will be substantive as well as analytical. Topics may include such areas as poverty, farm problems, misallocation of resources, welfare programs, unemployment and others. May be repeated for credit with a different topic. Prerequisites: ECON 201 and 202 plus six additional credit hours of economics or consent of instructor.

ECON 503 Economic Computing
3 hrs. Fall
This course provides students with basic skills needed for gaining access to economics databases and for using data management programs on personal and mainframe computers. It provides instruction and lab experience in transferring files and performing operations widely employed by economists. Prerequisites: ECON 403, 406 or permission of instructor.

ECON 504 Mathematics for Economists
3 hrs. Fall
This course presents the mathematical material necessary as background for the topics covered in graduate-level economics courses. Topics covered include differential calculus, optimization, comparative statics, and mathematical programming. These techniques are applied to selected economic problems. Prerequisites: ECON 201 and 202, MATH 122 or consent of instructor.

ECON 505 History of Economic Thought
3 hrs.
This course surveys the origins and developments of economic analysis from the ancient Greeks to the present. Prerequisites: ECON 201, 202.

ECON 507 Monetary Theory and Policy
3 hrs. Winter
This course concentrates on the main elements of monetary theory and policy having to do with such problems as promoting economic growth, maintaining full employment and price stability, influencing the flow of capital into the various economic sectors with different possible social goals in mind, and stabilizing international trade and financial relationships. Prerequisite: ECON 201 and ECON 202, ECON 320 or ECON 406.

ECON 515 Economics of Human Resources
3 hrs. Fall or Winter
This course examines the development and utilization of manpower in the United States, including such topics as labor force components, contributors to productivity such as education, training, health and mobility, and issues of manpower policy. Prerequisites: ECON 201 and 202.

ECON 525 State and Local Government Finance
3 hrs. Fall or Winter
Practices, effects and issues in state and local expenditure, taxation, and borrowing, with particular attention to property and sales taxation, to the financing of education and highways, and to intergovernmental fiscal relations. Prerequisites: ECON 201 and 202.

ECON 588 Economic Development
3 hrs. Fall
An analysis of the economic factors such as population, resources, innovation and capital formation which affect economic growth. Selected underdeveloped areas will be studied to understand the cultural patterns and economic reasons for lack of development and the steps necessary to promote economic progress. Prerequisites: ECON 201 and 202.

ECON 591, 592 Guest Economist Seminar
1 hr. Fall, Winter
Seminar series on a topic of current interest featuring invited visiting economists. Topics will vary and courses may be repeated. Prerequisites: ECON 201 and 202.

ECON 598 Readings in Economics
1–3 hrs. Fall, Winter
An independent program of study for qualified advanced students to be arranged in consultation with the instructor. Prerequisite: Consent of instructor and department chairperson.
ENGLISH

W. Arnold Johnston, Chair
Johina Abbron
Thomas Bailey
Minam Bat-Ami
Ellen Brinkley
Allen Carey-Webb
Norman Carlson
John Cooley
Seamus Cooney
Clifford Davidson
Richard Digby-Junger
JD Dolan
Rollin Douma
Stuart Dybek
Scott Dykstra
Philip Egan
Nancy Eimers
Gwendolyn Etter-Lewis
Luis Gamez
Stephanie Guaper
C.J. Gianakis
Pat Gill
Jaime Gordon
Maryellen Hains
Georgina Hill
Robert Hinkel
Paul Johnston
Elise B. Jorgens
Katherine Joslin
Jill Larson
Mary Anne Loewe
William Olsen
Gwen Raaberg
Mark Richardson
John Saillant
Herbert Scott
Thomas Seiler
Jocelyn Steinke
John Stroupe
Larry Syndergaard
Gwen Tarbox
Lanny Torschel
Grace Tiffany
Daneen Wardrop
Constance Weaver

The Department of English serves students in two principal ways: In developing their power to communicate and express themselves and in enhancing their ability to participate in and understand the experiences of other people, real and imaginary, past and present. Courses and programs offered by our department in writing, English language, and literature (including film)—enable students to concentrate in English, complement their other disciplines of language and literature. As a department we are traditionally engaged in training teachers and preparing students for graduate study. We are equally concerned with serving those students preparing for the profession of English—writing, English language, and 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).

Major and Minor Requirements

1. The requirements for the English majors (listed below) allow students some choices in their course 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 their study.

2. A minimum of 34 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.

3. Only courses in which a grade of "C" or better is earned may be applied to an English major or minor. Moreover, all majors and minors in the Department of English need to earn at least a 2.5 grade point average in the major or minor to graduate.

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 appropriate score on a placement exam. The department recommends as much additional work in the language as students can manage. Students planning to do graduate work beyond the M.A. should develop competence in at least one foreign language.

5. Special Note to Transfer Students. All transfer students majoring or minoring in English should consult with one of the department's undergraduate advisors (387-2575) about transferring credit to the university. An early conference will enable students to avoid duplication of courses and possible loss of transfer credit and may enable them to bypass some of the department's basic requirements as listed below. It is departmental policy to accept no more than 20 hours of transferred credit toward a major and no more than 12 hours of transferred credit toward a minor.

6. Baccalaureate Writing Requirement: Students who have chosen an English major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

   3. 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 472 to satisfy this requirement 3.C. may not use that course to satisfy this requirement.

   ENGL 415 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.

   Students who use ENGL 452 to satisfy this requirement 3.C. may not use that course to satisfy this requirement.

   ENGL 452 Shakespeare Seminar 4
   ENGL 522 Studies in American Literature 4
   ENGL 530 Medieval Literature 3
   ENGL 532 Renaissance Literature 3
   ENGL 534Restoration and 18th Century Literature 3
   ENGL 536 Romantic Literature 3
   ENGL 537 Victorian Literature 3
   ENGL 538 Modern Literature 3
   ENGL 539 Studies in Major Writers 3

   3. Required Courses (27/28 hrs.)

   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, 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.

English Major—Secondary Education Curriculum

English Major—Liberal Education Curriculum

34 hours

1. Required Entry-Level Course (4 hrs.)

   ENGL 110 Literary Interpretation 4

2. Suggested Elective Course at 200-300 Level (3-4 hrs.)

   Students are encouraged to elect one of the following courses before taking courses in the "Required" part of the major.

   ENGL 210 Film Interpretation 4
   ENGL 223 Black American Literature 4
   ENGL 252 Shakespearean Plays 4
   ENGL 315 The English Bible as Literature 3

3. 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 472 to satisfy requirement 3.C. may not use that course to satisfy this requirement.

   ENGL 415 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.

   Students who use ENGL 452 to satisfy this requirement 3.C. may not use that course to satisfy this requirement.

   ENGL 452 Shakespeare Seminar 4
   ENGL 522 Studies in American Literature 4
   ENGL 530 Medieval Literature 3
   ENGL 532 Renaissance Literature 3
   ENGL 534 Restoration and 18th Century Literature 3
   ENGL 536 Romantic Literature 3
   ENGL 537 Victorian Literature 3
   ENGL 538 Modern Literature 3
   ENGL 539 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, 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.
required to choose ENGL 330 to satisfy the requirement for British Literature.

A. One of the following British Literature courses:
ENGL 252 Shakespeare .................. 4
ENGL 330 British Literature I .......... 3
ENGL 332 British Literature II .......... 3

B. One of the following American Literature courses:
ENGL 320 American Literature I ........ 3
ENGL 321 American Literature II ........ 3
C. At least one additional course from those listed under 2.A. and 2.B.
D. One of the following English Language courses:
ENGL 472 American Dialects .......... 4
ENGL 574 Grammar for Teachers ........ 4

3. World Literature Requirement
ENGL 479 Writing in the Secondary School .......... 4

34 hours

3. Literature and English Language Courses
ENGL 110 Literary Interpretation .......... 4
ENGL 112 Literary Classics or ENGL 312 Western World Literature as General Education courses, satisfying AREA II: Humanities. Those wishing to fulfill the world literature requirement by electing ENGL 583 to satisfy requirement 2 E"or§ by electing ENGL 312 or ENGL 583 as one of the electives satisfying requirement 4.

4. Elective Courses
ENGL 480 Teaching of Literature in the Secondary Schools, is required for certification but does not count toward the required number of 34 credit hours in English required for the major. ED 302, Teaching and Learning—Secondary, is a prerequisite for this course.

5. Professional Component (4 hrs.)
ENGL 100 Introduction to Newswriting .......... 4
ENGL 362 Literary Journalsm ............. 3
ENGL 464 Professional Writing .......... 4

4. Foreign Language Requirement
ENGL 462 Advanced Writing .......... 4
ENGL 464 Professional Writing .......... 4

5. Language and Literature Courses (10-12 hrs.)
A. Two courses chosen from among the following:
ENGL 330 American Literature I ........ 3
ENGL 332 American Literature II .......... 3
ENGL 333 British Literature I ........ 3
ENGL 334 British Literature II .......... 3
ENGL 371 Structures of Modern English .......... 4
ENGL 472 American Dialects .......... 4
B. One course chosen from the following:
ENGL 415 Practical Literary Criticism .......... 4
ENGL 440 Studies in Verse .......... 4

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ENGLISH Major—Creative Writing Emphasis

4. Electives
ENGL 444 Studies in Novel .......... 4
ENGL 452 Shakespeare Seminar .......... 4

2. Required Journalism Core Courses (16 hrs.)
JRN 102 Introduction to Newswriting .......... 4
JRN 200 Journalism Research .......... 4
JRN 300 Newswriting and Reporting .......... 4
English Minor—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 4
      ENGL 331 British Literature II 4
   B. At least one of the American Literature survey courses, ENGL 320/321, which attend to the diversity of American culture.
   C. A second course which attends to cultural diversity or has a multi-cultural focus, selected from the following:
      ENGL 223 Black American Literature 4
      ENGL 313 Asian Literature 3
      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 Multicultural Literature 3
      ENGL 479 Writing in the Secondary School 4
3. Electives
   A writing course such as:
      ENGL 305 Practical Writing 4
      ENGL 306 Playwriting 3
      ENGL 366 Advanced Fiction Writing 3
      ENGL 367 Advanced Multi-Cultural American Literature 4
      ENGL 368 Playwriting 3
      ENGL 462 Advanced Writing 4
      ENGL 366, 367, and 368 may be repeated one time for credit.

English Minor—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
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.

English Minor—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:
   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 330 American Literature I 3
   ENGL 331 American Literature II 3
3. 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.
English Minor—Practical Writing

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

English Courses (ENGL)

A list of approved General Education courses can be found in "Graduation Requirements and Academic Advising" 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 the 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 work 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 credit towards English major or minor. Fulfills the University Intellectual Skills college level writing requirement. Prerequisite: Satisfactory English score, or placement essay for ENGL 100.

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 required for entry into most upper-level 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. An exploratory course for the general student rather than the student who plans to specialize in the study of literature. Credit toward English major or minor by permission of the department only.

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 count, however, 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. Prerequisite: Satisfactory completion of ENGL 105.

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/or 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 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, rewrite, typography, headline 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—fольktale and 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, 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum.

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 an 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 towards 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 towards an English major or minor.

ENGL 312 Western World Literature
3 hrs.
Study of works selected from the Western literary tradition, excluding those from the Far East 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 literary traditions 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 1890, 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 to 1789, with Boswell. Prerequisites: ENGL 105 (or equivalent); ENGL 110.

ENGL 331 British Literature II 3 hrs.
A survey of British literature from the Romanticists 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 journalism. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: ENGL 105; ENGL 110.

ENGL 363 Reporting 3 hrs.
Instruction and practice in covering news beats, writing complex news stories, and developing reporting skills. Prerequisite: ENGL 264.

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 reportage. Prerequisite: A previous college-level writing course.

ENGL 365 Reviewing For the Press 3 hrs.
Theory and practice in reviewing 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 literacy 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 pursue graduate study. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: Two courses at the 300-level that count toward 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: Two courses at the 300-level 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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 363.

ENGL 464 Professional Writing 4 hrs.
Practice in developing the forms and techniques of writing, editing, and researching required in business, industry,
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 the forces which influence different types of language variation. Examines 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.
Focuses 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. Does not count as credit toward the major. Prerequisite: Two 300-level English courses that count toward the major.

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 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. Prerequisite: ENGL 530 Medieval Literature 3 hrs.
Readings in the medieval literary tradition. Some Middle English works will be studied in the original language 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. Prerequisite: English 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 566 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 modern linguists, 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 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. Graded on credit/no credit basis. Prerequisite: Minimum of 500 on TOEFL.

ENGL 161 Acquiring Fluency and Clarity 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 the language proficiency to be admitted to the University, but who need to improve their reading and writing skills in order to perform successfully in

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their academic world. The course promotes further development in the ability to read academic prose and to write in the genres needed for academic success, including the research paper. Attention will be paid to critical reading and editing for grammatical correctness in writing. 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 Courses (JRN)**

**JRN 102 Introduction to Newswriting**

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**

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 documents, electronic data bases, the Internet, public records and personal interviews. This course stresses a systematic development of search strategies for researching news stories and emphasizes critical analysis of standard news gathering practices. Prerequisite: JRN 102.

**JRN 300 Newswriting and Reporting**

This course focuses on the writing and reporting of basic news events, such as speeches, elections, lectures, trials, news conferences, public meetings, disasters and tragedies. Students spend time outside of the classroom covering these 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 news reporting. Prerequisites: JRN 102 and JRN 200.

**JRN 301 Copy and Content Editing**

This course provides practice in copy and content editing. Students learn the techniques of copy, content and page editing. If 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 330 The Cultural History of American Journalism**

This is a study of the historic relationship between American culture and society and the printed, broadcast, and computerized news media. The course will consider how the news media influence and are influenced by cultural, social, intellectual, political, and economic institutions. As part of the course, students will study the contributions and lives of influential American journalists such as Benjamin Franklin, Thomas Paine, William Cullen Bryant, Elias Boudinot, Horace Greeley, Frederick Douglass, Ida M. Tarbell, W.E.B. DuBois, Ida B Wells-Barnett, Walter Lippmann, Henry Luce, Margaret Bourke-White, John H. Johnson, Edward R. Murrow, and Tim A. Gingo, Jr. Particular attention will also be paid to how the news media have impacted the social status and cultures of lesser-heard voices: women, African and Native Americans, immigrants, political dissidents, and others. Prerequisite: Junior standing, or sophomore standing with instructor's permission.

**JRN 400 Reporting Public Affairs**

This course focuses on the writing and research of news stories for specific content and geographical beat areas, 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 semester. Students will learn how to contact and cultivate news sources, cover breaking news stories as they occur, and write breaking and news feature 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**

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**

This course examines the intellectual and ethical obligations as well as the legal ramifications of the practice of journalism. Topics and issues will include the first amendment and its application to journalism, laws and court decisions that govern or impinge on journalists, 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 judgment, critical intelligence, and the highest ethical standards. It surveys the current state of American journalism and examines the possibilities for its improvement. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: JRN 102 and JRN 300.

**ENVIRONMENTAL STUDIES PROGRAM**

See "Science Studies" in the College of Arts and Sciences.

**EUROPEAN STUDIES PROGRAM**

See "Interdisciplinary Programs" in the College of Arts and Sciences.

**FRENCH**

See "Foreign Languages and Literatures" in the College of Arts and Sciences.
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 score. Exceptions to the patterns may be granted only by departmental permission.

Baccalaureate Writing Requirement for Majors
Students who have chosen to major in French, German, and Spanish will satisfy the Baccalaureate Writing Requirement by successfully completing LANG 375 Foreign Language in English Translation.

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 AND MINORS

As soon as students decide to major or minor in French, German, 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.

French Major: Non-teaching
Thirty-six 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.

French Minor: Non-teaching
Twenty-four 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
Thirty hours beyond 100-level to include FREN 316, 317, and LANG 558. Neither FREN 400 nor 401 can be counted toward the minor.
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 course work 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 brief 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 French, German, or Spanish, but it may apply toward a major or minor in Latin or a minor in Russian. The course may be taken in more than one language area. This course is approved as a writing-intensive course which may fulfill the writing requirement of the student's curriculum.

Representative topics which may be treated in this course include:

Classical Literature in English Translation
Themes and genres of classical literature in English translation. Possible themes include:
- Women in Greek Drama;
- Invention in Ovid's Metamorphoses;
- The Tragic Outlook;
- Ancient Epic;
- The Philosophic-Satirical Tradition in Rome.

French Literature in English Translation A
A thematic and stylistic analysis of major French writers from LaFayette to the present, to include Stendahl, Balzac, Flaubert and Proust.

German Literature in English Translation A
A comparative study of literary themes and techniques of major German writers such as Schiller, Goethe, Lessing, and Nietzsche.

Russian Literature in English Translation
A survey of the development of great Russian prose in its historical and cultural context. The course will include but not be restricted to works by Pushkin, Gogol, Turgenev, Dostoievski, Tolstoy, Gorki, Sholokhov, Pasternak, and Solzhenitsyn.

Spanish-American Literature in English Translation
Late 19th century (Ruben Darío and Modernismo) to the contemporary writers of Hispanoamerica.

Spanish Literature in English Translation
Selected Spanish prose and poetry from the Middle Ages to the twentieth century. The course will include, but will not be restricted to, works by Lope de Vega, Cervantes, St. Teresa, Calderon de la Barca, Unamuno, and Garcia Lorca, as well as the Anonymous Poem of the Cid and Lazarillo de Tormes.

LANG 376 Foreign Literature in English Translation: Form and Meaning in Literature
3 hrs.
Through the study of foreign literature in English translation, students examine how writers have used formal techniques and conventions to create meaning. Meaning will be interpreted in terms of the aesthetic, moral, or socio-political aims of the works studied. Although courses will emphasize the literature of the particular language of the course title, conventions may be treated through works from various periods and places. This course does not apply toward a major or minor in French, German, or Spanish, but it may apply toward a major or minor in Latin or a minor in Russian. 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 in the 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 skills, as well as the culture component. 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.

French Courses (FREN)
A list of approved General Education courses can be 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. Prerequisite: FREN 316 and FREN 317.
FREN 324 French Language and Society: Business in France
3 hrs.
Course on contemporary French language and society as they relate to commerce, including business communications and practices in France. Intensive practice of written and oral French. Taught in French. Prerequisites: FREN 316 and 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
6 hrs.
A summer study program of French language, literature and culture. The course consists of four to six weeks of 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.

German Courses (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.
Studies in the German 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. Prerequisites: FREN 316, 317, 325, or permission of instructor.
GGER 452 Advanced German Composition
3 hrs.
Intensive practice in composition and stylistics directed towards appreciation of literary and other written expression in German with work in free composition at an advanced level.
Prerequisites: GER 316 and 317.

GGER 453 Advanced German Conversation
3 hrs.
Intensive training in conversational German with emphasis on colloquial language and idioms. 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 literary 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.
Continued development of spoken and written expression in the Italian language through readings and discussions of civilization and culture materials. Prerequisite: ITAL 200 or equivalent.

Latin Courses (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 Intermediate Latin I
4 hrs.
The development of spoken and written expression in the Italian language through readings of major literary and cultural works. Prerequisite: ITAL 101 or equivalent.

LAT 201 Intermediate Latin II
4 hrs.
The continued development of spoken and written expression in the Italian language through readings and discussions of civilization and culture materials. Prerequisite: ITAL 200 or equivalent.

Latvian Courses (LATV)
LATV 100 Basic Latvian I
4 hrs.

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 Courses (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:

Spanish Courses (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 audiolingual emphasis.

SPAN 101 Basic Spanish II
4 hrs.
Continuation of 101. 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 review. 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/phonoology, syntax, and semantics) and applied (e.g., pragmatics, discourse analysis, sociolinguistics, and bilingualism). Prerequisite: SPAN 316, 317 or equivalent (317 may be taken concurrently with 324 with permission of Spanish advisor).

SPAN 325 Advanced Spanish Grammar and Composition
3 hrs.
An advanced study of the intricacies and problems of Spanish grammar 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 Composition
3 hrs.
Intensive practice to reinforce and expand the basic oral communication 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 Composition. 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 through aural/oral practice, written transcription, and contrastive analysis 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.

SPAN 490 Studies in Spanish Linguistics
3 hrs.
Topics vary according to area and will be announced. Each of these courses carries separate credit, although all are listed under 490. Thus, a student may take any or all of the offerings at various times. Prerequisites: SPAN 316, 317, 324, plus either 452 or 454. Representative topics which may be treated in this area include:

Old Spanish—Evolution of the Spanish language from Latin.

Spanish Language and Contemporary Society—The relationship between the Spanish language and modern Spanish culture.

Spanish Word Formation—The creation of nouns, verbs, and adjectives in Spanish.

Spanish Sound Systems—The organization of sound patterns and stress in Spanish.

Spanish Dialectology—Differences in Spanish pronunciation, vocabulary, and grammar in different regions of the Spanish-speaking world.

Spanish in Contact—How exposure to other languages affects the Spanish spoken by bilinguals.

Structure of Spanish Language—Word order and principles of grammatical organization in Spanish.

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.

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 nineteenth 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.

Topics vary 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 this area include:

- Cervantes— Don Quixote and other works of Cervantes, together with his life and thought.
- Nineteenth Century—The Romantic Movement.
- Nineteenth Century Novel—Development of the regional novel from Fernan Caballero to Benjamin Ignace. Generation of '98—Thought and works of typical representatives such as Unamuno, Azorín, 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.

GEOGRAPHY

Eldor C. Quandt, Chair
Elen M. C. Cutrim
David G. Dickason
Julie Fischer
Rolland Fraser
Changsheng He
David Lemberg
Phillip P. Micklin
Hans J. Stolle
Joseph P. Stoltman
Gregory Veeck

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.

1. A core of four courses (GEOG 105, 205, 265, 303) are required of majors. A non-teaching major in geography encompasses a minimum of 32 hours. It is recommended that 6 additional hours of work from the complementary 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 instructor.

Students are invited to call at Wood Hall (phone 387-3410) for information concerning the departmental major, minor, honors program, or financial assistance.

Baccalaureate Writing Requirement

Students who have chosen either the Geography major or the Tourism and Travel major will satisfy the Baccalaureate Writing Requirement by successfully completing GEOG 303 Geographic Inquiry.

Geography Major

32 hours credit

GEOG 105 Physical Geography
4 hrs.

GEOG 205 Human Geography
3 hrs.

GEOG 265 Map, Chart and Air Photo Reading
3 hrs.

GEOG 303 Geographic Inquiry
4 hrs.

Two courses from Group I at 200 level or above One course from Group II One course from Group III

Geography Minor

20 hours credit

GEOG 105 Physical Geography
4 hrs.

GEOG 205 Human Geography
3 hrs.

GEOG 265 Map, Chart and Air Photo Reading
3 hrs.

GEOG 303 Geographic Inquiry
4 hrs.

GEOG 380 U.S. and Canada
3 hrs.

GEOG 460 Concepts and Strategies in the Teaching of Geography
3 hrs.

and 2 additional hours

Geography Major—Secondary Education

32 credit hours

GEOG 105 Physical Geography
4 hrs.

GEOG 205 Human Geography
3 hrs.

GEOG 265 Map, Chart and Air Photo Reading
3 hrs.

GEOG 303 Geographic Inquiry
4 hrs.

GEOG 380 U.S. and Canada
3 hrs.

GEOG 460 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 with the consent of a departmental advisor.

Geography Minor—Secondary Education

22 credit hours

GEOG 105 Physical Geography
4 hrs.

GEOG 205 Human Geography
3 hrs.

GEOG 265 Map, Chart and Air Photo Reading
3 hrs.

GEOG 303 Geographic Inquiry
4 hrs.

GEOG 380 U.S. and Canada
3 hrs.

GEOG 460 Concepts and Strategies in the Teaching of Geography
3 hrs.

and 2 additional hours
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 265 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 regional courses:
GEOG 311 Geography of Michigan 3 hrs.
GEOG 380 United States and Canada 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 3 hrs.
GEOG 389 Monsoon Asia 3 hrs.
GEOG 390 China, Japan, and Korea 3 hrs.
GEOG 397 Areas and Cultures 3 hrs.

Electives: In consultation and with the approval of the program advisor, Tourism and Travel Majors are to select two additional courses in geography. Professional Practice (GEOG 412) is recommended as one of the two.

The tourism major is required to take a minor from the Hawcrest College of Business or Department of Languages and Linguistics (Modern and Classical Languages).

Group Social Studies Minor—Secondary Education Curriculum

Students in the secondary education curriculum who major in geography and choose a social studies emphasis must also complete a minor in Group Social Studies of at least 24 hours comprising the following: ECON 201 and 202 .6 hrs.; three courses in History, including at least two at the 300/400-level .9 hrs.; two courses in Political Science, including at least one at the 300/400-level .6 hrs.; and electives approved by the major advisor from the above disciplines, or from anthropology or sociology, with a minimum of 12 hrs. overall in minor at 300/400-level.

Group Social Studies Minor

Students in the elementary/middle school/junior high school curricula who choose a Group Social Studies minor should refer to the "Interdisciplinary Programs" section of this catalog.

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, 554, 555, 557, 568, 580, and 582 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 4 hrs.
GEOG 105 Physical Geography 4 hrs.
GEOG 204 National Park Landscapes 3 hrs.
GEOG 205 Human Geography 3 hrs.
GEOG 225 Introduction to Meteorology and Climatology 3 hrs.
GEOG 244 Economic Geography 3 hrs.
GEOG 306 The Post-Soviet States 3 hrs.
GEOG 356 Introduction to City and Regional Planning 3 hrs.
GEOG 358 Population: The Crowding World 3 hrs.
GEOG 408 Geography of Travel and Tourism 3 hrs.
GEOG 521 Studies in Climatology and Meteorology 3 hrs.
GEOG 544 Studies in Economic Geography 3 hrs.
GEOG 545 Studies in Human Geography 3 hrs.
GEOG 553 Environmental 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 Regional Planning 3 hrs.
GEOG 557 Environmental Impact Assessment 3 hrs.
GEOG 570 Cities and Urban Systems 3 hrs.

REGIONAL GEOGRAPHY
GEOG 309 Studies in Regional Geography 3 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, Environments, Resources 3 hrs.
GEOG 387 The Middle East and North Africa 3 hrs.
GEOG 388 Monsoon Asia 3 hrs.
GEOG 389 China, Japan, and Korea: Lands and Cultures 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 Regulation in Tourism 3 hrs.
GEOG 375 Principles of Cartography 3 hrs.
GEOG 412 Professional Practice 3 hrs.
GEOG 450 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 Remote Sensing of the Environment 3 hrs.
GEOG 597 Readings in Geography 3 hrs.

Geography Courses (GEOG)

A list of approved General Education courses can be found in "Graduation Requirements and Academic Advising" earlier in this catalog.

GEOG 100 World Ecological Problems and Man 4 hrs.

(Science credit) Geographers have long been concerned with studying the interactions between humans and their environment. The major focus of these investigations today is concerned with misuse of the environment, which has led to the present day environmental crisis. The introductory course combines scientific and non-technical appraisals of processes and problems dealing with the question of environmental quality. Therefore, human life will be studied in the physical as well as the social setting. Though major issues may vary for developing and developed nations, topics concerned with population pressure, pollution, and urbanization will be among those considered.

GEOG 102 World Geography Through Media and Maps 3 hrs.

This course presents an introduction to the geography of the earth. This includes the earth as the home of humans, major urban concentrations, descriptive physical characteristics of continents and countries, political subdivision, and general man-land relationships which reflect cultural preferences. Information delivery will be through textual material with a concentration of carefully selected audiovisual and map study activities to enhance investigating the character of distant places.

GEOG 105 Physical Geography 4 hrs.

(Science credit) A study of the physical environmental systems of our earth. The course examines the seasonal and latitudinal distribution of solar energy; analyzes the many elements of weather—solar radiation, temperature, moisture, pressure, and winds are examined during the first half of the course. Weather systems and forecasting, atmospheric optics, climatic change, and regional climates are examined during the second half of the course. Laboratory meetings dealing with instrumentation and weather map analysis are an integral part of the course. Prerequisite: GEOG 105 or equivalent.

GEOG 204 National Park Landscapes 3 hrs.

(Science credit) Introduction to the physical and human landscapes of the national park system. Consideration of those natural and human processes which have produced the distinctive features of the national parks. Evolution of the national park concept, policies, and problems.

GEOG 205 Human Geography 3 hrs.

3 hrs.

An introduction to those aspects of geography concerned with the efforts of humans to cope with the environment. Included are population and settlement forms, the utilization of resources, the impact of technology on human occupancy of the earth, and the origin and dispersal of cultural elements among the various world realms.

GEOG 225 Introduction to Meteorology and Climatology 4 hrs.

(Science credit) A non-mathematical analysis of atmospheric behavior. The fundamental physical laws affecting the elements of weather—solar radiation, temperature, moisture, pressure, and winds are examined during the first half of the course. Weather systems and forecasting, atmospheric optics, climatic change, and regional climates are examined during the second half of the course. Laboratory meetings dealing with instrumentation and weather map analysis are an integral part of the course. Prerequisite: GEOG 105 or equivalent.
Attention is also focused upon relevant current State problems.

Population distribution and settlement patterns are examined geographically. 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 365 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.

GEOG 375 Introduction to Geographic Information Systems 3 hrs.
Introduction to basic principles of Geographic Information Systems (GIS) with applications to a variety of problems using established data sources and repositories. Includes fundamental principles of cartographic design and communication. A first course in a curricular sequence developing GIS professional expertise. Prerequisite: Completion of University computer literacy proficiency.

GEOG 380 United States and Canada 3 hrs.
A study of the physical environment north of the Rio Grande follows with 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 function-by-function analysis of each of these 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.
majors only. Prerequisite: Junior standing and consent of Department Chair.

GEOG 460 Geography/Social Studies Teaching in Middle and High School 3 hrs. This is a pre-service course designed to enable students to meet professional expectations and to requirement necessary for teaching geography/social studies in middle and high schools. The teaching methodologies that enhance social science inquiry are the focus. Content standards for the Michigan Social Studies Framework are applied. Meets secondary methods requirements in geography and political science. An alternate methods course to secondary history. Fulfills the requirement for the social studies group minor. Prerequisite: GEOG 460 must be taken concurrently or following enrollment in ED 301 and 302.

Prerequisites applicable to all 500-level courses in Geography include 14 credit hours of geography, or consent of advisor and/or instructor.

GEOG 521 Studies in Climatology and Meteorology 3 hrs. (Science credit) Studies at an advanced level in climatology and meteorology. Topics of current interest to atmospheric scientists are examined in depth. Regional climatic phenomena and their relation to atmospheric circulation patterns are also investigated. Prerequisite: GEOG 225 or consent of instructor.

GEOG 544 Studies in Economic Geography 2-4 hrs. Present world patterns of agriculture, manufacture, or transportation which link global production and consumption. In any term, the course focuses upon one of these three economic sectors.

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 investigation of locational patterns. Spatial elements affecting the locational decision are examined.

3. Transportation. Emphasizes the historical development 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 545 Studies in Human Geography 2-3 hrs. Each course listed under this general title is a concentrated study of one of the principal subdivisions of human geography. The scope and principal themes of each specialized field are reviewed, with consideration given to current research on selected problems. Prerequisite: GEOG 303, or GEOG 205 or GEOG 244, or by consent of instructor. Course may be repeated for credit.

1. Cultural Geography. Techniques of spatial analysis applicable to the study of humans and their environment. The place of origin, diffusion, and present distribution of selected cultural patterns will be traced with emphasis given to cultural traits which strongly influence the behavior of the human occupants of the earth's surface.

2. Historical Geography. Studies of geographic and related features which have combined to influence the course of historical development. This course will concentrate on a particular region and/or period of time during each semester in which it is offered. Each specialization will be designated in the class schedule.

3. Political Geography. General survey of the principles and the applied aspects of political geography; primary emphasis on the physical and cultural resource bases and conflicts of national states, the assessment of location, boundary delimitation and the territorial sea, politically-organized territories within the administrative hierarchy, and electoral geography.

GEOG 553 Water Resources Management 3 hrs. Examination of water resources management with an emphasis on the effects of water uses and runoff on water quality and quantity. Topics include: water resource systems, estimating consumptive and non-consumptive water uses, and run off with computer models, and multiple socio-economic and hydrological factors in water resources management. Prerequisites: MATH 122, GEOG 105 and GEOG 225, and CS 105, or consent of instructor.

GEOG 554 Outdoor Recreation: Resources and Planning 3 hrs. (Science Credit) Examination of extensive, resource-based outdoor recreation (such as parks, wilderness, wild rivers, hunting and fishing, hiking, etc.) with emphasis upon recreational land uses; and various problems associated with outdoor recreation. Readings, discussion, and student-designed and executed individual studies provide professional orientation.

GEOG 555 Contemporary Issues in Resources Management 3 hrs. (Science credit) Examination of selected contemporary natural resource and environmental problems, such as questions of natural resource adequacy, environmental pollution, energy shortages, political and economic problems related to resource management, and individual studies of local environmental problems. Prerequisite: GEOG 350 or consent.

GEOG 556 Studies in Urban and Regional Planning 3 hrs. Each of the courses listed under this number focuses on a major aspect of planning, including a review of the objectives of the planning process, legislation pertaining to planning regulations, and methods of field and library investigation required for analysis and policy formulation in matters related to planning.

1. Urban Planning and Zoning. A survey of American planning thought and practice: the background of planning and zoning in American municipalities; traditions and contemporary approaches to the comprehensive plan; elements of land use and transportation planning; the legal foundations of zoning; and the orientation of the planning agency.

2. Regional Planning. Organization and plans of regional development programs.

3. Public Lands and Parks. Specific programs and policies relating to the preservation and/or development of government-controlled lands. Prerequisite: GEOG 356 or consent of department.

GEOG 557 Environmental Impact Assessment 3 hrs. The theory and application of geographic techniques and instruments of field investigations: collection and analysis of field data, preparation and presentation of materials. The course is based primarily upon field observations. Prerequisites: GEOG 225 or 375, and 352, or consent of department.

GEOG 558 Geodata Handling and Mapping 4 hrs. An introduction to fundamental principles and procedures of representation and analysis of geographic data, in a variety of applications. The course combines theoretical discussions with practical data analysis. Topics include: geographic measurement and representation; methods and software for descriptive and inferential statistics, with emphasis on spatial data analysis; computer mapping techniques; geographic modeling; and manipulation of data resources. Prerequisites: GEOG 375 or consent of instructor, senior or graduate standing.

GEOG 559 Quantitative Methodology 3 hrs. The application of quantitative concepts and methods to the solution of geographic problems. Critical review of research in quantitative geography, ranging from the use of common statistical techniques to alternate methods of model formulation and the analysis of spatial problems. Prerequisite: GEOG 567 or the consent of department.

GEOG 560 Geographic Information Systems 4 hrs. Geographic Information Systems (GIS) integrate geographically-referenced data from diverse sources, and assist in spatial decision-making. The course combines an overview of fundamental concepts and procedures of GIS with practical experience in the analytical use of geographic information, and covers a range of systems and applications. Course components include: measurement and representation of geographic information; alternative GIS data structures and transformations; analytical operations on spatial and non-spatial data; digitizing and analyzing spatial data quality; institutional context of GIS use. Prerequisites: GEOG 567 or consent of instructor, senior or graduate standing.

GEOG 570 Cities and Urban Systems 3-4 hrs. Study of processes and forms of urban settlement highlighting problems relating to (1) political and geographical realities of urbanized regions, (2) factors in city growth (or decline), (3) the sizes, functions, and geographical distribution of cities, and (4) population patterns in urbanized cities. Activities are designed to provide the student with experience in the use of source materials and methods of analysis utilized in urban geography.
GEOG 580 Advanced Cartography
4 hrs.
(Science credit) A review of current trends and philosophies of cartography. A combination of lectures, demonstrations, and independent projects provide the advanced cartography student with opportunities to practice state-of-the-art map design, multicolor production, photoreproduction, and computer-assisted mapping. It is recommended that GEOG 587 be taken before 580. Prerequisite: GEOG 375 or equivalent.

GEOG 582 Remote Sensing of the Environment
3 hrs.
(Science credit) The fundamental techniques and skills of photogrammetry and photointerpretation will be introduced in the 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: GEOG 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.

### Geosciences

#### Geology Major

**Minimum 38 hours**

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>GEOL 130 Physical Geology</td>
<td>4</td>
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<tr>
<td>GEOL 131 Historical Geology</td>
<td>4</td>
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<tr>
<td>GEOL 335 Mineralogy</td>
<td>4</td>
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<tr>
<td>GEOL 336 Optical Mineralogy</td>
<td>3</td>
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<tr>
<td>GEOL 430 Structural Geology</td>
<td>3</td>
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<tr>
<td>GEOL 439 Geologic Mapping</td>
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<tr>
<td>or A field course at another university</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 440 Petrology and Petrography</td>
<td>3</td>
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<tr>
<td>GEOL 435 Sedimentation and Stratigraphy</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 560 Introduction to Geophysics</td>
<td>3</td>
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<tr>
<td>Elect one of the following:</td>
<td></td>
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<tr>
<td>GEOL 432 Geomorphology</td>
<td>3</td>
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<tr>
<td>GEOL 433 Invertebrate Paleontology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 512 Principles of Hydrogeology</td>
<td>3</td>
</tr>
</tbody>
</table>

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 110 and 111; CHEM 112 and 113; PHYS 113, 114 and 115, 116 or 205, 206 and 207, 208; 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 110 and 111
- GEOL 433
- CHEM 112 and 113

#### 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**

The geology minor is designed as a supporting minor for students preparing to do professional work in the fields of chemistry, physics, engineering, zoology, botany, and geography. It cannot be combined with earth science as a major-minor or double minor relationship. A student may design a geology minor for his/her specific need.

- Required Courses
  - GEOL 130 Physical Geology 4
  - GEOL 131 Historical Geology 4
  - GEOL 335 Mineralogy 4
  - GEOL 336 Optical Mineralogy 3
  - GEOL 440 Petrology/Petrography 3
  - GEOL 301 Minerals and Rocks 4
  - GEOL 433 Invertebrate Paleontology 4
  - Additional hours in geology 6

Course substitution from other geology offerings can be made with the consent of advisor (e.g., a geography major minoring in geology might elect Geomorphology and/or Glacial Geology).

### Geophysics Major

The Geosciences and Physics Departments offer a program of study leading to a major in geophysics. Students choosing this program of study are also required to take mathematics courses which correspond to a minor in mathematics. Students contemplating a geophysics major should contact the Geosciences Department as early as possible for advising.

#### Total Major: 49–54 hours

#### Major Core: 40–42 hours

- Geology (GEOL) (20 hours)
  - GEOL 130 Physical Geology 4
  - GEOL 131 Historical Geology 4
  - GEOL 301 Minerals and Rocks 4
  - GEOL 430 Structural Geology 3
  - GEOL 439 Geologic Mapping 3
  - GEOL 560 Introduction to Geophysics 3

- Physics (PHYS) (14 hours)
  - 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

One of the following (3–4 hours)

- PHYS 330 Thermodynamics and Kinetic Theory 3
- PHYS 352 Optics 4
- PHYS 440 Electricity and Magnetism I 3

#### Electives: 9–12 hours

Three electives from upper-level geography, physics, and engineering courses to be chosen with consent of advisor (9–12 hours).
**MATHEMATICS MINOR (Required)**

**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 / CS 507 Numerical Analysis** 3

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**BACCALAUREATE WRITING REQUIREMENT**

Students who have chosen the Geophysics major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

- **GEOL 432 Geomorphology**
- **GEOL 435 Sedimentation and Stratigraphy**
- **ENGL 305 Practical Writing**

**ED 395 School and Society** 3

**MAJOR (35 hours) Hrs.**

**Required Courses**

- **PHYS 103 Sky and Solar System** Laboratory 1
- **PHYS 104 Introduction to the Sky and Solar System** 3
- **GEOM 222 Ocean Systems**
- **SCI 404 Teaching of Secondary Science** Electives 3

**MINOR (22 hours) Hrs.**

**Required Courses**

- **PHYS 103 Sky and Solar System** Laboratory 1
- **PHYS 104 Introduction to the Sky and Solar System** 3
- **SCI 404 Teaching of Secondary Science** Electives 3

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**Earth Science: Non-Teaching Major and Minor**

The non-teaching earth science major and minor programs provide a broad and flexible course of instruction for students anticipating careers in conservation and related professions, state and federal parks and planning agencies. The program is interdisciplinary in nature and offers students an opportunity to select earth science and related courses from the Departments of Geosciences, Engineering, Biological Sciences, Geography, Chemistry, Physics, and others. Courses are selected in consultation with the earth science advisor in order to design programs that will satisfy students' needs and professional objectives. A complete list of approved courses is available from the Department of Geology. A minimum of 15 credit hours in Geology is required for a major, including GEOL 438, 10 hours is required for a minor, including GEOL 130, 131 and 301 and/or 438.

Cognate requirements include a college level chemistry course (110 and 111 recommended) and a college level physics course (107 and 108—recommended—or 113 and 114).

**BACCALAUREATE WRITING REQUIREMENT**

Students who have chosen the Earth Science Non-Teaching Major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

- **GEOL 432 Geomorphology**
- **GEOL 435 Sedimentation and Stratigraphy**
- **ENGL 305 Practical Writing**

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**Hydrogeology Major**

**Total: 74-75 hours**

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 COURSE**

**Required Courses**

- **GEOL 130 Physical Geology** 4
- **GEOL 131 Historical Geology** 4
- **GEOL 430 Geologic Mapping** 3
- **GEOL 512 Principles of Hydrogeology** 3
- **GEOL 525 Surface Geophysics** 1
- **GEOL 526 Principles and Practices of Water Testing** 1
- **GEOL 527 Principles of Well Drilling and Installation** 1
- **GEOL 528 Principles and Practices of Ground-Water Sampling** 1
- **GEOL 544 Environmental Geology** 3
- **GEOL 560 Introduction to Geophysics** 3

**Students must elect two (2) of the following courses:**

- **GEOL 536 Glacial Geology** 3
- **GEOL 563 Electrical Methods** 3
- **GEOL 565 Shallow Exploration Geophysics** 3
- **GEOL 564 Field Geophysics** 3
- **GEOL 567 Computerized Geodata Handling and Mapping** 3
- **GEOL 562 Remote Sensing of the Environment** 3
- **GEOL 361 Introduction to Soils** 3
- **PAPR 350 Water Qual & Microbiol** 3
- **PAPR 353 Wastewater Treat. Sys** 3

**Required Supporting Courses**

- **MATH 122 Calculus I** 4
- **MATH 123 Calculus II** 4
- **PHYS 206 Mechanics and Heat** 4
- **PHYS 207 Electricity and Light** 4
- **PHYS 208 Mechanics and Heat** 4
- **PHYS 307 Electricity and Light** 4
- **PHYS 406 Mechanics and Heat** 4
- **CHEM 111 General Chemistry** 3
- **CHEM 112 General Chemistry II** 3
- **CHEM 116 General Chemistry Laboratory** 1
- **CHEM 211 General Chemistry Laboratory** 1
- **CHEM 113 General Chemistry Laboratory** 1
- **CHEM 114 General Chemistry Laboratory** 1
- **CHEM 215 General Chemistry Laboratory** 1
- **CHEM 370 Introduction to Organic Chemistry** 3
- **CHEM 371 Introduction to Organic Chemistry** 3
- **CS 111 Computer Science I** 4

**REQUIRED MINOR**

Students must elect one of the following minors: Biology, Computer Science, Chemistry, Mathematics, Geography, or Group Science for Geology Majors.
RECOMMENDED ADDITIONAL COURSES

CHEM 225 Quantitative Analysis 3 hrs.
CHEM 226 Quantitative Analysis Laboratory 1 hr.
CHEM 525 Techniques in Water Analysis 3 hrs.
MATH 274 Introduction to Differential Equations 3 hrs.
MATH 364 Statistical Methods 4 hrs.
CS 201 Programming in FORTRAN 2 hrs.
COM 104 Public Speaking 3 hrs.
COM 170 Interpersonal Communication 3 hrs.
ENGL 305 Practical Writing 4 hrs.

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:

GEOL 432 Geomorphology 3 hrs.
GEOL 435 Sedimentation and Stratigraphy 3 hrs.

Science and Mathematics Teaching Minor

The Department of Geosciences 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.

Geosciences Courses (GEOL)

A list of approved General Education courses can be found in "Graduation Requirements and Academic Advising" earlier in this catalog.

GEOL 100 Earth Studies 4 hrs.

Students are introduced to the origins 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. Mining, 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 nonlaboratory geology.

GEOL 130 Physical Geology 4 hrs.

A study of the common rocks and minerals and of 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 hrs.

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 address problems. Focus on the hydrosphere, atmosphere, biosphere, and lithosphere and their interactions. Fulfills General Education Area 7.

GEOL 200 Evolution of Life—A Geologic Perspective 4 hrs.

A consideration of the diversity of life through time with emphasis on the geologic constraints on evolution. Evolutionary processes and patterns of selected fossil groups from single-celled organisms to the vertebrates. Co-evolution of plants and animals, and mechanisms of extinction will be discussed. Fulfills General Education Area 6.


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 costs 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 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 302 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 312 Geology of the National Parks and Monuments 3 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 scientific 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 110 and 111; 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. Fulfills General Education Area 7.

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 110 and 111; or PHYS 107 and 108 or PHYS 113 and 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 air photographs. Three-day field trip required. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: GEOL 131; GEOL 301 or GEOL 335; PHYS 107 and 108 or PHYS 113 and 111; 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 3 hrs.

Processes, characteristics, and relationships among fluvial, deltaic, strand plain, lagoon, shelf, and slope terrigenous depositional systems. Laboratory includes textural analysis, sedimentary structures, paleoecurrent 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisite: GEOL 131; GEOL 301 or GEOL 335.

GEOL 438 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 correlations, 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 112 and 113.

GEOL 502 Problems in Geology and Earth Science
1–3 hrs.
Individual problems involving topical reading and/or 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
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 60 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.

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 523 Hazardous Waste Operation and Emergency Response
1 hr.
Training in safety procedures for working on hazardous sites. Training in the safe handling of hazardous materials which might be encountered during drilling, soil sampling, or water sampling. Review of State and Federal regulations. Use of personal protection equipment in research problems in earth sciences. Prerequisites: GEOL 412 or 512.

GEOL 524 Remediation Design and Implementation
1 hr.
Principles and techniques for the remediation or cleanup of ground water and soils contamination. Introduction to pump and treat systems, bioremediation, soil vapor extraction, air sparging, and others. Choosing the appropriate system and sizing it for economical application to a specific site. Field trips required. Prerequisite: GEOL 412 or 512.

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.
Geophysics, 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.

GREEK
See “Foreign Languages and Literatures” in the College of Arts and Sciences.
HISTORY

Bruce Haight, Chair
Linda Borah
James Brandao
Andrew Carlson
Michael Chiarappa
Janet Coryell
Ronald Davis
Deborah Deliyannis
Howard Dooley
E. Rozanne Elder
James Ferreira
Jena Gaines
Ralph Gordon
Ross Gregory
Barbara Havira
Catherine Julien
Thomas Legg
Paul Maier
John Norman
R. Patrick Norris
James Palmitessa
Dale Porter
Peter Schmitt
Larry Simon
Judith Stone
Kriss Sylviyan
Lucis Toledo Pereyra
Victor Xiong

The Department of History offers several academic and professional programs with varying requirements. Students intending to major in history should consult the department's undergraduate advisor regularly. HIST 190 is an orientation course to the historical professions, and to basic research and presentation skills in the discipline, and should be taken as early as possible.

History majors lead to the degree of Bachelor of Arts. A maximum of 9 hours of 100/200-level course work and/or course work transferred from two-year institutions may be included in a major or minor. At least half of the minimum credit hour requirement for any major or minor must be earned at Western Michigan University. Only courses in which a grade of "C" or better is earned may be applied toward a major or minor. Course work in science, and in allied social sciences and humanities, is specified by curriculum. Consult the Department of History Undergraduate Handbook.

The Department of History strongly encourages foreign study at one of WMU's international centers or in similar programs, and acquisition of foreign language skills beyond minimum program requirements.

History Major—Secondary Education Curriculum

Barbara Havira, Undergraduate Advisor
4410 Friedmann Hall (387-5366)

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 .............. 12

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.

ADDITIONAL REQUIREMENTS

In addition to the history major, students must complete the following:

1. A Group Social Studies minor of at least 12 hours including the following:
   - ECON 201 and 202 .................................. 6
   - Two courses in Geography including at least one at the 300/400-level ................... 6
   - Two courses in Political Science including at least one at the 300/400-level .............. 6
2. One approved literature course in the Department of English at the 300 level or above (or ENGL 222, 223, or 252) ............................................................ 3
3. One approved course in philosophy or religion, or in the history of political, economic, and/or diplomatic history at the 300 level or above .......................................................... 3
4. A foreign language through the 201 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 studies minor course work if selected from the appropriate disciplines. Certain courses in item two of the humanities cognate requirements similarly may be included in the major or minor.

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. Four 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 485) .......................... 6

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.

NOTE: Minimum total of 64 hrs. in the major is required. 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 Minor—Liberal Education Curriculum

Ronald Davis, Undergraduate Advisor
4301 Friedmann Hall (387-4650)

MINOR REQUIREMENTS:

Minimum of 24 hrs. of course work: At least 18 hrs. in history; with adviser approval, two courses in historical studies outside the Department of History, 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.

History Minor—Secondary Education Curriculum

Bruce Haight, Undergraduate Advisor
4301 Friedmann Hall (387-4650)

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 ........................................ 12

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 MethodsSED) ........................................ 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.
## History Courses (HIST)

A list of approved General Education courses can be found in "Graduation Requirements and Academic Advising" earlier in this catalog.

### HIST 100 Early Western Civilization
- Survey of major developments in Western civilization from the Renaissance to the present. Covers all major areas of material culture.
- Historical background of selected contemporary issues and news events.
- 3 hrs.

### HIST 110 Outline of World History
- Survey of the history and interplay of intellectual and artistic creativity from the Renaissance to the present.
- 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
- Survey 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.
- 3 hrs.

### HIST 145 Heroes and Villains in the Middle Ages
- Historical survey of the major civilizations of Europe from the late nineteenth century to the present. Covers all major areas of material culture.
- 3 hrs.

### Other Courses

- **THEORY AND PRACTICE**
- 300 Arts and Ideas: Ancient/Medieval
- 301 Modern Arts and Ideas
- 306 Technology and Culture
- 308 History of Medicine and Medical Care
- 331 Global History, 1865-1945
- 344 The World since 1945
- 346 Modern Islam
- 349 Topics in Asian and African History
- 351 Topics in the History of Latin America
- 352 Topics in Medieval History
- 353 Topics in Legal and Constitutional History
- 354 Topics in the History of East Asia
- 355 Topics in Social and Cultural History
- 357 Topics in Intellectual and Cultural History
- 358 History of Latin America
- 359 Topics in Political History

### European History

- **HIST 100 Early Western Civilization**
- 3 hrs.
- Survey of major developments in Western civilization from ancient Greece and Rome to approximately 1500.

### American History

- **HIST 101 Modern Western World**
- 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.

### General Studies in History

- **HIST 204 Business History**
- 3 hrs.
- Survey 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.

### Other Courses

- **HIST 210 American History to 1877**
- 3 hrs.
- Survey of major developments in Western civilization from the late nineteenth century to the present. Covers all major areas of material culture.

### Historian's Handbook

- **HIST 190 Historians in the Modern World**
- 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.

### History of the United States

- **HIST 211 American History since 1877**
- 3 hrs.
- Survey of major developments in Western civilization from the late nineteenth century to the present. Covers all major areas of material culture.

### History of Latin America

- **HIST 212 American Culture**
- 3 hrs.
- Survey of major developments in Western civilization from the late nineteenth century to the present. Covers all major areas of material culture.

### History of the United States

- **HIST 210 American History to 1877**
- 3 hrs.
- Survey of major developments in Western civilization from the late nineteenth century to the present. Covers all major areas of material culture.

### History of the United States

- **HIST 211 American History since 1877**
- 3 hrs.
- Survey of major developments in Western civilization from the late nineteenth century to the present. Covers all major areas of material culture.

### History of the United States

- **HIST 212 American Culture**
- 3 hrs.
- Survey of major developments in Western civilization from the late nineteenth century to the present. Covers all major areas of material culture.

### History of the United States

- **HIST 210 American History to 1877**
- 3 hrs.
- Survey of major developments in Western civilization from the late nineteenth century to the present. Covers all major areas of material culture.

### History of the United States

- **HIST 211 American History since 1877**
- 3 hrs.
- Survey of major developments in Western civilization from the late nineteenth century to the present. Covers all major areas of material culture.

### History of the United States

- **HIST 212 American Culture**
- 3 hrs.
- Survey of major developments in Western civilization from the late nineteenth century 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. Topics 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 1865–1945
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 ethnicity 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 Mycenae; the Hellenic age, and development of the polis and the city-state. 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: 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 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.
Sources 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 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 385 Modern Middle East
3 hrs.
The recent history of China, Japan, and Korea: tradition, reform, and revolutionary movements; ideas of the contrasting cultures and techniques of modernization; national ambitions 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. Considers Islam in a global relationship to the Christian West.

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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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 8 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 period; 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 430 American Maritime History 3 hrs.
This course will examine America's historic relationship with marine and freshwater environments. It will consider the economic, cultural, political, and naval uses of these bodies of water by Americans from 1700 to the present. Viewing maritime history as the documentation and interpretation of water-situated movement (people, commodities), networks (intercultural contact, economic/political linkage), culture (maritime communities), and resource use (fisheries, leisure activities), this course will assess these factors within three frameworks: 1) the American mariner's world; 2) the American maritime community along shore; 3) American society at-large.

HIST 432 Women in America to 1870 3 hrs.
Women's historical experiences from the early 18th century to 1870; focus on women's relationships to the economy, the family, politics, changing concepts of gender and ideas 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 1783 3 hrs.
Introduction to themes and issues in Native history from earliest contact to 1783. Topics include contact and conflict, depopulation, Native-European relations, cultural change and continuity.

HIST 435 American Indians Since 1783 3 hrs.
Introduction to themes and issues in Native history from 1783 to the present day. Topics include Federal-Indian relations, removal, evolution of federal Indian policy, and contemporary native society.

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 empire; 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 467** Topics in Iberian History 3 hrs.
- Period studies in the history of Spain: medieval, early modern, and modern. Topics listed in Schedule of Classes. May be repeated under different topics.

**HIST 468** Topics in European History 1–3 hrs.
- Topics listed in Schedule of Classes. May be repeated under different topics.

**HIST 471** Latin America 3 hrs.
- Period or regional studies in the history of Latin America: colonial, modern, Andes, Amazon, Mexico, Caribbean, etc. 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.
- Last 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, editing, applied research, etc. Registration requires approval of supervisor and Department Chair. Grading format is credit/no credit. Prerequisite: appropriate coursework 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 supervisors and the Department Chair. Honors students may substitute HNRS 499 (Honors College Thesis) with appropriate approval. Graded on a credit/no credit basis. Undergraduates with junior status and 12 hours of work in history may enroll in 500-level courses with prior approval of the department chair.

**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-oriented 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 596 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.

ITALIAN
See “Foreign Languages and Literatures” 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.

LATIN AMERICAN STUDIES PROGRAM
See “Interdisciplinary Programs” 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
Robert Buck
Joseph T. Buckley
Dwayne Channel
Gary Chartrand
Clifton Early
Paul Eleniengburg
Theresa Grant
Christian Hirsch
Philip Hsieh
Kate Kline
Robert Lang
Yuni Ledeyeav
Niloifer Mackey
John Martino
Joseph Mihalan
Daniel Mikhailo
Tabitha Mings
Joshua Naranjo
Dennis Nicosia
Srdjan Petrovic
Michael Raines
Allen Schwenk
Gerald Sievers
Michael Stack
Michael Stoline
Jay Treeman
Laura VanZoest
Jung Chao Wang
Arthur White
Kung-Wei Yang
Peng Zhang
Qili Zhu
Steven Ziebarth

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 course work 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—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.

CORE REQUIREMENTS

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<th>Course</th>
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<td>MATH 123</td>
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<tr>
<td>Three of:</td>
<td>MATH 330, 362, 408, 440, 445, 490, 527, (510 or 530), 567, 568, 570, 572, 574</td>
<td>9–12</td>
</tr>
</tbody>
</table>

COGNATE SCIENCE REQUIREMENTS:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 111</td>
<td>Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td>CS 201</td>
<td>Programming in FORTRAN</td>
<td>2</td>
</tr>
<tr>
<td>MATH 507</td>
<td>Numerical Analysis I</td>
<td>3</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>1</td>
</tr>
<tr>
<td>PHYS 207</td>
<td>Electricity and Light</td>
<td></td>
</tr>
<tr>
<td>PHYS 208</td>
<td>Electricity and Light Laboratory</td>
<td>OR</td>
</tr>
<tr>
<td>CHEM 101</td>
<td>or 102 General Chemistry</td>
<td>4/1–5</td>
</tr>
</tbody>
</table>

MINOR REQUIREMENT

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 507 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.

Mathematics
Major—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
**Mathematics Minor—Secondary Teaching Option**

A minimum grade point average of 2.5 must be attained in this minor option to satisfy the requirements of this program.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course 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 230</td>
<td>Elementary Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 314</td>
<td>Modern Algebra I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 330</td>
<td>Modern Algebra II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 440</td>
<td>Graphs and Mathematical Models</td>
<td>3</td>
</tr>
<tr>
<td>MATH 450</td>
<td>Teaching of Secondary School Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Two of MATH 364, 430, 522, 570, 580</td>
<td>6-7</td>
<td></td>
</tr>
</tbody>
</table>

**Baccalaureate Writing Requirement**

Students who have chosen the Secondary Teaching 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.

**Mathematics Minor—General Mathematics 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.

<table>
<thead>
<tr>
<th>Course Code</th>
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<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 230</td>
<td>Elementary Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 314</td>
<td>Mathematical Proofs</td>
<td>3</td>
</tr>
<tr>
<td>MATH 330</td>
<td>Modern Algebra I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 340</td>
<td>Fundamental Concepts of Geometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH 350</td>
<td>Teaching of Middle School Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 351</td>
<td>Computing Technology in Secondary School Mathematics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Applied Statistics Minor**

Students who have chosen the Statistics major will satisfy the Baccalaureate Writing Requirement by successfully completing MATH 314 Mathematical Proofs.

**Elementary and Middle School Teaching Minor**

Students in an Elementary School and Middle School curriculum must contact a mathematics advisor for information on available mathematics programs.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 150</td>
<td>Number Concepts for Elementary/Middle School Teachers</td>
<td>4</td>
</tr>
<tr>
<td>MATH 151</td>
<td>Geometry for Elementary/Middle School Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH 265</td>
<td>Probability and Statistics for Elementary/Middle School Teachers</td>
<td>4</td>
</tr>
<tr>
<td>MATH 352</td>
<td>Teaching of Elementary/Middle School Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 554</td>
<td>Algebra in the Elementary/Middle School Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>MATH 556</td>
<td>Mathematical Problem Solving in the Elementary/Middle School Curriculum</td>
<td>3</td>
</tr>
</tbody>
</table>

**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
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 sequence course. A list of approved General Education courses can be found in "Graduation Requirements and Academic Advising" 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, algebraic expressions, and 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 is granted 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 118, 122, 200, 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 intended for students whose programs of study include 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. Included will be a discussion of: sets, relations and functions; systems of linear equations 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, indeterminate 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. The relationship of these concepts with 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 Teaching 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 tessellation, 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. Topics 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 1½ 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
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 proof, 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, permutoses and simple geometric axiom systems. The course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum. Prerequisite: MATH 123 or 374.

MATH 330 Modern Algebra I 4 hrs.
This course introduces the abstract algebraic concepts of groups, rings, and fields, and shows how they relate 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 geometry. 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 effectively 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 certification leading to secondary mathematics teacher certification. Prerequisite: Prior programming experience, MATH 350, and acceptance into Professional College of Education.

MATH 362 Teaching of Elementary/Middle School Mathematics 3 hrs.
This course covers curriculum and instructional issues in elementary school mathematics. Prerequisites: MATH 151 and MATH 265 with grades of “C” or better, and ED 309 and 310.

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 introduction to statistics for students in the biological and related sciences with an emphasis on the basic concepts and explanations of why things work. The focus is on quantitative reasoning and statistical thinking for making decisions and conjectures. This numerical art will be illustrated with a wide range of interesting problems. Topics include descriptive statistics such as means, medians, standard deviation, percentiles; correlation and regression—interpretation and prediction problems; the normal and binomial distributions; law of averages; sampling variability and standard errors; Inferential statistics—confidence intervals and tests of hypotheses for one- and two-sample problems. Students can receive credit for only one of MATH 216, 260, 364, or 366. Prerequisite: MATH 110 or the equivalent or satisfactory score on the departmental placement exam.

MATH 374 Differential Equations and Linear Algebra 4 hrs.
Slope fields, first order differential equations and applications, linear differential equations, numerical methods, solution of systems of linear algebraic equations, eigenvalues and eigenvectors, systems of differential equations, and series solutions. The computer algebra system Maple will be used to explore some of these topics. Prerequisite: MATH 272.

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 judgment, 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 563, 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum. Prerequisite: MATH 374 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 theorems, group isomorphisms, ideals, 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 applications. Prerequisites: 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 distributions, 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 graphics capabilities of SASGRAPH and MINITAB will also be included. The following topics may be emphasized: data entry; editing; production of statistical summaries in the form of tables, graphs, 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 500-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 nonlinear equations, systems of linear equations, interpolation, numerical differentiation and integration. Prerequisites: MATH 374 and a computer programming language beyond Basic, e.g., Fortran or C.

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 many fields of 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, connectivity, separation axioms, compactness, product and quotient spaces, paracompactness, and manifolds. Prerequisites: MATH 330 or MATH 370.

MATH 527 Differential Geometry of Curves and Surfaces
3 hrs.
An introduction to Riemannian Geometry with emphasis on curves and surfaces. Topics may include: isometrics, 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 not 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. Most teachers and computers are used throughout the course to develop concepts, to model numerical methods, and to explore the connections between symbolic and graphical representations of mathematical ideas. Prerequisite: MATH 352 or 552 with a 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 a 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 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 T² and other multivariate methods are discussed for the one and two sample problems and MANOVA for standard designs. Topics that will be accentuated are principal components analysis, discriminant analysis, cluster analysis, and factor analysis. Emphasis will be on graphical methods and applications. Prerequisite: An introductory course in statistics and a course in linear algebra.

MATH 562 Statistical Theory
4 hrs.
A first course in statistical theory. Topics include: random variables, distributions of statistics, limiting distributions, elementary theory of estimation, and hypothesis testing. Prerequisites: MATH 230, 364, 560 (or 460) or equivalent.

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, 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 design of experiments. Taguchi methods will be discussed along with modifications from standard statistical practice. Topics will include planning and experiment, experimental strategy, Analysis of Variance concepts, factorial designs, orthogonal arrays, loss functions, signal-to-noise ratios, identification of 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
Emphasis will be on the application of nonparametric statistical methods to data from many different applied fields. 

**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 modeled 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. 

**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-Stieltjes 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, Stoke's Theorem, analytic functions, Laurent expansions, residues, argument principle, and conformal mapping. Prerequisite: MATH 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. Prerequisite: 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 STUDIES PROGRAM**

See “Interdisciplinary Programs” in the College of Arts and Sciences. 

**PHILOSOPHY**

Kent Baldner, Chair

Syliva Culp

John Dilworth

Joseph Ellin

Arthur Falk

John Hartline, Adjunct

Insoo Hyun

Stephen Jefferson, Adjunct

Timothy McGrew

David Newman

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 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. 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 480, and one of the following three courses: PHIL 310, 332, or 333.

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.

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.
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 Major—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 28 hours in Philosophy, including PHIL 300 or 301, PHIL 480, and one of the following three courses: PHIL 310, 332, or 333.
2. ONE of the following:
   - PHIL 300, 301
   - Two of the following:
     - PHIL 201, 303, 310, 311, 313, 314, 315, 316, 334, 534
3. PHIL 410 Professional Ethics (3 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 with the professional and applied ethics concentration 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 15 hours in philosophy. Minors may choose any courses they find suitable. Minors are strongly urged to consult with advisors (preferably after completing 8 hours). Students must complete a minor slip in the Philosophy Department office.

Philosophy Minor—Professional and Applied Ethics

Minimum of 18 credit hours. Minor slip required. Required Philosophy courses:

1. ONE of the following: PHIL 300, 301
2. TWO of the following: PHIL 201, 303, 310, 311, 313, 314, 315, 316, 334, 534
3. PHIL 410 Professional Ethics

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. Other 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 may apply up to four credit hours from an approved General Education course to the Baccalaureate Writing Requirement of the student’s curriculum.

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 philosophical traditions up to the sixteenth century. Great thinkers, such as Plato, Aristotle, Augustine, and Aquinas will be emphasized. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum.

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. Among topics are Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, and Kant. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum.

PHIL 303 Existentialist Philosophies

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, consequences. Contemporary works are emphasized. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum.

PHIL 311 Political Philosophy

3 hrs.

An examination of fundamental problems arising from political and social relationships. The main emphasis is on such political 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 environment, animal rights, 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 philosophically examination of principles and values underlying contemporary social issues involving race, gender, and related concepts. Topics include: identity, equality/inequality, equity, human rights, 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 transcribed into the symbolic notation of propositional and predicate 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. This course is approved as a writing-intensive course when topics vary.

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. This course is approved as a writing-intensive course when topics vary.

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 philosophically 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 philosophically 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 3 hrs.
A philosophically examination of the foundations of ethics in the professions. Topics to be considered include the professions and professional relationships between professional and ordinary ethics, social responsibilities of the professions, professional/client relationships, regulation of the professions, and codes of ethics.

PHIL 470 Seminar in Philosophy—Variable Topics 2-4 hrs.
Seminars deal with selected advanced topics in philosophy. Since content varies from semester to semester, students are advised to check course descriptions which are available in the department office. Suggestions for seminar topics will be 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 philosophically movement; or 3) a major philosophically 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 498 Independent Study 2-4 hrs.
Independent study is for those students who have attained a degree of competence in philosophy and 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 a 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.

PHIL 507 The Continental Tradition in Philosophy 2-4 hrs.
An examination of the Continental tradition in philosophy. Topics may vary from term to term. Examples include: phenomenology, existentialism, post-modernism, structuralism, deconstructionism, critical theory, and hermeneutics. Prerequisites: 12 credit hours in Philosophy, including PHIL 301. May be repeated for credit, with advisor's approval, when topics vary.

PHIL 520 Philosophical Applications of Symbolic Logic 3 hrs.
This course is designed to expose students to the range of philosophical applications of modern symbolic logic. Studying with the sentential and predicate calculus, the course explores various extensions which may include alethic model logic, antilogic, tense logic, relevance logic and modal logic. In addition, the course will address salient issues in the philosophy of logic and may include an investigation of the logical paradoxes and/or the controversy surrounding quantified modal logic. Prerequisites: 12 hours of philosophy, including PHIL 225 or 320.

PHIL 525 Decision Theory 4 hrs.
Can there be a formal theory of what it is to be rational in one's beliefs and actions? This course is an introduction to decision theory, which claims to be just such a theory of rationality. Attention will be given to both its mathematical development and the issues it raises in the philosophy of science, the theory of knowledge, and action theory. A working knowledge of high school algebra is assumed. Prerequisites: PHIL 220, 225, or 320; and two other courses in philosophy, mathematics (above the level of MATH 110), or computer science (above the level of CS 105).

PHIL 534 Moral and Philosophical Foundations of Health Care 3 hrs.
In this course philosophical reflection and biological science are combined in a critical examination of the nature and purpose of the health sciences. Topics to be considered include: the aims of the health sciences; the interplay of fact and value in health care; competing images of humankind embedded in health science; patient autonomy, dignity, and medical paternalism. Prerequisites: 12 credit hours in philosophy and/or biological sciences or a health professional field.

PHIL 540 Philosophy of Mind 2-4 hrs.
A study of the philosophical problems surrounding our understanding of the nature of mind, mental states, and consciousness, and their relation to the matter, and state of the brain. Possible topics include cognitive science, artificial intelligence, the relation of mind to body and/or behavior, teleological and mechanistic explanations of human behavior, the philosophical foundations of psychology, behaviorism, functionalism, the nature of intentionality, the concept of a person, the privacy of mental states, knowledge of other minds, and questions regarding free will and determinism. May be repeated for credit, with advisor's approval, when topics vary. Prerequisites: 12 credit hours in Philosophy, including PHIL 301.

PHIL 550 Philosophy of Science 2-4 hrs.
A detailed examination of some of the central problems in contemporary philosophy of science. Topics may vary from term to term. Typical topics include: nature of scientific explanation, theory structure and change, scientific realism vs. various anti-realisms, or issues in the special sciences, e.g., the physical, biological or social sciences. Prerequisites: 12 credit hours in Philosophy. May be repeated for credit, with advisor's approval, when topics vary.
PHIL 590 Philosophy at Pre-College Levels
2-4 hrs.
A content-oriented course that explores topics, reading materials, 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 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 201 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.

<table>
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<tr>
<th>PHYSICS</th>
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<tbody>
<tr>
<td>Nora Berrah</td>
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<td>Clement Burns</td>
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<td>Sung Chung</td>
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<td>Thomas Kuruczca</td>
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<td>Dean Halderson</td>
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<td>Emanuel Kamber</td>
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<td>Robert Shamu</td>
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<td>John Tanis</td>
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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 Geosciences and Physics, is also available, enabling students to prepare for a career in an important area of applied physics. Any student contemplating a double or minor 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 in physics, in secondary education physics, and in astronomy.

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

**REQUIRED COURSES**

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<td>PHYS 205 Mechanics and Heat</td>
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<td>PHYS 206 Mechanics and Heat Laboratory</td>
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<td>PHYS 310 Introductory Modern Physics Laboratory</td>
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<td>PHYS 330 Thermodynamics and Kinetic Theory</td>
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<td>PHYS 342 Electronics</td>
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<td>PHYS 420 Analytical Mechanics</td>
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<td>PHYS 440 Electricity and Magnetism</td>
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<td>PHYS 460 Quantum Mechanics</td>
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<td>PHYS 466 Advanced Laboratory</td>
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**REQUIRED COGNATES**

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<td>MATH 122 Calculus I</td>
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<td>MATH 123 Calculus II</td>
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<td>MATH 272 Vector and Multivariate Calculus</td>
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<td>MATH 374 Introduction to Linear Algebra and Differential Equations</td>
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<td>MATH 572 Vector Calculus and Complex Variables</td>
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<td>CHEM 110 and 111 General Chemistry I and II</td>
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**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 466 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.

**REQUIRED COURSES**

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<td>PHYS 205 Mechanics and Heat</td>
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<td>PHYS 440 Electricity and Magnetism</td>
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<td>PHYS 460 Quantum Mechanics</td>
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<td>PHYS 466 Advanced Laboratory</td>
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<td>PHYS 564 Nuclear and Particle Physics</td>
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<td>MATH 374 Introduction to Linear Algebra and Differential Equations</td>
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<td>PHYS 360 Vector Calculus and Complex Variables</td>
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<td>CHEM 110 and 111 General Chemistry I and II</td>
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**ADDITIONAL REQUIRED COURSES**

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 ECE course work and be approved by the advisor.

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<tr>
<td>PHYS 135 Optics</td>
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<td>PHYS 562 Atomic and Molecular Physics</td>
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<td>PHYS 564 Nuclear and Particle Physics</td>
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<td>ECE 320 Electronics I</td>
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<td>ECE 330 Electrical Machinery</td>
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<td>ECE 371 Linear Systems</td>
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<td>ECE 380 Probabilistic Methods of Signal and System Analysis</td>
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<td>ECE 420 Power Electronics</td>
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<td>ECE 430 Electrical Power Systems</td>
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<td>ECE 451 Digital System Design</td>
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<td>ECE 455 Digital Signal Processing</td>
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<td>ECE 460 Communication Systems</td>
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<tr>
<td>ECE 470 Feedback Systems</td>
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**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 will satisfy the Baccalaureate Writing Requirement by successfully completing PHYS 466 Advanced Laboratory.

Physics Major with Materials Science Option
This program is designed for those students who wish to pursue a physics degree with a concentration in Materials Science.

REQUIRED COURSES
PHYS 205 Mechanics and Heat Laboratory . . . 1
PHYS 206 Mechanics and Heat Laboratory . . . 4
PHYS 207 Electricity and Light Laboratory . . . 1
PHYS 208 Electricity and Light Laboratory . . . 1
PHYS 209 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 112 and 113 General Chemistry I and II . . . . 4
GEOL 335 Mineralogy . . . . 4
GEOL 336 Optical Mineralogy . . . . 3

COMPUTER PROGRAMMING REQUIREMENT
The Department requires Physics majors with Materials Science 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 Secondary Education Physics major will satisfy the Baccalaureate Writing Requirement by successfully completing ED 395 School and Society.

Geophysics Major

REQUIRED COURSES
PHYS 205 Mechanics and Heat Laboratory . . . 1
PHYS 206 Mechanics and Heat Laboratory . . . 4
PHYS 207 Electricity and Light Laboratory . . . 1
PHYS 208 Electricity and Light Laboratory . . . 1
PHYS 342 Electronics Laboratory . . . . 4
PHYS 330 Thermodynamics and Kinetic Theory . . . 3
PHYS 440 Electricity and Magnetism . . . . 4

For the following:
GEOL 130 Physical Geology . . . . 4
GEOL 131 Historical Geology . . . . 4
GEOL 301 Minerals and Rocks . . . . 3
GEOL 430 Structural Geology . . . . 3
GEOL 439 Geologic Mapping . . . . 3
GEOL 560 Introduction to Geophysics . . . . 3
CHEM 110 and 111 General Chemistry I and II . . . . 4
MATH 122 Calculus I . . . . 4
MATH 123 Calculus II . . . . 4
MATH 272 Vector and Multivariate Calculus . . . . 4
MATH 374 Linear Algebra and Differential Equations . . . . 4
CS 306 Introductory Programming: FORTRAN . . . . 4
MATH 507 Numerical Analysis I . . . . 3

In addition, a student is required to take three 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 will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses: GEOG 435 Sedimentation and Stratigraphy, or ENGL 305 Practical Writing.

Physics Minor

REQUIRED COURSES
PHYS 205 Mechanics and Heat Laboratory . . . 1
PHYS 206 Mechanics and Heat Laboratory . . . 4
PHYS 207 Electricity and Light Laboratory . . . 1
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.

Astronomy Minor

REQUIRED COURSES
PHYS 103 Sky and Solar System Laboratory . . . 1
PHYS 104 Introduction to the Sky and Solar System . . . . 3
PHYS 106 Introduction to Stars and Galaxies . . . . 3
PHYS 205 Mechanics and Heat Laboratory . . . 4
PHYS 206 Mechanics and Heat Laboratory . . . 4
PHYS 325 Introduction to Astrophysics . . . . 3
PHYS 498 Special Problems . . . . 1-3

Students not majoring in physics should note that the following additional physics courses are required prerequisites for PHYS 325: PHYS 207 Electricity and Light, 4 hrs.; PHYS 208 Electricity and Light Laboratory, 1 hr.; and PHYS 309 Introductory Modern Physics, 3 hrs.

Physics Courses (PHYS)

A list of approved General Education courses can be found in "Graduation Requirements and Academic Advising" 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 101 The Science of Music 
3 hrs.
This course is an introduction to the physics of sound and music. Topics covered include the nature of sound, sources of sound, including musical instruments; musical tone; sound propagation; musical recording; synthesized music; sound perception. Prerequisite: MATH 110 or equivalent.

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 Sky and Solar System Laboratory 
1 hr.
This is an astronomy laboratory course designed to illustrate and explore some of the topics covered in PHYS 104 Introduction to the Sun and Solar System. Corequisite: PHYS 104. A student cannot receive credit for both PHYS 103 and PHYS 105.

PHYS 104 Introduction to the Sky and Solar System 
3 hrs.
This is an introduction to the night sky and our solar system. The student will learn about the cycles of the Sun, Moon, planets, and constellations; the historical development of astronomy; basic properties of light and telescopes; nature and properties of the planets and the Sun; asteroids, meteorites, and comets; and the creation and evolution of the solar system. A student cannot receive credit for both PHYS 103 and PHYS 104. Students must take PHYS 103 concurrently with PHYS 104 if they wish to fulfill the requirement of General Education Area VI. Prerequisite: MATH 110 or equivalent.

PHYS 106 Introduction to Stars and Galaxies 
3 hrs.
This course introduces the student to the origin and evolution of stars, galaxies, and the universe. Topics covered include the basic properties of stars; the birth, life, and death of stars; stellar explosions; the origin of the elements; and the origin and fate of the Universe. Students may take PHYS 110 concurrently with PHYS 106 if they wish to fulfill the requirements of General Education Area VI. Prerequisite: MATH 110 or equivalent.

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 one semester course at the level of general college physics. A student cannot receive credit for both PHYS 107 and any of the following: PHYS 109, PHYS 113, or PHYS 205. Prerequisite: MATH 110 or equivalent. Corequisite: PHYS 108.

PHYS 108 Elementary Physics Laboratory 
1 hr.
This is a laboratory course which includes exercises related to topics covered in PHYS 107. A student may not receive credit for both PHYS 108 and any of the following: PHYS 109, PHYS 113, or PHYS 205. Prerequisite: MATH 110 or equivalent. Corequisite: PHYS 108.

PHYS 109 Elementary Physics 
5 hrs.
This course surveys physics from classical mechanics to relativity and quantum physics in one semester. The laboratory work emphasizes principles of measurement and scientific methodology. A student may not receive credit for both PHYS 109 and any of the following: PHYS 107, PHYS 108, PHYS 113, or PHYS 205. Prerequisite: High school algebra.

PHYS 110 Stars and Galaxies Laboratory 
1 hr.
This is an astronomy laboratory course designed to illustrate and explore some of the topics covered in PHYS 106 Introduction to Stars and Galaxies. Corequisite: PHYS 106.

PHYS 113 General Physics I 
4 hrs.
A general college physics course physics 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.
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 may not receive credit for both PHYS 114 and either PHYS 108 or PHYS 206. Corequisite: PHYS 113.

PHYS 115 General Physics II 
4 hrs.
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.
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 may not receive credit for both PHYS 116 and PHYS 208. Corequisite: PHYS 115.

PHYS 205 Mechanics and Heat 
4 hrs.
This first course in a sequence of three in calculus-based physics deals with mechanics and heat. PHYS 205 is intended for physics majors, engineering students, and future physics teachers, and is recommended for majors in other sciences. Corequisite: MATH 123. A student can receive credit for only one of the following courses: PHYS 107, PHYS 109, PHYS 113, or PHYS 205.

PHYS 206 Mechanics and Heat Laboratory 
1 hr.
This is a laboratory course which includes exercises related to topics covered in PHYS 205. A student may not receive credit for both PHYS 206 and either PHYS 108 or PHYS 114. Corequisite: PHYS 205.

PHYS 207 Electricity and Light 
4 hrs.
This course follows PHYS 205 and consists of studies in electricity, magnetism, and light. Prerequisites: PHYS 205, MATH 123, and MATH 272 or MATH 110 concurrently. A student can receive credit for only one of the following courses: PHYS 107, PHYS 109, PHYS 115, or PHYS 207.

PHYS 208 Electricity and Light Laboratory 
1 hr.
This is a laboratory course which includes exercises related to topics covered in PHYS 207. A student may not receive credit for both PHYS 208 and PHYS 116. Corequisite: PHYS 207.

PHYS 214 Mechanics and Heat Problems 
1 hr.
This course is intended for those who have had 113 General Physics I, or its equivalent at another school, and who need to show credit in 205 Mechanics and Heat. The emphasis is on problem solving using calculus with the mathematical rigor required in PHYS 205. This course plus PHYS 115 is equivalent to PHYS 205. Prerequisites: PHYS 113 General Physics I or equivalent, MATH 123 concurrently, or consent of instructor.

PHYS 215 Electricity and Light Problems 
1 hr.
This course is intended for those who have had 115 General Physics II, or its equivalent at another school, and who need to show credit in 207 Electricity and Light. The emphasis is on problem solving using calculus with the mathematical rigor required in PHYS 207. This course plus PHYS 115 is equivalent to PHYS 207. Prerequisites: PHYS 115 General Physics II or equivalent, MATH 123, and MATH 272 (or MATH 230) concurrently.

PHYS 309 Introductory Modern Physics 
3 hrs.
This course, with PHYS 205/206 and PHYS 207/208, completes the sequence making up the introductory courses in physics with calculus. Topics include special relativity, quantum physics, and atomic, nuclear, and solid state physics. This course consists of three lectures per week. Prerequisite: PHYS 207.

PHYS 310 Introductory Modern Physics Lab 
1 hr.
A laboratory course which includes exercises related to the topics covered in PHYS 309. Corequisite: PHYS 309.

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.

PHYS 320 Problems in Mechanics 
2 hrs. Fall
This course is designed to enhance the 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.

PHYS 325 Introduction to Astrophysics 
3 hrs. Winter
This course is an introduction to modern astrophysics. Topics include the properties of light and matter as relevant to astronomy; analysis of spectra; the properties, structure, and evolution of stars; binary stars; nucleosynthesis and supernova; physics of white dwarf stars, neutron stars, and black holes; and basic cosmology. Prerequisite: PHYS 309 (PHYS 106 is recommended).

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 kinetic theory with selected topics is also included, as is an introduction to quantum statistics. Prerequisite: PHYS 207.
PHYS 331 Problems in Thermodynamics
1 hr. Fall
This course is designed to enhance the problem-solving techniques needed by Secondary Education instructors in the teaching of thermodynamics. Emphasis is on the use of Second Law diagrams, P-V diagrams, and the energy balance in simple thermodynamic systems. Prerequisite: PHYS 205.

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 3-hour laboratory per week. A student cannot receive credit for both PHYS 342 and EECE 230. Prerequisite: PHYS 207.

PHYS 352 Optics
3 hrs. Fall
This is an introductory course in geometrical and physical optics in which the main topics covered are reflection, refraction, lenses, 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 life, earth, 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 and ED 390 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. Fall
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 new electric effect. Topics include the Schroedinger wave equation, hydrogenic atoms, two-electron atoms, angular momentum coupling, and perturbation theory. Prerequisites: PHYS 309 and 420 or consent of instructor.

PHYS 466 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 in these 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 three three-hour laboratory periods each week. This course requires the student to complete several assignments which will demonstrate skills in technical writing. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum. Prerequisites: PHYS 342 and PHYS 460 (460 may be elected concurrently with 466.)

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 following 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 properties 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 598 Selected Topics
1–4 hrs.
This course affords an opportunity for advanced students with good scholastic ability to do original work in either pure or applied physics. Prerequisite: Consent of instructor.

POLITICAL SCIENCE

David G. Houghton, Chair
Steven T. Berell
James M. Butterfield
John A. Clark
Paul Clements
Kevon Cooper
Kenneth A. Dahlberg
Suhasini Datta-Sandhu
Anna Liesl Haas
Emily Hauptmann
Gunther M. Hega
Alan C. Isaak
Peter Kobrak
Ashlyn Kuersten
Neil Pinney
Peter G. Renstrom
William A. Ritchie
Chester B. Rogers
Murray Scot 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 minor in political science or public administration should come to the department office as soon as possible to consult with a departmental advisor.

Institute of Government and Politics

The Department of Political Science houses and administers 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. It is charged with the development of relationships between the Department of Political Science and the various colleges, departments, and programs comprising the University.

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.

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 sophomore standing, a better than “B” average, and a willingness to do original and independent work. Students interested in the program should consult the departmental honors advisor.
Programs of Study

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.

Political Science Majors and Minor

Political Science Major

The major consists of a minimum of 33 semester hours of work in the department. A grade of "C" or better is required in all courses in the major, including courses in all concentrations of the major (i.e., international and comparative politics, public administration, public law, public policy, and the secondary education curriculum). It is expected that transfer students will take at least one-half of the minimum required 33 hours in the department.

REQUIRED CORE COURSES

- PSCI 366 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 365)

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.

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Political Science major (any concentration) or the Public Administration major may satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

- PSCI 421 Gender and Law
- PSCI 450 Seminar in International and Comparative Politics
- PSCI 490 Political Science Honors Seminar
- PSCI 494 Seminar in Political Science

Political Science Major—International and Comparative Politics Concentration

This concentration is available within the political science major 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.

A grade of "C" or better is required in all courses in the major in political science with a concentration in international and comparative politics.

For the political science major concentration in international and comparative politics, a student must complete the following:

REQUIRED CORE COURSES

- PSCI 117 National Government
- PSCI 240 Introduction to Comparative Politics
- PSCI 250 International Relations
- ONE course in political theory (to be chosen from PSCI 360, 361, 362, 363, or 365)
- PSCI 366 Scope and Methods of Political Science
- PSCI 395 Quantitative Methods for Political Scientists

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

EACH OF THE FOLLOWING COURSES (6-7 hrs.)

- PSCI 450 Seminar in International and Comparative Politics (prerequisite: PSCI 250, one of the 340's, and approval of the instructor or the advisor)
- ONE other course in international or comparative politics (prior Approval by advisor required)

BACCALAUREATE WRITING REQUIREMENT

ONE course to be chosen from PSCI 421, 450, 490, or 494

COGNATE COURSES (6-11 hrs.)

Complete at least three additional courses on foreign, international, or cross-national topics from at least two of the following departments: Anthropology, Economics, Science Studies, Geography, History, Foreign Languages and Literatures, Marketing, Comparative Religion, or Sociology. Students must receive prior permission from the concentration advisor before selecting courses in these departments.

FOREIGN LANGUAGE REQUIREMENT

Student must complete two years of the same foreign language, and this can be met in one of the following four ways. First, successful completion (defined as passing) of the 201-level course at WMU in the language of their choice. Second, successful completion of similar courses at another institution which are accepted as transfer credit by WMU. Third, passing the Foreign Language Placement Evaluation Exam in the language of their choice regularly offered by the Department of Foreign Languages and Literatures. The student must be placed in the third year of study, which means the student's level of competence is in accordance with two completed years. Fourth, if the student is a foreign student or first language is not English, the student is exempt from this requirement. Determination of eligibility for this exemption will be based on whether the student was required to take the TOEFL test for admission.

Political Science Major—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 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.

A grade of "C" or better is required in all courses in the major in political science with a concentration in public law.

For the political science major concentration in public law, a student must complete the following:

REQUIRED CORE COURSES (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 365)

REQUIRED COURSE (4 hrs.)

- PSCI 320 American Judicial Process

TWO OF THE FOLLOWING COURSES (6 hrs.)

- PSCI 325 Criminal Justice Policy
- PSCI 420 Constitutional Law
- PSCI 422 Civil Liberties and Civil Rights

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

BACCALAUREATE WRITING REQUIREMENT

ONE course to be chosen from PSCI 421, 450, 490, or 494

Political Science Major—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 allows 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 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.

A grade of "C" or better is required in all courses in the major in political science with a concentration in public policy.

For the political science major concentration in public policy, a student must complete the following:

- 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 365)
Political Science 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 250 International Relations
- ONE course in foreign and comparative political science (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 366)

Requirements may be waived with the written permission of the chairperson of the department.

Public Administration Programs

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 may 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 on entering the program.

A grade of "C" or better is required in all courses in the major in political science with a concentration in public administration.

The political science major in public administration requires 40 semester credit hours divided between: (1) a 34-semester-hour core of required courses; and (2) 6 hours of electives.

Political Science Major in Public Administration

REQUIRED CORE COURSES (22 hrs.)

PSCI 200 National Government
PSCI 202 State and Local Government
PSCI 304 Intro. to Public Policy
PSCI 362 Contemporary Political Theory
PSCI 363 American Political Theory
PSCI 562 Modern Democratic Theory

METHODS (6 hrs.)

PSCI 366 Scope and Methods of Political Science
PSCI 395 Quantitative Methods for Political Scientists

POLICY APPLICATIONS AND INSTITUTIONS (16 hrs.)

PSCI 300 Urban Politics
PSCI 304 Intro. to Public Policy
PSCI 306 Environmental Politics
PSCI 350 American Foreign Policy
PSCI 404 Making Public Policy
PSCI 526 Administrative Law and Public Reg.

ONE course from List A below:

PSCI 314 The Presidency
PSCI 315 Politics of Congress
PSCI 320 American Judicial Process

ONE course to be chosen from PSCI 421, 450, 490, or 494.

BACCALAUREATE WRITING REQUIREMENT

ONE course to be chosen from PSCI 421, 450, 490, or 494.

Political Science Minor in Public Administration

REQUIRED COURSES

PSCI 200 National Government
PSCI 202 State and Local Government
PSCI 304 Intro. to Public Policy
PSCI 306 Environmental Politics
PSCI 350 American Foreign Policy
PSCI 404 Making Public Policy
PSCI 405 National Public Policy
PSCI 526 Administrative Law and Public Regulation
PSCI 530 Politics of Governmental Budgeting and Finance
PSCI 535 Administrative Law

ADDITIONAL REQUIRED COURSES

ECON 201 Principles of Microeconomics
ECON 202 Principles of Macroeconomics
ACTY 210 Principles of Accounting I

ELECTIVES

TWO courses to be chosen from:

PSCI 390 Field Work in Political Science
PSCI 391 Internship Seminar
PSCI 404 Making of Public Policy
PSCI 405 National Public Policy
PSCI 528 Administrative Law and Public Regulation
PSCI 530 Problems in Pub. Admin.
PSCI 531 Admin. in Local and Regional Governs.
PSCI 534 Administrative Theory

BACCALAUREATE WRITING REQUIREMENT

ONE course to be chosen from PSCI 421, 450, 490, or 494.

REQUIRED MINOR

 Majors in public administration must choose one directed minor (15-24 hrs.) in consultation with a public administration advisor.

Political Science Minor in Public Administration

REQUIRED COURSES

The minor in public administration requires 22 hours, including all REQUIRED CORE COURSES listed above for the major in public administration. Many political science majors choose to minor in public administration.

Related Major with Business

The Department of Political Science also cooperates with the Haworth College of Business in offering a major in public administration (PAB) designed for students planning careers in the private sector involving contact with governmental agencies and activities. The student receives a Bachelor of Business Administration with a business administration major plus the political science minor in public administration. For further details, see Business Administration: Related Majors.

Secondary Education Programs in Political Science

Secondary Education Major in Political Science

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. A grade of "C" or better is required in all courses in the secondary education major in political science. The following are the program requirements for teaching majors:

REQUIRED COURSES

PSCI 200 National Government
PSCI 202 State and Local Government
PSCI 250 International Relations
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 366)

Baccalaureate Writing Requirement (to be chosen from PSCI 421, 450, 490, 494)

Students who 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 studies.

Secondary Education Minor in Political Science

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. The following are the program requirements for teaching minors:

REQUIRED COURSES

PSCI 200 National Government
PSCI 202 State and Local Government
PSCI 250 International Relations

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 366)

ONE 3-hour elective

Group Social Studies Minor for Majors in Political Science

Students in the secondary education curriculum who major in Political Science must also complete a minor in Group Social Studies of at least 24 hrs., comprised of the following:

ECON 201 and 202 .......................... 6 hrs
GEOG 101 and 380 .......................... 6 hrs
Three courses in History .......................... 9 hrs

One from HIST 211, 212 .......................... 3 hrs
TWO from HIST 313, 316, 326, 328 .......................... 6 hrs
ANTH 344 .......................... 3 hrs
# Courses By Topic

## PRINCIPLES

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<td>Critical Thinking about Politics</td>
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<td>Scope and Methods of Political Science</td>
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## AMERICAN POLITICAL SYSTEM

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## PUBLIC ADMINISTRATION

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<td>530</td>
<td>Problems in Public Administration</td>
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<td>531</td>
<td>Administration in Local and Regional Governments</td>
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<td>532</td>
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<td>534</td>
<td>Administrative Theory</td>
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<td>The Politics of Governmental Budgeting and Finance</td>
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## FOREIGN AND COMPARATIVE POLITICAL SYSTEMS

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## INTERNATIONAL RELATIONS

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## POLITICAL THEOREY AND METHODOLOGY

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<tr>
<td>360</td>
<td>Introduction to the History of Political Theory I: Political Theory to Thomas Hobbes</td>
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<td>361</td>
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<td>363</td>
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<td>395</td>
<td>Quantitative Methods for Political Scientists</td>
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<td>562</td>
<td>Modern Democratic Theory</td>
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<td>563</td>
<td>Theories of Revolution</td>
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## SPECIAL STUDIES

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<tr>
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<tr>
<td>270</td>
<td>Political Topics</td>
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<td>370</td>
<td>Issues on Contemporary Politics</td>
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<td>390</td>
<td>Field Work in Political Science</td>
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<td>391</td>
<td>Internship Seminar</td>
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<td>449</td>
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<td>490</td>
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<td>Political Science Honors Research</td>
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<td>494</td>
<td>Seminar in Political Science</td>
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<tr>
<td>598</td>
<td>Studies in Political Science</td>
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</tbody>
</table>

## Political Science Courses (PSCI)

A list of approved General Education courses can be found in "Graduation Requirements and Academic Advising" 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. Organization 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 federal 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 citizen politics 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.
Examines 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.  
Considers the organization, political behavior and decision-making process of the major countries of West Europe, including Britain, France, and Germany. Political ideologies 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 dealing with political development 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 area, and the transition to vibrant market economies. The course relates the theory and principles of political science to the practical political situations.

**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 individual philosophers of this period and the early development of the major political systems of the modern period: conservatism, liberalism and socialism.

**PSCI 362 Theoretical and Ideological Bases of Contemporary Politics**  
3 hrs.  
An in-depth study of the major political concepts and ideas, using political ideas and ideologies for the purpose of encouraging students to analyze political issues and problems in a meaningful way.

**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 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 taken 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 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, elections, 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. Prerequisite: Junior status.

**PSCI 421 Gender and Law**  
3 hrs.  
An analysis and description of the law and women (as well as other groups). Specific topics include coverture, the Equal Protection clause, the Civil Rights Act, affirmative action, sexual harassment and discrimination, Title IX and abortion. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisite: 12 hours in Political Science.

**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 feature 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 on the observation of political, economic, and social manifestations of the international political economy. Local, regional, and national policies and political events 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 permission 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisite: Admission by permission of the Department Honors committee.

PSCI 492 Political Science Honors Research
2–3 hrs.
Honors 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 required.

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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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 and 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
3–4 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 548 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, Michele, 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 596 Studies in Political Science
1–4 hrs.
An opportunity for advanced students with good scholastic records to pursue independently the study of some object of interest to them. Subjects are chosen and arrangements made to suit the needs of individual students. Approved application required.
PSYCHOLOGY

R. Wayne Fuqua, Chair
Galen J. Alessi
John Austin
Lisa E. Baker
Dale M. Brethower
James E. Carr
Edward J. Daly
Alyce M. Dickinson
Kristal Ehrhard
Howard Farris
Scott H. Kolins
Richard W. Malott
Lester W. Wright, Jr.
Linda A. LeBlanc
Alan Poling
C. Richard Spates
Kristal Ehrhardt

122 COLLEGE OF ARTS AND SCIENCES

Any freshon or transfer student planning to pursue a psychology 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.

The departmental honors program includes:

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).

Honors Program in Psychology

The honors program is designed to promote an academic community 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 Major

A minimum of nine (9) hours must be taken from the WMU Psychology Department, and the student must 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

INTRODUCTORY CORE (9 hrs.)

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<tr>
<td>PSY 100</td>
<td>General Psychology</td>
<td>3</td>
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<tr>
<td>PSY 160</td>
<td>Child Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 250</td>
<td>Abnormal Psychology</td>
<td>3</td>
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METHOD AND THEORY CORE (13 hrs.)

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<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>PSY 300</td>
<td>Statistics for the Behavioral Sciences</td>
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PRACTICUM OR LABORATORY EXPERIENCE (3 hrs.)

Take one of the 3 hour practicum or laboratory courses.

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<thead>
<tr>
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<tbody>
<tr>
<td>PSY 347</td>
<td>Practicum: Learning and Self-Management</td>
<td>3</td>
</tr>
<tr>
<td>PSY 357</td>
<td>Practicum: Special Populations</td>
<td>3</td>
</tr>
<tr>
<td>PSY 367</td>
<td>Practicum: Child Care</td>
<td>3</td>
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<tr>
<td>PSY 368</td>
<td>Laboratory in Experimental Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 377</td>
<td>Practicum: Child Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 378</td>
<td>Laboratory in Physiological Psychology</td>
<td>3</td>
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<tr>
<td>PSY 387</td>
<td>Practicum: Direct Instruction</td>
<td>3</td>
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<tr>
<td>PSY 397</td>
<td>Special Arranged Practicum in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 578</td>
<td>Research Practicum: Developmentally Disabled Population</td>
<td>3</td>
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ELECTIVES (9 hrs.)

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<th>Course</th>
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<tbody>
<tr>
<td>PSY 362</td>
<td>Experimental Analysis of Behavior</td>
<td>3</td>
</tr>
<tr>
<td>PSY 372</td>
<td>Physiological Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 374</td>
<td>Toward Experimental Living</td>
<td>3</td>
</tr>
<tr>
<td>PSY 444</td>
<td>Industrial/Organizational Behavior Analysis</td>
<td>3</td>
</tr>
<tr>
<td>PSY 463</td>
<td>Management of Health-Related Behaviors</td>
<td>3</td>
</tr>
<tr>
<td>PSY 474</td>
<td>Experimental Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 513</td>
<td>Animal Behavior</td>
<td>3</td>
</tr>
<tr>
<td>PSY 517</td>
<td>Psychology of Learning for Teachers</td>
<td>3</td>
</tr>
<tr>
<td>PSY 518</td>
<td>Research in Stimulus Control and Perceptual Processes</td>
<td>3</td>
</tr>
<tr>
<td>PSY 524</td>
<td>Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>PSY 526</td>
<td>Human Drug Use and Abuse</td>
<td>3</td>
</tr>
<tr>
<td>PSY 560</td>
<td>Behavioral Medicine</td>
<td>3</td>
</tr>
<tr>
<td>PSY 570</td>
<td>A Behavior Analysis Approach to the Area of Developmental Disability</td>
<td>3</td>
</tr>
<tr>
<td>PSY 595</td>
<td>History of Psychology</td>
<td>3</td>
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</table>

Acceptable minors: anthropology, biology, chemistry, communication, economics, English, linguistics, mathematics, philosophy, physics, political science, sociology, social work, and others approved by the department advisor.

BACCALLAUREATE WRITING REQUIREMENT

Students who have chosen the Psychology major will satisfy the Baccalaureate Writing Requirement by successfully completing PSY 330 Methodology of Behavior Analysis or PSY 460 Survey of Behavior Analysis Research.

Psychology Minor

Minimum 15 hours

Of the minimum total of fifteen (15) hours for the minor, a minimum of six (6) hours must be taken from the WMU Psychology Department, and the student must receive a grade of "C" or better in the Psychology minor courses—PSY 100, 160, and 250—and obtain a grade of "C" or better in any course that counts toward the minor.

REQUIRED COURSES

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>PSY 100</td>
<td>General Psychology</td>
<td>3</td>
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<tr>
<td>PSY 160</td>
<td>Child Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 250</td>
<td>Abnormal Psychology</td>
<td>3</td>
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APPROVED ELECTIVES

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>PSY 344</td>
<td>Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 374</td>
<td>Toward Experimental Living</td>
<td>3</td>
</tr>
<tr>
<td>PSY 424</td>
<td>The Psychology of Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>PSY 426</td>
<td>Introduction to Human Drug Use and Abuse</td>
<td>3</td>
</tr>
<tr>
<td>PSY 463</td>
<td>Management of Health-Related Behaviors</td>
<td>3</td>
</tr>
<tr>
<td>PSY 464</td>
<td>Systems and Theories in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 474</td>
<td>Experimental Social Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

NOTE: Three (3) hours of practicum (PSY 347, 357, 367, 387, or 397) can substitute for 3 hours of elective.

Psychology Courses (PSY)

A list of approved General Education courses can be found in “Graduation Requirements and Academic Advising” 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 a Learning to Learn curriculum 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
3-4 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. Major topics include: 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 behavioral psychology. Environmental change strategies are emphasized. While the course focuses on behavioral applications in the work environment, 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 for EAPs and ways of integrating EAPs into existing organization structures. Topics include leadership, communication, decision making, organization structure and design, and employee motivation and stress. Open 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 habits, conditioning, operant conditioning, and the control of operant behavior by motivational and emotional variables. An introductory laboratory accompanies 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 emphasis upon research design and interpretation of data, experimental methodology and the techniques of response measurement. Prerequisite: PSY 300. Concurrent enrollment in PSY 368 is required.

PSY 366 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 377 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 387 Practicum in Behavior Analysis in Education
3 hrs.
Supervised experience in the application of the principles 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. Course 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 and includes a 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. This 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.
This course emphasizes employee performance management and analyses of work behavior that are based on the principles of behavioral psychology. Environmental-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.
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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PSY 460</td>
<td>Survey of Behavior Analysis Research</td>
<td>3 hrs.</td>
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<tr>
<td>PSY 462</td>
<td>Individual, Group, and Family Treatment</td>
<td>3 hrs.</td>
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<td>PSY 463</td>
<td>Management of Health-Related Behaviors</td>
<td>3 hrs.</td>
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<td>PSY 464</td>
<td>Systems and Theories in Psychology</td>
<td>3 hrs.</td>
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<td>PSY 474</td>
<td>Experimental Social Psychology</td>
<td>3 hrs.</td>
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<tr>
<td>PSY 498</td>
<td>Honors Projects in Psychology</td>
<td>1–5 hrs.</td>
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<td>PSY 510</td>
<td>Advanced General Psychology</td>
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<td>PSY 513</td>
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<td>PSY 517</td>
<td>Psychology of Learning for Teachers</td>
<td>3 hrs. Fall, Winter</td>
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<td>PSY 518</td>
<td>Stimulus Control and Perceptual Processes</td>
<td>3 hrs.</td>
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<td>PSY 519</td>
<td>Corrective and Remedial Teaching</td>
<td>3 hrs.</td>
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<td>PSY 524</td>
<td>Human Sexuality</td>
<td>3 hrs. Fall</td>
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<td>PSY 526</td>
<td>Human Drug Use and Abuse</td>
<td>3 hrs.</td>
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<td>PSY 529</td>
<td>Experimental Social Psychology</td>
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<td>PSY 535</td>
<td>Instrumentation and Computer Use in Psychology</td>
<td>3 hrs.</td>
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<td>PSY 555</td>
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<td>PSY 560</td>
<td>Behavioral Medicine</td>
<td>3 hrs.</td>
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<td>PSY 570</td>
<td>A Behavior Analysis Approach to the Area of Developmental Disability</td>
<td>3 hrs.</td>
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<tr>
<td>PSY 578</td>
<td>Research Practicum: Developmentally Disabled Population</td>
<td>3 hrs.</td>
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**PSY 510 Advanced General Psychology**
- **Description:** Introduces the major concepts in psychology, including biological, cognitive, and psychological perspectives. Topics include the nature of psychological research, human behavior, and psychological disorders. 
- **Prerequisites:** PSY 100 or concurrent enrolment.

**PSY 513 Research in Animal Behavior**
- **Description:** This course is designed for research projects that employ animal subjects. It introduces students to research and data analysis methods that are appropriate for the study of animal behavior. 
- **Prerequisites:** PSY 330 and 360.

**PSY 517 Psychology of Learning for Teachers**
- **Description:** Designed to teach the principles of behavior and the application of these principles to teaching. Topic areas include the use of behavior principles in the development of objectives, selection and preparation of instructional material, classroom management, and incentive motivation. 
- **Prerequisites:** PSY 330 and 360.

**PSY 518 Stimulus Control and Perceptual Processes**
- **Description:** An examination of the literature surveying sensory and perceptual processes with an emphasis upon the research methodology in, and theoretical implications of data from studies of stimulus control and discrimination in non-human organisms. 
- **Prerequisites:** PSY 100 or concurrent enrolment.

**PSY 519 Corrective and Remedial Teaching**
- **Description:** An introduction to and survey of various content skills, curriculum approaches and special teaching techniques used in elementary school reading and mathematics instruction. 
- **Prerequisites:** PSY 100 or concurrent enrolment.

**PSY 524 Human Sexuality**
- **Description:** Discussion of human behaviors concerned with sex, sexuality and reproduction. Consideration is given to the anatomical and psychological properties of sexual functioning in male and female. 
- **Prerequisites:** PSY 100, PSY 160, PSY 250.

**PSY 526 Human Drug Use and Abuse**
- **Description:** This 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. 
- **Prerequisites:** PSY 100, PSY 160, PSY 250.

**PSY 529 Experimental Social Psychology**
- **Description:** Methodology of research with groups of animals and humans with emphasis upon design, application and ethical implications. 
- **Prerequisites:** PSY 100, PSY 160, PSY 250.

**PSY 535 Instrumentation and Computer Use in Psychology**
- **Description:** A survey of problems of response measurement in experimentation. Lecture and laboratory. 
- **Prerequisites:** PSY 100, PSY 160, PSY 250.

**PSY 555 Psychology of Learning for Teachers**
- **Description:** Designed to teach the principles of behavior and the application of these principles to teaching. Topic areas include the use of behavior principles in the development of objectives, selection and preparation of instructional material, classroom management, and incentive motivation. 
- **Prerequisites:** PSY 330 and 360.

**PSY 560 Behavioral Medicine**
- **Description:** 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. 
- **Prerequisites:** PSY 100, PSY 160, PSY 250.

**PSY 570 A Behavior Analysis Approach to the Area of Developmental Disability**
- **Description:** Topics will include: Historical background, assessment, training and legal implications of treatment. 
- **Prerequisites:** PSY 330 and 360.

**PSY 578 Research Practicum: Developmentally Disabled Population**
- **Description:** 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. 
- **Prerequisites:** PSY 570 or concurrent enrolment.

**PSY 595 History of Psychology**
- **Description:** The historical and philosophical foundations of contemporary American psychology. 
- **Prerequisites:** PSY 570 or concurrent enrolment.

**PSY 599 Practicum in Psychology**
- **Description:** In-depth training in the application of the principles of behavior to a specific and restricted problem area in the discipline. The practicum 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. 
- **Prerequisites:** PSY 330 and 360.

**PSY 600 Research Practicum: Developmentally Disabled Population**
- **Description:** 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. 
- **Prerequisites:** PSY 570 or concurrent enrolment.
RUSSIAN
See “Foreign Languages and Literatures” in the College of Arts and Sciences.

RUSSIAN AND EAST EUROPEAN STUDIES PROGRAM
See “Interdisciplinary Programs” in the College of Arts and Sciences.

SCIENCE AND MATHEMATICS TEACHING MINOR
See “Interdisciplinary Programs” in the College of Arts and Sciences.
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 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 verifiable 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 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.

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 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.

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 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 student 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 170.

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 180.

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 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 with this course. Cross-listed with CHEM 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.

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.

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.

SCI 598 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.

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 not more than four hours in all reading courses and work must be completed under a member of the graduate faculty. Prerequisite: 12 hours of a science and 12 hours of professional education courses.

SOCIAL STUDIES GROUP MINOR
See “Interdisciplinary Programs” in the College of Arts and Sciences.
SOCIOLGY

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 welfare, 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.

Department Advisor
2407 Sangren Hall, 387-5286. Students must consult the department advisor for major/minor slips in Sociology, Criminal Justice, 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. Further information and application forms may be obtained at the Sociology Office, 2420 Sangren Hall.

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 honor 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 12 hours 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.

Sociology Major
A major in sociology consists of a minimum of 30 hours of course work in sociology. SOC 200, 283, 300, 320, 456, and 480 are required. Students may choose their twelve hours of electives from the many offerings in the Department. At least two of the elective courses must be at the 300-400 level; only one at the 100-level; 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 must be approved before it may be evaluated by the department if it is to apply toward a sociology major or minor.

BACCALAUREATE WRITING REQUIREMENT
Students who have chosen the Sociology major will satisfy the Baccalaureate Writing Requirement by successfully completing SOC 456 Social Stratification.

Sociology Major—Social Psychology Concentration
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 have a sociology major/minor.

REQUIREMENTS
SOC 200, 300, 320, 283, 285, 456 and 480 are required. Three (9 hours) of the following electives must be at the 300-level or above; SOC 412, 421, 422, 479, and 520. Students must take at least three (3) hours of other electives within the sociology department.

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 master's 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 the requirements of the Sociology major with this difference: SOC 407 may not 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 30-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 in Sociology. SOC 200 and 320 are required. The balance of the hours required 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 300-level or above; (3) no more than one 100-level course may be included. Minor slips are required.

Sociology Minor—Social Psychology Concentration

Sociology 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 have a sociology major/minor.

REQUIREMENTS
SOC 200, 210, and 320. Two electives (6 hours) from among the following are required: SOC 412, 421, 422, 479, and 520. The student may include any other sociology courses to complete the required eighteen (18) hours.

Criminal Justice Major
This program is designed to provide perspective on the entire criminal justice system: crime as a social problem and 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. With this goal in mind, the program is designed 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.

Students should consider internships. Not all students are guaranteed internships and some placements require the applicant to undergo security checks. Applications are required.

33 hours

REQUISITE PROGRAMS
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
SOC 210 Modern Social Problems
SOC 260 Introduction to Criminal Justice

Writing Expectation
Students should have completed ENGL 105 or equivalent and write at the college level before enrolling in the following advanced courses.
BACCALAUREATE WRITING

REQUIREMENTS

Students who have chosen the Criminal Justice major will satisfy the Baccalaureate Writing Requirement by successfully completing SOC 466 Advanced Criminology.

REQUIRED 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
- SOC 363 Criminal Justice Process
- SOC 364 Sociology of Law Enforcement
- SOC 365 Correctional Process
- FCL 384 Criminal Law and Procedure (4 hrs.)
- SOC 454 Juvenile Delinquency
- SOC 466 Advanced Criminology

REQUIRED RESEARCH METHODS

- SOC 382 Methods of Sociological Inquiry I

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 Ethnic Relations
- SOC 320 Introduction to Social Psychology
- SOC 412 Child Abuse
- SOC 456 Social Stratification
- SOC 465 Special Topics in Sociology and Criminal Justice (when applicable)
- SOC 560 Corporate and Governmental Crime
- SOC 561 Violence and the U.S. Society
- SOC 562 Victimology
- SOC 563 Gender and Justice
- SOC 566 Race, Ethnicity, and Justice
- BAS 300 Black Experience

Corrective Services

- SOC 465 Non-Institutional Corrections

Courts

- PHIL 313 Philosophy of Law
- PSCI 320 American Judicial Process (4 hrs.)
- PSCI 325 Criminal Justice Policy
- PSCI 422 Civil Rights and Civil Liberties
- SOC 578 Sociology of Law

Juvenile Justice

- SOC 422 Adolescent Socialization
- SOC 458 Juvenile Justice Casework
- SOC 459 Juvenile Justice

Internship and Directed Study

- SOC 490 Criminal Justice Internship (3 hrs. - 2-6 hrs.)
- SOC 596 Directed Individual Study (1-6 hrs.)

Law Enforcement Administration

- SOC 467 Police and Community Dynamics
- SOC 468 Police and Crime Prevention

SPECIAL LAW ENFORCEMENT CERTIFICATION OPTIONS

Students have the option to enroll in the Law Enforcement Certification Program in cooperation with Kalamazoo 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 (MLEOTC ruling). See the advisor for further information.

Required courses in the Tracking Program include:

- SOC 261 Law Enforcement Certification
- Fundamentals of Marksmanship (2)
- Medical First Responder for Law Enforcement (3)
- Patrol Procedures (4)
- Police Physical Skills (4)
- Police Practical Problems (3)
- Traffic (4)

NOTE: All WMU classes are 3 credit hours unless otherwise noted.

Criminal Justice Minor

An 18-hour criminal justice minor is available, patterned after the major. Minor slips are required.

REQUIRED CORE (9 hours)

- SOC 200 Principles of Sociology
- SOC 210 Modern Social Problems
- SOC 260 Introduction to Criminal Justice
- SOC 382 Criminology

THREE OF THE FOLLOWING ARE REQUIRED

- SOC 363 Criminal Justice Process
- SOC 364 Sociology of Law Enforcement
- SOC 365 Correctional Process
- SOC 454 Juvenile Delinquency

Sociology Courses (SOC)

A list of approved General Education courses can be found in "Graduation Requirements and Academic Advising" earlier in this catalog.

SOC 100 American Society

3 hrs.

An analysis of contemporary American society, including continuity and change in value systems, major institutions and their interrelationships, and other aspects of social life.

SOC 122 Death, Dying, and Bereavement

3 hrs.

Social structures, attitudes, beliefs and values about death, dying 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 ethical-professional issues such as privacy, and provides training with software applications in social sciences such as SPSS, QSS, MINITAB, plus introducing students to microcomputers. This course meets the University's computer literacy requirement. Not for sociology or criminal justice major or minor credit. Credit cannot be earned for both SOC 182 and either BIS 102, FCS 225 or CS 106.

SOC 190 Men and Women in Contemporary Society

3 hrs.

A systematic analysis of roles of men and women, with particular emphasis upon problems of adjustment and conflict in contemporary society.

SOC 200 Principles of Sociology

3 hrs.

An introduction to, and survey of, the discipline of Sociology and its major fields of study. A scientific study and analysis of human behavior and interaction, the social nature and the social world (groups, cultures, religions, institutions, communities and societies) in which we live. Selected concepts, theories and research findings pertaining to social life at both the national and international level are presented and explored.

SOC 210 Modern Social Problems

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 process 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

Variable

The following topics allow Criminal Justice majors to become certifiable as police officers: safety and first aid; police physical skills; criminal investigation; firearms; traffic; patrol procedures; precision driving; and police practical problems. Prerequisite: Permission of Criminal Justice Program advisor.

SOC 282 Methods of Data Collection

3 hrs.

This course is an introduction to the quantitative and qualitative methods of data collection in the social sciences. Major topics include ethical issues in social research, library usage and report style, problem formulation, measurement, causation, sampling, surveying, field research and other observational techniques.

SOC 283 Methods of Data Analysis

3 hrs.

This course is an examination of data analytic methods in the social sciences. Major topics include frequency distribution changes, presentation of data, measures of central tendency, measures of variability, cross-tabulation, statistical inference (significance tests), and bivariate regression and correlation.

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 a 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 development 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 upon the 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, to 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 role, 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.

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 disease. 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 390 Marriage and Family Relations
3 hrs.
A sociological analysis of the structural and interactional 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, psychiatric, legal, and treatment 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 allegiances, social class membership, biological maturation, sex 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, stratification, differential power. Conflict and functional theories of stratification are treated. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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 delinquency. 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 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: 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 course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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.
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 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.

Examine 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.)

This is the capstone course for Sociology majors. It locates the various theories and methods used in sociology to examine the sex role in our society. The students are expected to critically examine the social world in which we live. The students are expected to critically examine the theoretical understandings and the relevant research evidence dealing with several illustrations of social institutions and social processes. Prerequisites: SOC 282, 283, 300, and 320.

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 1600 to the present) to gain insight into what is today, with the purpose of projecting what may be in the future. This 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.

This course will be concerned with examining the contemporary meaning of concepts of mental health and mental illness. The course will also consider the amount and kind of mental illnesses (especially the differences by social class, age, gender, race, marital status, urban versus rural living, and migration), the structure of the mental health care delivery system, the nature of help-seeking for mental illness, and community care and public policy for mental illness. Prerequisite: SOC 200.

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 200 or equivalent.

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 300.

Opportunity is provided through the Criminal Justice Program for supervised experiences in state and local criminal justice agencies. Approved application is required.

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.

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 for these may be granted on a case by case basis.

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.

This course will be concerned with examining the contemporary meaning of concepts of mental health and mental illness. The course will also consider the amount and kind of mental illnesses (especially the differences by social class, age, gender, race, marital status, urban versus rural living, and migration), the structure of the mental health care delivery system, the nature of help-seeking for mental illness, and community care and public policy for mental illness. Prerequisite: SOC 200.

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.

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.

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.

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 priority of controlling organizational offenders. The course also examines the political process whereby corporations and governments come to be defined as deviant or criminal. Prerequisite: SOC 200 or 210, SOC 260, and SOC 362, and one other upper-level (300- or 400-level) course.

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.

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.

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/criminalistic academy, and within the criminal justice system. Broad feminist theoretical and methodological perspectives are drawn upon to consider 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 260, and SOC 362, and one other upper-level (300-400) course.

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 be the inquiry. Prerequisites: SOC 200 or 210, SOC 260, and SOC 362, and one upper-level (300-400) course. SOC 314 is encouraged.
SOC 573 Sociology of Political Behavior
3 hrs.
Systematic sociological theory and research applied to the study of political organization 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 590 Variable Topics in Sociology
3 hrs.
An examination of a selected topic in the field of sociology. The focus of the course may be theoretical, methodological, or substantive. Possible topics could include feminist theory, sampling and survey design, poverty, and cultural studies. May be repeated for credit with a different topic.

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.

SPANISH
See "Foreign Languages and Literatures" in the College of Arts and Sciences.

WOMEN'S STUDIES PROGRAM
See "Interdisciplinary Programs" in the College of Arts and Sciences.

WORLD LITERATURE MINOR
See "Interdisciplinary Programs" in the College of Arts and Sciences.
The College of Aviation offers the following curricula:
- Aviation Flight Science — Bachelor of Science
- Aviation Science and Administration — Bachelor of Science
- Aviation Maintenance Technology (Maintenance Management Option) — Bachelor of Science
- Aviation Maintenance Technology (Advanced Technology Option) — Bachelor of Science

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 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. Advisors are 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. Academic advising is available 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 a 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 Aviation 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. 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 Flight Science

**Bachelor of Science**
126 hours

**GENERAL 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 AVS prefix.
2. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.

**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.

**PROGRAM REQUIREMENTS**
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 College of Aviation.

Students will be permitted to enroll in this curriculum and the flight courses on the basis of results of the College's Pilot Profile Analysis Program. Participation in this program is required of all students wanting to enroll into the Aviation Flight Science curriculum.

**First Semester** — 16 hours
- AVS 120 Introduction to Aviation .......... 2
- COM 170 Interpersonal Communications .......... 3
- PHYS 107 Elementary Physics .......... 4
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<th>Semester</th>
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| **First Semester** | AVS 120 Introduction to Aviation 2  
|                | MATH 200 Calculus with Applications 4  
|                | PHYS 107 Elementary Physics 4  
|                | PHYS 108 Elementary Physics Laboratory 1  
|                | ECO 101 Microeconomics 3  
|                | ECO 102 Macroeconomics 3  
|                | BI/S 102 Introduction to Information Processing 3  
|                | MATH 218 Business Statistics 3  
|                | MGMT 250 Organizational Behavior 3  
|                | AREA I General Education Elective* 3  
| **Second Semester** | AVS 120 Introduction to Aviation 2  
|                | MATH 200 Calculus with Applications 4  
|                | PHYS 107 Elementary Physics 4  
|                | PHYS 108 Elementary Physics Laboratory 1  
|                | IME 102 Technical Communication 3  
|                | AREA I General Education Elective 3  
| **Third Semester** | AVS 122 Aviation Systems 3  
|                | GEOG 225 Introduction to Meteorology and Climatology 4  
|                | MATH 218 Business Statistics 3  
|                | MGMT 250 Organizational Behavior 3  
|                | AREA I General Education Elective* 3  
| **Fourth Semester** | AVS 205 Aviation Safety 2  
|                | AVS 212 Aviation Meteorology 2  
|                | BI/S 260 Microcomputer Business Applications 3  
|                | ECO 201 Microeconomics 3  
|                | GEOG 100 World Ecological Problems and Man 4  
|                | AREA III General Education Elective* 3  
| **Fifth Semester** | BI/S 340 Principles of Business Communications 3  
|                | MGMT 300 Fundamentals of Management 3  
|                | MGMT 410 Multinational Management 3  
|                | AREA III General Education Elective* 3  
|                | AREA IV General Education Elective* 3  
| **Sixth Semester** | AVS 206 Flight Physiology 2  
|                | AVS 207 Crew Resource Management 2  
|                | AVS 307 Advanced Aviation Systems 3  
|                | AVS 319 Aviation Legislation 4  
|                | AVS 321 Professional Flight I 5  
| **Seventh Semester** | AVS 306 Advanced Aerodynamics and Performance 3  
|                | AVS 322 Global Navigation and International Flight 3  
|                | AVS 323 Professional Flight II 5  
|                | AVS 427 Airline Administration 3  
|                | AVS 411 Airline Flight Operations 2  
| **Eighth Semester** | AVS 325 Professional Flight III 5  
|                | AVS 412 Line Oriented Flight Crew Simulation 2  
|                | BI/S 350 Management Information Systems 3  

**Aviation Science and Administration**

**Bachelor of Science**

126 hours

The Aviation Science and Administration curriculum provides preparation for a variety of positions in operations management or technical support areas of the aviation industry. The program leads to careers in areas such as technical sales or service, aviation administration, and general aviation management.

**GENERAL REQUIREMENTS**

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to University requirements stated elsewhere in the catalog:

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 toward graduation.
3. Complete the following program.

**BACCALAUREATE WRITING REQUIREMENT**

Students who have chosen the Aviation Science and Administration curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing BIS 340, Principles of Business Communication.

**PROGRAM REQUIREMENTS**

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<th>Semester</th>
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| **First Semester** | AVS 120 Introduction to Aviation 2  
|                | MATH 200 Calculus with Applications 4  
|                | PHYS 107 Elementary Physics 4  
|                | PHYS 108 Elementary Physics Laboratory 1  
|                | IME 102 Technical Communication 3  
|                | AREA I General Education Elective 3  
| **Second Semester** | AVS 122 Aviation Systems 3  
|                | GEOG 225 Introduction to Meteorology and Climatology 4  
|                | MATH 218 Business Statistics 3  
|                | MGMT 250 Organizational Behavior 3  
|                | AREA I General Education Elective* 3  
| **Third Semester** | AVS 122 Aviation Systems 3  
|                | GEOG 225 Meteorology (Area VI) 4  
|                | MATH 218 Business Statistics 3  
|                | PSY 100 General Psychology (Area VII) 3  
|                | AREA VIII General Education Elective 2  
| **Fourth Semester** | AVS 122 Aircraft Systems 4  
|                | MATH 218 Business Statistics (Proficiency 4b) 3  
|                | GEOG 225 Meteorology (Area VI) 4  
|                | BI/S 260 Microcomputer Business Applications 3  
|                | AREA II General Education Elective 3  
| **Fifth Semester** | AVS 205 Aviation Safety 2  
|                | AVS 212 Aviation Meteorology 2  
|                | ACTY 210 Principles of Accounting 3  
|                | ECON 201 Microeconomics 3  
|                | AREA III General Education Elective 3  
|                | AREA IV General Education Elective 3  
| **Sixth Semester** | AVS 280 Transportation Technology (Area VII) 3  
|                | FCL 320 Business Finance 3  
|                | FCL 380 Legal Environment 3  
|                | ECON 304 The Organization of Industries 3  
|                | MKTG 250 Marketing Principles 3  

**Aviation Maintenance Technology**

Bachelor of Science

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, 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.

**GENERAL 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 toward graduation.
3. Complete one of the following program options of 128 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 Aviation Maintenance Technology curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing BIS 340 Business Communications.

**PROGRAM REQUIREMENTS, ADVANCED TECHNOLOGY OPTION**

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<th>Semester</th>
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| **First Semester** | AVS 120 Introduction to Aviation 2  
|                | ECE 105 Introduction to Computers 2  
|                | PHYS 107 Elementary Physics 4  
|                | PHYS 108 Elementary Physics Laboratory 1  
|                | IME 102 Technical Communication 3  
|                | PSY 100 General Psychology 3  

**Seventh Semester**

| AVS 207 Crew Resource Management 2  |
| AVS 307 Advanced Aircraft Systems 3  |
| AVS 319 Aviation Legislation 3  |
| AVS 427 Airline Administration 3  |
| AVS 410 Airport Administration and Finance 3  |

**Eighth Semester**

| AVS 428 International Aviation 3  |
| Free Elective 4  |
| Approved Electives 9  |
Second Semester — 17–19 hours
AVS 121 Aerodynamics and Performance 2
AVS 280 Transportation Technology 3
MATH 200 Calculus with Applications 4
AREA I General Education Elective 3–4
AREA II General Education Elective 3–4
AREA VIII General Education Elective 2

Third Semester — 14–16 hours
CHEM 110 General Chemistry I 3
CHEM 111 General Chemistry Laboratory I 1
MATH 260 Calculus with Applications 4
AREA III General Education Elective 3–4
AREA IV General Education Elective 3–4

Fourth Semester — 15 hours
AVS 207 Crew Resource Management 2
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

Fifth Semester — 16 hours
AVS 362 Aircraft Structures II 5
AVS 363 Reciprocating Engine Overhaul 3
AVS 364 Aircraft Electrical II 4

Sixth Semester — 15 hours
AVS 365 Non-Destructive Testing 3
AVS 366 Avionics 3
AVS 369 Testing, Evaluation and Instrumentation 4

Seventh Semester — 18 hours
AVS 464 AC Turbine Engine and Systems 5
AVS 466 AC Inspection and Service I 4
AVS 468 AC Inspection and Service II 5
AVS 469 Reliability, Maintainability and Supportability 3
AVS 490 Senior Project I 1

Eighth Semester — 17 hours
BIS 340 Business Communications 3
AVS 463 Aircraft Structures 5
AVS 461 Aircraft Inspection and Service 4
AVS 462 Aircraft Inspection and Service II 5
AVS 463 Aircraft Inspection and Service II 5
AVS 464 Aircraft Inspection and Service III 5
AVS 465 Aircraft Inspection and Service IV 5
AVS 466 Aircraft Inspection and Service V 5
AVS 467 Aircraft Inspection and Service VI 5
AVS 468 Aircraft Inspection and Service VII 5
AVS 469 Aircraft Inspection and Service VIII 5

PROGRAM REQUIREMENTS, MAINTENANCE MANAGEMENT OPTION

First Semester — 16 hours
AVS 120 Introduction to Aviation 2
BIS 102 Intro to Information Processing 3
PHYS 107 Elementary Physics 4
PHYS 108 Elementary Physics Laboratory 1
PSY 100 General Psychology 3
IME 102 Technical Communication 3

Second Semester — 17 hours
AVS 121 Aerodynamics and Performance 2
AVS 280 Transportation Technology 3
MATH 200 Calculus with Applications 4
AREA I General Education Elective 3
AREA II General Education Elective 3
AREA VIII General Education Elective 2

Third Semester — 17 hours
CHEM 110 General Chemistry I 3
CHEM 111 General Chemistry Laboratory I 1
MATH 260 Elementary Statistics 4
BIS 260 Microcomputer Business Applications 4
MGMT 250 Organizational Behavior 3
AREA III General Education Elective 3

Fourth Semester — 15 hours
AVS 207 Crew Resource Management 2
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

Fifth Semester — 16 hours
AVS 362 Aircraft Structures II 5
AVS 363 Reciprocating Engine Overhaul 3
AVS 364 Aircraft Electrical II 4

Sixth Semester — 15 hours
AVS 365 Non-Destructive Testing 3
AVS 366 Avionics 3
AVS 369 Testing, Evaluation and Instrumentation 4

Seventh Semester — 18 hours
AVS 464 AC Turbine Engine and Systems 5
AVS 466 AC Inspection and Service I 4
AVS 468 AC Inspection and Service II 5
AVS 469 Reliability, Maintainability and Supportability 3
AVS 490 Senior Project I 1

Eighth Semester — 14 hours
BIS 340 Business Communications 3
BIS 350 Management Information Systems 3
MGMT 300 Fundamentals of Management 3
AVS 491 Senior Project II 2

* At least six hours of course work within the General Education Distribution Program must be at the 300–400 level.

Aviation Science Courses (AVS)

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 107 and 108, or taken 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, fitness, 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 information formats, weather radar, TCAS, and the role and responsibilities of ATC in weather observation and reporting. Prerequisite: GEOG 225.

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, failure and corrosion control, and aircraft drawings are also covered. Prerequisites: AVS 120, PHYS 107 and 108, CHEM 110 AND 111.

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 107 and 108, CHEM 110 AND 111.

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 107 and 108, CS 105 or BIS 102, MATH 200.

AVS 265 Aircraft Propellers 2 hrs.
Theory of propellers, constant speed propellers and turboprop propellers, propeller control systems and auxiliary systems, airworthiness inspection, maintenance and repair practices. Prerequisites: PHYS 107 and 108. Corequisites: AVS 262, AVS 263.

AVS 277 Flight Simulator Laboratory 1 hr.
Ten hours of individual ground instruction and a 10 hour block of instruction in one of the
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 298 Private Pilot Helicopter
3 hrs.
Private pilot ground, flight and individual instruction leading to private pilot helicopter certification. Progression based on performance based standards with a minimum of 35 hours flight and 35 hours ground instruction.

AVS 306 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 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 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 application. Includes introduction to high performance aircraft and instrument flight. Prerequisites: Second class medical certificate, AVS 120, AVS 121, AVS 122, and AVS 205; 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 director, 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. Prerequisite: 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 networks in visual as well as instrument environments. Prerequisites: AVS 321, AVS 322, or taking concurrently.

AVS 325 Professional Flight III
5 hrs.
Completion of instruction and experience requirements for commercial, instrument, and multi-engine pilot certification. Includes flight, ground, and simulator instruction. Principles of flight in multi-engine airplanes. Provides transition from complex single-engine airplane to procedures and techniques peculiar to multi-engine operations. Prerequisites: AVS 307 and AVS 323.

AVS 330 Aerobatic Flight
1 hr.
Ground and flight instruction in aerobatic flight maneuvers. This course will improve aircraft handling capabilities, critical attitude recovery, understanding of aeronautics, 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 inspection, repair, overhaul, and operation of reciprocating power plants, in accordance with the 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, fibreglass, composite, plastic, honeycomb, and laminated primary and secondary structures. Prerequisite: AVS 262.

AVS 363 Reciprocating Engine Systems
4 hrs.
Principles of operation of reciprocating engine, fuel metering, induction, exhaust, and ignition systems. Prerequisite: AVS 263.

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 365 Non-Destructive Testing
3 hrs.
Theory and application of non-destructive testing methods; liquid penetrant, magnetic particle, radiographic, eddy current, ultrasound, and acoustic 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 avoidance 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 364.

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 to a maximum of eight semester credit hours. Graded on a Credit/No Credit basis 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 environments. Prerequisites: AVS 303, 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 instruction. Includes classroom preparation in fundamentals of learning and teaching theory. Features instruction in proper supervision of instructional scenarios 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, instrument enroute 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.
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. Fee: $200.00. Prerequisites: AVS 323 and 411.

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 420 Airport Design and Operations
3 hrs.
Airport operations planning and design. A study of airport operations from the perspective of airport management and planning. Topics in environmental and economic assessment of projects, safety, and sustainable design issues. Prerequisites: AVS 205; AVS 410 or concurrently; MGMT 300.

AVS 424 Corporate Aviation Management
3 hrs.
Management of aviation flight departments of business corporations. Topics include human resource management, aircraft selection and planning, management and organization of flight and maintenance operations, and requirements of international operations. Current and future issues such as globalization of business operations. Prerequisite: MGMT 300.

AVS 427 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. Prerequisites: AVS 120, IME 102.

AVS 428 International Aviation
3 hrs.
A focus on the common issues surrounding the globalization of aviation. Topics include human resource management, employee recruitment and selection, labor/workforce relations, international requirements and opportunities. International standards and agreements and international flight operations. Prerequisite: AVS 319.

AVS 460 Aircraft Inspection and Service I
4 hrs.
Required aircraft inspections are performed in accordance with the manufacturer's and FAA regulatory requirements. Servicing, airworthiness documentation, record keeping, data searches, inventory, parts tracking and accountability are performed with emphasis on computerized models. 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 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 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, 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 airframe 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, flight 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 project definition, project planning, task scheduling, ethics, and decision impact analysis. Use of case studies will add to the students' understanding of real world situations. This course, when completed satisfactorily with AVS 491, is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisite: Senior standing or by department approval.

AVS 491 Senior Project II - Analysis
2 hrs.
Second course in the two-course 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 with faculty and industry mentors is also necessary. This course, when completed satisfactorily with AVS 490, is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisite: AVS 490.

AVS 492 Aviation Management Intern
1-6 hrs.
Under the direction of a faculty advisor, students obtain industrial experience with an aviation organization. Students are required to file periodic reports to the advisor. A final written and oral report must be presented to obtain credit. In addition, the student will be evaluated by the firm's executive or student supervisor. This course is only available to aviation majors. Prerequisites: Senior standing and departmental approval.

AVS 493 High-Performance Transition
2 hrs.
Ground and flight instruction that will lead to a high-altitude endorsement. Students will hold 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
The Haworth College of Business

Creed: Partners for Business Knowledge and Leadership

Mission Statement: The Haworth College of Business is committed to partnerships among students, employers, faculty, alumni and the business community that advance the achievement of high quality education. Such active partnerships challenge the foundation of our knowledge and skills and enhance our ability to change. Meeting these challenges requires an ongoing combination of teaching, research and service activities among partners.

College Goals:
1. To deliver the best undergraduate business program in Michigan and the surrounding states by the year 2006.
2. To provide excellent targeted graduate education and business seminars primarily for business professionals and international students by the year 2004.
3. To design, implement and support centers of excellence in designated, specialized educational programs by the year 2000.
4. To achieve further cultural diversity among domestic and international partners.
5. To develop business relationships which proactively support the mission of the Haworth College of Business.
6. To build development programs for faculty and staff that increase their knowledge of contemporary business practices and technology innovations to improve the College's teaching and research programs.

The Haworth College of Business offers three degree programs:
1. Business Administration—Bachelor of Business Administration Degree
2. Master of Business Administration for graduate students with Liberal Arts, Engineering, Business, or other undergraduate preparation.
3. Master of Science in Accountancy for students desiring preparation for a professional accounting career.

Graduates of the Haworth College of Business, with a Bachelor of Business Administration (BBA) degree will be able to:
- Understand essential business knowledge
- Make effective business decisions
- Communicate effectively
- Understand and apply global business knowledge and diverse perspectives
- Demonstrate effective teamwork and leadership
- Demonstrate an understanding of business operations and product and process technology
- Understand and use computer-based information and systems and infrastructures
- Practice acceptable standards of ethical and professional behavior
- Participate in professional development activities

Two distinctive features of the BBA degree program are:
A. Electronic Portfolio Project: The purpose of the required portfolio project for undergraduate business students is to foster individual and professional growth. The portfolio will help students develop greater responsibility for their own development through dynamic linkages among college courses, work and internship experiences, individual expectations, academic majors and professional goals. The portfolio is a cumulative project that chronicles important knowledge, skills and attitudes developed throughout the student's education.

B. Program Option Alternative Requirement: The program option for undergraduate BBA degree students provides them with practical learning experiences in business. The program option will help students develop more realistic knowledge about business work and professional experience through three alternatives: an internship, an international education program, or a field research project. The program option requirement may or may not be related to a student's major field of study and must comprise a minimum of two semester hours of credit (completed prior to senior class standing) in one of the alternatives. The three alternatives may be accomplished at domestic or international business sites and study or through a combination of classroom and business site visits.

Business Research and Service Institute
The Business Research and Service Institute within the Haworth College of Business provides research assistance for business, industry, governmental, charitable, and educational organizations. Research requests must be business-related and may be performed by faculty or by student teams supervised by Haworth College of Business faculty.

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 information and 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)

Pre-Business Curriculum

Any entering or transfer student planning to pursue business administration as a major will be admitted to the pre-business curriculum and will work with a business advisor in the development of a planned program.

The minimum pre-business curriculum requirements are:
1. Completion of 42 semester hours.
2. An acceptable grade point average (minimum of 2.50).
3. Minimum grade of "C" in the following pre-business courses or approved alternatives:
   A. BIS 111 End User Computing .......................... 1 hr.
   B. BIS 102 Introduction to Information Processing ...................................... 3 hrs.
   C. BIS 142 Information Writing ........................................ 3 hrs.
   D. BUS 175 Business Enterprise ........................................... 3 hrs.
   E. ACTY 210 Principles of Accounting ........................................ 3 hrs.

4. Successful completion of the following cognate core requirements or approved alternatives:
   A. MATH 116 Finite Mathematics ............................. 3 hrs.
   B. MATH 118, 122", or 200" *(Students in the Integrated Supply Management major must elect either MATH 122 or 200)*
   C. MATH 216 Business Statistics ............................................. 3 hrs.
   D. ECON 201 Principles of Microeconomics .............................. 3 hrs.
5. Completion of Career Services registration materials.
6. Completion of preliminary HCOB Student Portfolio materials.

The following courses are required prior to enrollment in major area courses and may be completed as prebusiness administration enrollment:

A. ACTY 211 Principles of Accounting .................................................. 3 hrs.
B. ACTY 202 Principles of Macroeconomics .......................................... 3 hrs.

Additional hours will be taken in the following areas to complete minimum prebusiness administration requirements:

A. General Education Distribution Program Areas 1, 2, 3, 6, 7, and 8
B. Non-Business Electives

After completion of not less than 28 semester hours of 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 a similar 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.

Haworth College of Business Office of Academic Advising and Admissions provides all advising services for business students throughout their academic careers. 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 who wish to enter the prebusiness curriculum must realize that they could have difficulty earning a BBA degree in a four-year span.

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 and the specific requirements noted above, students must complete the following:

1. Business Administration Core Requirements:
   A. MGMT 250 Organizational Behavior ......................................................... 3 hrs.
   B. MKTG 250 Marketing .................................................................................. 3 hrs.
   C. BUS 270 Information and Communication Infrastructure ................................ 3 hrs.
   E. BUS 370 Integrated Communication in Business ............................................. 3 hrs.
   F. BUS 375 Production and Service Productivity ................................................. 3 hrs.
   G. BUS 475 Strategic Business Solutions ............................................................. 3 hrs.
   H. An advanced economics course (as approved by student's major department) ....... 3 hrs.

2. Major, minimum beyond core requirements previously listed .......................... 21 hrs.
3. General Education to complete proficiency and distribution areas 1-8
4. Transfer work towards Business Administration Core Requirements must meet the following criteria:
   A. Approval by the Office of Academic Advising and the department
   B. Minimum grade of "C"
   C. 50% of all required business course work completed through Western Michigan University

Baccalaureate Writing Requirement

Students who have chosen to major in any area of business will satisfy the Baccalaureate Writing Requirement through successful completion of BUS 370 Integrated Communication in Business.

Advising

For questions regarding BBA curriculum requirements and transfer credit equivalencies, contact the Haworth College of Business Advising Office (616) 387-5075.

Special Notes
1. A minimum of 50 percent of all BBA course work must be completed in areas other than business. Nine hours of economics and six hours of statistics may be included in this percentage.
2. With departmental approval, transfer courses from four-year schools (and appropriate lower division courses from community colleges) may be included in majors and minors. However, 50% of all required HCOB courses must be completed through Western Michigan University to include at least 50% of any business major and 50% of any business minor completed through Western Michigan University.
3. To declare a minor in any business area, the student must meet with a College of Business advisor (2130 Schneider Hall).

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
ACTY 310, 311, Financial Accounting ....................................................... 6
ACTY 313, Accounting Information Systems ................................................. 3
ACTY 322, Managerial Accounting ............................................................... 3
ACTY 324, Income Tax Accounting ............................................................... 3
ACTY 516, Auditing ......................................................................................... 3

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
ACTY 513, Advanced Accounting Systems ....................................................... 3
ACTY 514, Institutional Accounting ..................................................................... 3
ACTY 518, Accounting Theory and Problems .................................................... 3
ACTY 522 Cost Accounting—Theory and Practice
ACTY 524 Studies in Tax Accounting

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 21 hours. Fifteen of these hours must be in accountancy: ACTY 210, ACTY 211 are required, plus nine (9) additional accounting hours for which the student meets the prerequisites to be selected with the student's professional objectives in mind. The remaining six (6) hours must be selected from the following courses: FCL 320, FCL 380, MGMT 250, and MKTG 250.

Qualifications for Accounting Certification Exams
A graduate from the Haworth College of Business with a major in Accountancy will meet the prerequisites to be selected with the student's professional objectives in mind. The student is responsible for determining if additional hours 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 Credit: 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 WNU.

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 in the catalog course descriptions.

**ADMINISTRATIVE SYSTEMS MAJOR (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 360 Information Systems
  - Analysis and Design
- BIS 450 Office Management
- BIS 484 Micrographics and Reprographics
- BIS 486 Corporate Records Centers
- Plus 9 hours, as advised, from 9
- BIS 242 Organizational Communication
- BIS 261 COBOL Programming
- BIS 264 Report Program Generator
- 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 Readings in Administrative Systems

**BUSINESS COMMUNICATION MINOR (BCM)**
21 hours
- BIS 242 Organizational Communication
- BIS 343 Report Writing
- BIS 442 Senior Seminar in Business Communication
- Plus electives, as advised, from 6

**FINANCE AND COMMERCIAL LAW MAJOR (FCL)**
30 hours
- BIS 260 Microcomputer Business Applications
- BIS 261 COBOL Programming
- BIS 360 Information Systems
- BIS 362 Advanced Programming
- BIS 462 Applied CIS Development Technology
- CS 111 Computer Science I
- CS 443 Data Base Management Systems
- Plus 9 hours, as advised, from 9
- CS 223 Computer Organization
- BIS 264 Report Program Generator
- BIS 386 Advanced Office Systems
- BIS 442 Organizational Communication
- BIS 464 Quantitative Methods for Information Systems
- BIS 465 Trends in Information Systems
- BIS 486 Global Information Infrastructure
- 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 MAJOR**
Advisors: Department of Accounting, 3290 Schneider Hall, for assignment to an advisor.

Advisors: Department of Accounting, 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 310, 345, and 351. The remaining twelve hours shall be selected from Finance courses in the FCL curriculum, in consultation with an advisor from the Finance faculty. BUS 370 Integrated Communication in Business will meet the business writing requirement for the major. The advanced ECON requirement may be met by taking one of the following: ECON 310, 319, 387, 400, 403, or 406.

Proper sequencing of advanced courses allows a student in finance to study corporate financial management, securities and investment management, financial markets and institutions, insurance, and real estate.

**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 3 elective finance courses as shown below:

- ACTY 210 Principles of Accounting I
- FCL 310 Introduction to Financial Markets
- FCL 320 Business Finance
- FCL 351 Investment Analysis

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.

**B: Insurance Minor (INS)**
Advisor: Kennedy
Students wishing to minor in insurance are required to take 21 hours. Fifteen of these hours are in insurance courses including:

- FCL 310 Financial Markets
- FCL 360 Risk and Insurance
- FCL 361 Life and Health Insurance
- FCL 362 Property and Liability Insurance

In addition, one (1) of the following courses must be chosen:

- FCL 320 Business Finance
- FCL 462 Group Insurance and Pensions
- FCL 463 Risk Management and Insurance

Two (2) of the following non-finance courses must also be taken:

- ACTY 210 Principles of Accounting I
- BIS 102 Introduction to Information Processing
- or
- BIS 110 End User Computing
- MGMT 250 Organizational Behavior
- MKTG 250 Marketing Principles

**C: 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
- FCL 382 Business Law
- or
- FCL 383 Commercial Law

Nine (9) additional semester hours in law...

The remaining six (6) hours must be selected from the following courses:

- ACTY 210 Principles of Accounting I
- ACTY 211 Principles of Accounting II
- MGMT 250 Organizational Behavior
- MKTG 250 Marketing Principles

**D: Real Estate Minor (REA)**
Advisor: Scheu
Students wishing to minor in real estate are required to take 21 hours. Fifteen of these hours are in Finance and Commercial Law courses and six hours are from other disciplines in the Haworth College of Business. The real estate minor consists of:

- Six (6) hours from the following Haworth College of Business courses:
  - ACTY 210 Principles of Accounting I
  - MKTG 360 Professional Selling
  - MKTG 250 Marketing Principles
Management (MGMT)

Advisors: Report to the Department of Management, 3390 Schneider Hall, for assignment to an advisor.

MANAGEMENT MAJOR (MG)T

24 hours

A major in the three concentrations in management consists of the three courses listed below, plus 15 hours of additional work. The Production/Operations Management concentration does not require MGMT 301 or 302. Such courses 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 major, a student must complete MGMT 314 Business Ownership and Management, MGMT 414 Entrepreneurship, MGMT 352 Human Resource Management, and two electives 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/Strategy . . 3

Two electives from the Management Department approved by a Departmental advisor . . . . . . . 6

HUMAN RESOURCE MANAGEMENT MAJOR (HRM)

30 hours

The major in Human Resource Management consists of the 24 hours of required courses in management listed below, plus 6 hours of additional work: BUS 370, the baccalaureate-level writing course requirement, and ECON 310, the advanced economics course for the major.

MGMT 250 Organizational Behavior . . . . 3
MGMT 301 Project Management . . . . 3
MGMT 350 Managing Diversity in Organizations . . . . 3
MGMT 352 Human Resource Management . . . . 3
MGMT 352E Workforce Competencies . . . . 3
MGMT 432 Compensation and Benefits . . . . 3
MGMT 451 Staffing Organizations . . . . 3
MGMT 454 Employment Relations . . . . 3
BUS 370 Integrated Communication in Business . . . . 3
ECON 310 Labor Economics . . . . 3

MANAGEMENT MINOR

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 Department approved by a Departmental advisor . . . . . . . . . . 6

Two additional courses selected from among the following:

ACTY 210 Principles of Accounting I (required of Non-BBA majors) . . . . . . . . . . 3
FCL 320 Business Finance . . . . 3
FCL 340 Legal Environment . . . . 3
MKTG 250 Marketing Principles . . . . 3

MARKETING MAJOR (MKT)

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 marketing, 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 four majors: Marketing, Advertising and Promotion, Food Marketing, and Sales and Business Marketing. The Department also offers minors in Advertising and Promotion and in Marketing.

The Marketing (MKT) major is intended for students who wish to receive general training in marketing while having the flexibility to choose marketing electives that correspond to their particular career interests. Marketing majors can pursue a variety of careers, such as sales and sales management, consumer/marketing research, sport marketing, or international marketing. The Advertising and Promotion (ADV) major prepares students for a variety of promotion-related positions, such as account management, copywriting, media buying, and advertising sales. Graduates typically find employment in the advertising industry or in firms with marketing communications, 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 brokers, and for management positions with food retailers and wholesalers. Western Michigan University is nationally recognized as one of only a few leading universities offering a specialized major in food marketing to prepare students for food industry careers.

The Sales and Business Marketing (SBM) major prepares students for sales and marketing careers with companies that emphasize business-to-business marketing. It is strongly recommended that Industrial Marketing majors complete a minor in Biological Sciences, Chemistry, Computer Science, Graphic Arts, Manufacturing Technology, or Physics to enhance their career opportunities with technology-oriented employers.

Program Requirements

Course requirements for each of the four 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 a departmental advisor. Students should report to the Department of Marketing, 2130 Schneider Hall, for a list of faculty advisors and their office hours. BBA students wishing to declare a major or minor 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 report with a College of Business advisor in 2130 Schneider Hall to obtain a written permission slip before reporting to the Department of Marketing.

MARKETING MAJOR (MKT)

24 hours

MKTG 250 Marketing Principles . . . . 3
MKTG 371 Marketing Research . . . . 3
MKTG 374 Advertising and Promotion . . . . 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 Electronic Commerce and Marketing . . . . 3
MKTG 376 Sales Administration . . . . 3
MKTG 377 Sales Promotion . . . . 3
MKTG 380 Sport Marketing . . . . 3
MKTG 392 Applied Research in Marketing . . . . 3
MKTG 470 Business Marketing Strategy . . . . 3
MKTG 476 Retail Management . . . . 3
MKTG 477 Consumer Behavior . . . . 3
MKTG 478 Special Topics in Marketing . . . . 3
MKTG 480 Franchising . . . . 3
MKTG 484 Business Logistics . . . . 3

Other Requirements: Advanced Economics requirement must be satisfied through completion of one of the following courses:

ECON 310 Labor Economics . . . . 3
ECON 319 Environmental Economics . . . . 3
ECON 320 Money and Banking . . . . 3
ECON 345 Business, Government, and Society . . . . 3
ECON 380 International Economics . . . . 3
ECON 400 Managerial Economics . . . . 3
ECON 403 Intermediate Microeconomics

ADVERTISING AND PROMOTION MAJOR (ADV)

24 hours

MKTG 250 Marketing Principles . . . . 3
MKTG 371 Marketing Research . . . . 3
MKTG 374 Advertising and Promotion . . . . 3
MKTG 472 Media Planning and Research . . . . 3
MKTG 474 Creative Strategy . . . . 3
MKTG 477 Consumer Behavior . . . . 3
Other Requirements: Advanced Economics
requirement must be satisfied through completion of one of the following courses:
ECON 309 Women and the Economy
ECON 311 Environmental Economics
ECON 320 Money and Banking
ECON 345 Business, Government, and Society
ECON 350 International Economics
ECON 400 Managerial Economics

FOOD MARKETING MAJOR (FMK)
24—25 hours

MKTG 250 Marketing Principles . . . . 3
MKTG 258 Food Systems . . . . 3
MKTG 371 Marketing Research . . . . 3
MKTG 391 Food Merchandising . . . . 3
MKTG 397 Retail Management . . . . 3
MGMT 352 Human Resource Management . . . . 3

Select one of the following courses (3—4 hours):
FCS 466 Institutional Management . . . . 4
MKTG 392 Applied Marketing Analysis . . . . 3
MKTG 396 Food Industry Survey . . . . 3
MKTG 476 Sales Management . . . . 3
MGMT 362 Human Resource Management . . . . 3

Other Requirements: Advanced Economics
requirement must be satisfied through completion of one of the following courses:
ECON 310 Labor Economics
ECON 345 Business, Government, and Society
ECON 380 International Economics
ECON 400 Managerial Economics
ECON 403 Intermediate Microeconomics

SALES AND BUSINESS MARKETING MAJOR (GBM)
24 hours

MKTG 250 Marketing Principles . . . . 3
MKTG 258 Food Systems . . . . 3
MKTG 371 Marketing Research . . . . 3
MKTG 372 Purchasing Management . . . . 3
MKTG 376 Sales Administration . . . . 3
MKTG 460 Advanced Selling Strategies . . . . 4
MKTG 470 Business Marketing Strategy . . . . 3

Select one of the following courses (3 hours):
MKTG 373 Electronic Commerce and Marketing . . . . 3
MKTG 374 Advertising and Promotion . . . . 3
MKTG 377 Sales Promotion . . . . 3
MKTG 380 Sport Marketing . . . . 3
MKTG 392 Applied Marketing Analysis . . . . 3
MKTG 475 International Marketing . . . . 3
MKTG 478 Special Topics in Marketing . . . . 3
MKTG 484 Business Logistics . . . . 3

Other Requirements: Advanced Economics
requirement must be satisfied through completion of one of the following courses:
ECON 310 Labor Economics
ECON 319 Environmental Economics
ECON 320 Money and Banking
ECON 345 Business, Government, and Society
ECON 380 International Economics
ECON 400 Managerial Economics
ECON 403 Intermediate Microeconomics

Recommendation: It is strongly recommended that students considering employment in manufacturing-related industries complete one or more of the following courses either to fulfill their General Education Distribution Area 7 requirement or as an elective:
IME 510 Introduction to Manufacturing (Distribution Area 7)
ME 220 Processes and Materials in Manufacturing (Distribution Area 7)

ADVERTISING AND PROMOTION MINOR (ADV)
21—22 hours

Note: Nonbusiness majors are limited to only one minor in the Haworth College of Business.
MKTG 250 Marketing Principles . . . . 3
MKTG 371 Marketing Research . . . . 3
MKTG 477 Consumer Behavior . . . . 3
MATH 366 or MATH 216 (or equivalent) . . . . 3—4

Select two courses (6 hours) from the following:
MKTG 257 Sales Promotion . . . . 3
MKTG 472 Media Planning and Research . . . . 3
MKTG 473 Interactive Marketing Strategy . . . . 3
MKTG 474 Creative Strategy . . . . 3
MKTG 475 International Marketing . . . . 3

MARKETING MINOR (MKT)
18—19 hours

Note: Nonbusiness majors are limited to only one minor in the Haworth College of Business.
MKTG 250 Marketing Principles . . . . 3
MKTG 290 Food Marketing Systems . . . . 3
MKTG 371 Marketing Research . . . . 3
MKTG 376 Sales Administration . . . . 3
MATH 366 or MATH 216 (or equivalent) . . . . 3—4

Select three courses (9 hours) from the following:
MKTG 290 Food Marketing Systems . . . . 3
MKTG 371 Marketing Research . . . . 3
MKTG 376 Sales Administration . . . . 3
MKTG 477 Consumer Behavior . . . . 3
MKTG 478 Special Topics in Marketing . . . . 3
MKTG 480 Franchising . . . . 3
MKTG 484 Business Logistics . . . . 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 50 percent of their coursework in business and upper-division economics courses, in addition to the 50 percent in non-business requirement.

ECONOMICS (ECO)
Advisor: Phillip 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.

GENERAL BUSINESS MAJOR (GBS)
24 hours
Advisors: Please contact the Finance and Commercial Law department office, 3290 Schneider Hall, for an advisor.

In addition to the completion of the curriculum requirements for all students pursuing the Bachelor of Business Administration degree, all students must complete satisfactorily the following: 1) Six advanced (300-level or above) business college courses from the Departments of Accounting, Business Information Systems, Finance and Commercial Law, Management, and Marketing with a maximum of two courses from any one department; 2) one advanced economics course from among ECON 310, 319, 320, 380, 387, or 400; and 3) BUS 370 (Integrated Communication in Business) to meet the baccalaureate-level writing requirement for the major.

INTEGRATED SUPPLY MANAGEMENT (ISM)
37 hours
Students with this major must complete satisfactorily either ECE 122 or MAT 200 to meet the mathematics requirement for the Pre-Business Curriculum. In addition to the curriculum requirements for all students pursuing the Bachelor of Business Administration Degree, Integrated Supply Management majors must complete the following:
ECE 100 Fundamentals of Circuits and Electronics . . . . 3
One of the following: ECE 101, IME 305, IME 315, IME 508, CS 104 or CS 111 . . . . 3
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

PUBLIC ADMINISTRATION (PAB)
Major Requirements: 24 hours
Advisor: Gossman, McCarty
In addition to the curriculum requirements for all students pursuing the Bachelor of Business Administration Degree, complete 24 hours from the following courses:
Select one of the following required courses:
FCL 380 Legal Environment . . . . 3
FCL 390 Business Finance . . . . 3
Select seven (7) courses (21 hours) from the following list of elective 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 Investments . . . . 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 392 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 Public Relations . . . . 3
PSCI 535 The Politics of Governmental Budget and Finance 3
PSCI 539 Administrative Theory 3
PSCI 591 Statistics for Political Science 3

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 50 percent of their course work in business and upper division economics courses.

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

GENERAL BUSINESS MINOR 18 hours
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 18 hours of course work approved by a general business advisor (3290 Student Services)

BUS 175 Business Enterprise 3
ACTY 210 Principles of Accounting 3
BUS 270 Introduction to Information and Communication Infrastructure 3

or

BUS 275 Analytical Foundations for Decision Making 3
FCL 320 Business Finance 3
FCL 380 Legal Environment 3
MGMT 250 Organizational Behavior 3
MGMT 250 Marketing Principles 3

*BUS 175 must be completed during the freshman or sophomore year.

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
MGKT 372 Purchasing Management 3
MGKT 484 Business Logistics 3

Capstone class—3 hours (take one of the following)
MGKT 485 Materials Systems Analysis 3
MGMT 480 Materials Management 3
MGMT 481 Integrated Materials Systems 3

Elective—3 hours (one of the following)
IME 329 Quality Assurance and Control 3
IME 318 Statistical Quality Control 3
FCL 486 Marketing and Sales Law 3
MGKT 485 Materials Systems Analysis 3
MGMT 480 Materials Management Strategy 3
MGMT 481 Integrated Materials Systems 3

INTERNATIONAL BUSINESS MINOR 21 hours
Two courses from the following list 6
FCL 320 Business Finance (Prereq. MATH 216 and ACTY 210) 3
FCL 380 Legal Environment 3
BIS 340 Principles of Business Communications (Prereq. BIS 145) 3
MGMT 300 Fundamentals of Management (Prereq. FCL 485) 3
MGKT 250 Marketing (Prereq. ECON 201) 3

Four courses from the following list 12
BIS 454 Intercultural Business Communications 3
BIS 466 Global Information Systems 3
FCL 442 International Finance (Prereq. FCL 320) 3
FCL 484 International Business Law (Prereq. FCL 390) 3
FCL 494 International Business Seminar (Prereq. FCL 390) 3
MGMT 410 Multinational Management 3
MGMT 411 Managing in Latin America 3
MGKT 475 International Marketing (Prereq. MGMT 250) 3
ECON 360 International Economics (Prereq. ECON 201-202) 3

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/regional area study requirement.

Haworth College of Business Courses (BUS) 3

BUS 175 Business Enterprise 3 hrs.
This course introduces students to the development and value of business institutions in society. Students will examine the dynamics of business decision making and demonstrate the ability to identify, define, and interpret essential business concepts. The relationships among business activities will be studied to determine their interactions with the economic, political, legal, global, and social environments. Juniors and seniors 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. Dominant international business policies will also be addressed. Prerequisite: Freshman/sophomore standing only. Not to be counted toward major/minor in BBA.

BUS 270 Information and Communication Infrastructure 3 hrs.
This course provides foundational knowledge about business information and communication infrastructures. A systems approach is used to present material on enterprise, national and global information, and communication infrastructures. The student will be introduced to applications for managerial information, data warehousing, decision support systems, CAD/CAM and logistic systems within the framework of integrated business and systems strategies. Electronic communication systems in networked, extended, and virtual enterprises also will be examined. Prerequisites: BIS 102 or 110 and BUS 142; enrollment open only to sophomores, students credited with 26 to 55 credit hours.

BUS 275 Analytical Foundations 3 hrs.
The use and understanding of qualitative and quantitative techniques using critical thinking for research and decision-making across the business functions of production, distribution, marketing, information management, accounting, finance, and human resource management. May include, for example, analytical techniques such as the decision cycle, problem identification, stochastic analyses, process mapping, simulation, forecasting, and resource allocation. Prerequisites: BUS 175 and MATH 216; enrollment open only to sophomores, students credited with 26 to 55 credit hours.

BUS 370 Integrated Communication in Business 3 hrs.
This course is designed to expand students' understanding of the complexities of oral and written communication in business. Individual and team projects will provide practical experience in the development of effective oral and written communication that reflects upon the students' ability to analyze an audience, adapt to the audience, and develop persuasive communication strategies reflecting the integration of written, oral, visual, and electronic modes of communication. This course is approved as a writing-intensive course which fulfills the University Baccalaureate Writing requirement for BBA degree students. Prerequisites: BUS 270, MGMT 250, enrollment open only to juniors, students credited with 56 to 87 credit hours.
BUS 375 Production and Service Productivity 3 hrs.
This course examines core business operations and their impact on the productivity of functional business areas and, in turn, the entire organization. The techniques for the design, implementation, and innovation of process improvements in business operations, for example, product design, location and capacity decisions, aggregate operations planning, just-in-time systems, supply chain management, statistical process control, and quality function deployment comprise the body of knowledge. Prerequisites: BUS 275 and MGMT 250; enrollment open only to juniors, students credited with 56 to 87 credit hours.

BUS 390 Business Internship 1–3 hrs.
The business internship is one of three alternatives for the program option core requirement for the BBA degree. The internship alternative is designed to provide practical hands-on business work experience within an organization and be related to a business discipline. Internships may or may not be related to the student's major field of study and are recommended for completion prior to the senior year of academic work. For each credit received, students are expected to participate in a minimum of 75 hours of compensated business work. Internships must be approved in advance by the Haworth College of Business before credit is awarded. Graded on a Credit/No Credit basis only. Prerequisite: Students must be admitted to the BAD (Business Administration) curriculum.

BUS 391 International Business Education 1–3 hrs.
The international business education course is one of three alternatives for the program option core requirement for the BBA degree. The international education alternative is designed to provide international study abroad, international field trips, and, for non-USA residents only, with completion of Area 3, General Education as cross-cultural international experiences. Such international experiences may or may not be related to the student's major field of study and are recommended for completion prior to the senior year of academic work. International experiences must be approved in advance by the Haworth College of Business or the Office of International Affairs before credit is awarded. Either letter grade or Graded on a Credit/No Credit basis only. Prerequisite: BUS 175 (Business Enterprise) and admission to the BAD (Business Administration) curriculum.

BUS 392 Business Field Research 1–3 hrs.
The business field research course is one of three alternatives for the program option core requirement for the BBA degree. The business field research alternative is designed to enhance the student's knowledge through applied research projects for business, non-profit, or government organizations. This course may be an extension of classroom and site-based business research work. In some cases, this alternative may be an extension of a student's Honors College thesis or other substantial academic project. Such field research projects may or may not be related to the student's major field of study and are recommended for completion prior to the senior year of academic work. Business field research projects must be approved in advance by the Haworth College of Business before credit is awarded. Letter grades only. Prerequisites: BUS 275 (Analytical Foundations for Decision Making) and admission to the BAD (Business Administration) curriculum.

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 475 Strategic Business Solutions 3 hrs.
This course prepares students for developing effective business solutions using integrated knowledge and skills in information, operation, people and technology. To develop business solutions, it is necessary to consider the tactical and strategic implications of the interactions among these four dimensions. This requires people who can integrate the functional knowledge, using different proportions in different situations, among the four dimensions. This requires people not to be narrowly based in one discipline, but individuals who have combined the necessary functional knowledge with the appropriate combination of human resources, technology and operations knowledge for strategic business solutions. Prerequisites: Completion of all other BBA core courses, nine credit hours in declared major and senior class standing; enrollment open only to seniors, students credited with 88 or more credit hours.

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 Departments 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
Anthony J. Cataldo
Hans J. Dykxhoorn
J. Patrick Forrest
Charles E. Hines, Jr.
David N. Hurtt
Jerry G. Kreuze
Sheldon A. Langsam
William C. Morris
Gale E. Newell
David Rozelle
Kathleen E. Sinning
Roger Y. W. Tang

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 210 Principles of Accounting I 3 hrs.
This course introduces basic business concepts and the use of accounting information in business to plan for, record, and evaluate the performance of operating activities. The course integrates the use of accounting information for both financial (external) reporting and managerial (internal) decision-making purposes.

ACTY 211 Principles of Accounting II 3 hrs.
This course examines the use of accounting information in planning and decision-making in business organizations. It includes the use of accounting information in planning for long-term financing and investing activities within an organization. The course also covers how a company's profitability from various activities, its cash flows, and its overall financial status are evaluated.

ACTY 310 Financial Accounting I 3 hrs.
This course examines the underlying concepts of financial accounting. It reviews the accounting cycle, related accounting records, and the financial statements. Accounting principles and reporting requirements for current assets, plant and equipment, intangibles, and other assets are also studied. Prerequisite: Students must earn a minimum grade of "C" in ACTY 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 included are accounting for pensions, income taxes, leases, accounting changes, and the Statement of Cash Flows. Prerequisite: ACTY 310.

ACTY 313 Accounting Information Systems 3 hrs.
This is an introductory survey course in accounting information systems. It includes consideration of issues such as transaction processing and transaction processing cycles, the use and effects of computers and other relevant technology on accounting, database and file systems, internal accounting and administrative controls, and information technology audits. The course emphasizes use of common business software which may include spreadsheets, flowcharting software, communications, general ledger, and...
database management systems.
Prerequisites: ACTY 211, BIS 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: ACTY 211.

ACTY 324 Introductory Tax Accounting
3 hrs.
A study of the federal tax laws that apply to business entities. The course focuses on concepts of income, deductions, and credits that apply to all reporting entities and emphasizes tax planning as well as tax compliance. Prerequisite: ACTY 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 prospective employers. Students are required to write a final report. Each employer will provide an evaluation of the student. A student must be enrolled in ACTY 410 while meeting the requirements of the course. This 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.

Open to Upperclass 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, governmental accounting, business combinations, reporting by parent-subsidiary consolidated entities (including foreign subsidiaries), and accounting for foreign currency transactions. Prerequisite: ACTY 311.

ACTY 513 Advanced Accounting Systems
3 hrs.
This course examines the types of accounting systems used by business enterprises. It includes in-depth examinations of database accounting systems, including the analysis of information, database design and implementation, and the creation of applications. Prerequisite: ACTY 313.

ACTY 514 Governmental and Nonprofit Accounting
3 hrs.
A comprehensive study of the recording of transactions by governmental units and the financial statements required by generally accepted accounting principles for governmental units. Governmental units are the basic unit of study; however, colleges and universities, healthcare entities, and other not-for-profit organizations are given brief coverage to illustrate accounting and financial reporting for all not-for-profit entities. Prerequisite: ACTY 211.

ACTY 516 Auditing
3 hrs.
A study of auditing of business and non-business organizations. Topics include audit risk, audit procedures during the planning and performance phase of an audit, internal control concepts, ethics and the legal environment, statistical audit tools, types of audit reports, auditing standards, and the relationship of internal auditing to financial statement auditing. Prerequisites: ACTY 311 and ACTY 213.

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 the application of the pronouncements. Prerequisite: ACTY 311.

ACTY 522 Cost Accounting—Theory and Practice
3 hrs.
A study of the use of cost accounting information within a planning and control framework. Topics include the information needs of managers, costing of products and services, cost allocations among departments of an enterprise, activity-based costing, the theory of constraints, cost of quality, budgeting, income effects of absorption and variable costing, transfer pricing, and performance measurement. Prerequisite: ACTY 322.

ACTY 524 Advanced Tax Accounting
3 hrs.
A study of the federal tax laws that govern the transactions during a corporation's life cycle. The tax effects of organizing, operating, making distributions, reorganizing, and liquidating regular and S corporations are analyzed. The differences in the taxation of corporations, partnerships, and limited liability companies are also addressed. Prerequisite: ACTY 324.

ACTY 598 Readings in Accounting
1-4 hrs.
Directed individual study of topics not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.
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 110 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 110 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 II, RPG III, and RPG III. Prerequisite: BIS 102 or 110 or equivalent.
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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum. Prerequisite: BIS 142 or equivalent; junior or senior 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 380 Business Web Design 3 hrs.
This course emphasizes the theory and application of internet-related technologies, such as World Wide Web, in various business communication situations. Combining critical thinking with design and presentation skills, students will explore, create, and implement various hyper-textual and multimedia applications and presentations to effectively related information in diverse business environments. Prerequisites: BIS 142, 260, and permission of instructor.
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 the planning, integration, and management technology and ergonomics in the information (white-collar) environment. Prerequisite: BIS 102 or equivalent.
BIS 387 End-User Support 3 hrs.
This course emphasizes both conceptual knowledge and skills required to support and manage end-user computing. It looks at different business models of providing such support and examines the major responsibilities of support personnel, including training users, evaluating hardware and software to make recommendations; installing, troubleshooting, and maintaining hardware and software; supporting end-user application development; and helping to administer networks and databases. A significant hands-on component of the course introduces the student to hardware installation and troubleshooting, software installation, data back-up and recovery, and similar skills needed by the support person. Prerequisite: BIS 260.
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. Prerequisite: BIS 102.
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 others. 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 460 Business Database Applications 3 hrs.
This course is focused on the design and development of business database applications. Database design and its business applications are integral and the critical part of any advanced information systems. This course covers conceptual data modeling, logical and physical database design, and implementation of a database with some real world business applications. Students are expected to apply modern database design software and tools to understand the construction and development of a business database using client/server technology and GUI application packages. In addition, students will learn the management and administration of databases for a business environment. Prerequisite: BIS 360.
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 methods, 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 in managerial decision making. Students apply these concepts by developing actual decision support systems/expert systems as part of their course work. Prerequisite: BIS 360.
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 468 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.
This course provides students with the theory and the practice to enable them to develop various types of publications and presentations in diverse formats, from conception through finished product. Using word processing, desktop publishing, and web authoring tools, students will employ various design techniques to produce documents according to business communication needs. Prerequisites: BIS 102/110 or equivalent; BIS 370 or equivalent.

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. Prerequisite: BIS 360.

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.

FINANCE AND COMMERCIAL LAW
A. Ed Edwards, Chair
Robert Balik
Nicholas C. Batch
Claudine Boerner
David Burnie
James D'Mello
Thomas Gossman
Norman Hawker
A. D. Issa
Robert Jones
Kenneth Kennedy
Christopher M. Korth
C. R. Krishna-Swamy
Inayat Mangla
F. William McCarty
Ali Metwalli
Craig Peterson
Ajay Samant
Tim F. Scheu
John Stevens
Leo Stevenson
Carol VanAuker-Height

Majors may be obtained in finance and in general business. Minors are available in finance, general business, insurance, real estate, international business, 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 for 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: ACTY 210; MATH 216 or 366 or equivalent.

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 345 Computer Applications in Finance
3 hrs.
A study of computer software and data systems to finance. Examples of the computer software used are Excel, Expo, Miniat, SAS, and Word. Financial information is obtained from web sites or financial databases such as CompuStat and CRSP. Some of the finance problems studied are creating cash budgets and loan amortization tables, estimating beta and forecasting financial needs. Students demonstrate computer proficiency through projects, exams and team presentations. 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, as are the functional aspects of insurer operations. The impact of insurance on public policy is also considered. Prerequisite: FCL 320.

FCL 362 Property and Liability Insurance
3 hrs.
The 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 371 Personal Financial Planning
3 hrs.
The course covers the various elements of the financial planning process. Topics include Risk Management, Investment Planning, Tax Planning, Retirement Planning and Estate Planning, as well as technological innovations in the financial services industry. Prerequisite: FCL 320.

FCL 372 Estate Planning
3 hrs.
The course examines legal, financial and practical considerations in the creation, management and conservation of an estate. Various types of property interests (joint tenancy, tenancy in common, community property) are reviewed. The use of revocable and irrevocable trusts, gifts, powers of attorneys, retirement and custodial accounts are discussed. The influence of federal estate and gift and state taxation rules on estate planning techniques is examined. Prerequisite: FCL 320.

FCL 412 Global Financial Markets
3 hrs.
The 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. Prerequisite: FCL 310 and FCL 320.

FCL 414 Management of Financial Institutions
3 hrs.
The 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 Short Term Financial Management
3 hrs.
An analytical approach to the study of short term financial management. In connection with Treasury Management Association this course is the Certified Cash Manager Associate Program (CCMA). An emphasis is placed on the working capital topics specifically addressed in this program. In addition to the practical emphasis of the CCMA approach the course will include the theoretical underpinnings of short term financial management utilizing cases and lectures to fully cover financial decision making in the area of working capital management, financial analysis, and forecasting. 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. Apart from the theoretical framework, the course includes cases covering financial decision-making processes in the areas of long-term financing decisions, financial structure, cost of capital, dividend policy, merger, reorganization and international financial management. Prerequisite: FCL 320.

FCL 432 Real Estate Investments
3 hrs.
The effect of various forms of taxation, market conditions and governmental policies as they affect the investor’s spendable income are reviewed. Prerequisite: FCL 320 and FCL 330 or consent of instructor.

FCL 433 Real Estate Appraisal
3 hrs.
A study of the sources of real estate value, the techniques for estimating property value, and the effective use of appraisal information. Prerequisite: FCL 320 and FCL 330 or consent of instructor.

FCL 437 Real Estate Management
3 hrs.
Management of income producing properties as an agent of the owner. Consideration of professional standards, business promotion, leasing, insurance and maintenance. Prerequisite: FCL 320.

FCL 442 International Finance
3 hrs.
A study of contemporary problems in international finance. The course examines the international money markets, working capital considerations and capital budgeting problems as faced by the multinational corporation. Prerequisite: FCL 320 or consent of instructor.

FCL 448 Internships
1–5 hrs.
Under the direction of a faculty advisor, students obtain employment experience with industrial, commercial, and financial enterprises (commercial banks, brokerage firms, etc.), with insurance companies or firms with an insurance division or department, or with a real estate firm or enterprises with a real estate department or division. Students are required to file periodic reports to the advisor. In addition, they are evaluated by the firm’s executive. Available only to students majoring in finance, insurance, or real estate. No more than 3 hrs. can be used as credit toward a major or minor. Written consent of instructor and department chair is required.

FCL 453 Securities Analysis
3 hrs.
An analysis of stocks and bonds as investment vehicles. The course is designed as a sophisticated analysis of valuation techniques with a view towards aiding the student to bridge the gaps between techniques used by the academician and the practitioner. Prerequisite: FCL 311.

FCL 453 Risk Management and Insurance
3 hrs.
This course covers the function of risk management and the responsibilities of risk managers. The sources of risk information are examined, the business risks analyzed and the alternative methods of handling risks evaluated. Criteria for selection of proper insurance coverages and selection of carriers and intermediaries are reviewed. Prerequisite: FCL 360 or consent of instructor.

FCL 463 Internships
3 hrs.
Under the direction of a faculty advisor, students obtain employment experience with industrial, commercial, and financial enterprises with an insurance division or department, or with a real estate firm or enterprises with a real estate department or division. Students are required to file periodic reports to the advisor. In addition, they are evaluated by the firm’s executive. Available only to students majoring in finance, insurance, or real estate. No more than 3 hrs. can be used as credit toward a major or minor. Written consent of instructor and department chair is required.

FCL 465 Financial Institutions
3 hrs.
The course covers the function of risk management and the responsibilities of risk managers. The sources of risk information are examined, the business risks analyzed and the alternative methods of handling risks evaluated. Criteria for selection of proper insurance coverages and selection of carriers and intermediaries are reviewed. Prerequisite: FCL 360 or consent of instructor.

FINANCE AND COMMERCIAL LAW

FCL 150 Personal Law
3 hrs.
Personal Law studies some of the legal problems faced in everyday living, such as traffic infractions, rental and property laws, consumer disputes, insurance, and wills. It presents a practical approach, which also provides a fundamental foundation for further legal study. May not be taken to fulfill BBA requirements.

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 covered. Emphasis will be on relevant evidentiary topics. Prerequisite: SOC 462 or PSCI 325 or FCL 380 or consent of Instructor.
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 486 Marketing and Sales Law 3 hrs. This 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.

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 involves participation 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 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 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

Dan Farrell, Chair
Raymond E. Alle
Henry H. Bean
Thomas A. Greer
Sime Curovick
Satish Deshpande
David Flanagan
Jaume Franquesa
Demodar Golhar
Robert Landeros
Mark Roehling
K.C. O'Shaughnessy
Trudy G. Verster

Management Courses (MGMT)

MGMT 250 Organizational Behavior 3 hrs. This course provides an examination of individual, interpersonal, group, and organization processes faced by employees. Current theoretical research, and practice regarding variables that influence human behavior are discussed. Emphasis is placed on learning relevant to goal setting, managing change, team processes, reward structures, human productivity, and career management in organization settings. Prerequisite: BUS 175.

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 management. 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 Project Management 3 hrs. Students acquire the knowledge, tools, and experience to work effectively as a member of a project team through a combination of lectures and experiential learning. In addition to acquiring specific project management skills and using computing applications for project management, the course advances students' understanding of the human dimensions of work processes. Prerequisites: MGMT 250.

MGMT 302 Project Leadership 3 hrs. Students acquire the knowledge, tools, and experience to lead project teams through a combination of lectures and experiential learning. This class emphasizes advanced project management skills and concepts crucial to successful leadership such as motivation, decision making, and negotiation. Students apply the concepts learned by assuming leadership roles for the project teams in MGMT 301. Prerequisite: MGMT 301.

MGMT 314 Business Ownership and Management 3 hrs. This course is designed to supply the specific knowledge and skills a business-trained individual needs for founding or buying an independent firm. Specific applications of business areas such as finance, accounting, 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. Human Resource Information Systems (HRIS) is used to study effective utilization of human resources.

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.

MGMT 353 Organizational Competencies 3 hrs. This course focuses on the role of the HR professional in guiding organizational change. Thus, the content of the course emphasizes training and development activities, but also includes the integration of these activities into strategic change imperatives. The course pedagogy includes case studies and group exercises designed to stimulate students toward the integration of training, development, and strategy.

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 queueing 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. (Repeatable)

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 412 Management Internship 1–4 hrs. Students may engage in a variety of professional experiences under the direct 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.

This course is intended as an advanced entrepreneurial success. Prerequisite: entrepreneurial careers. Primary attention is 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 and Benefits

3 hrs.

This course is intended as an advanced undergraduate course for students with a commitment to human resource management. The course builds on a knowledge of motivation and statistics to develop an understanding of organization wage and salary statistics, incentive systems, and employee health and pension systems. Students completing the course are expected to have acquired an understanding of contemporary approach to compensation and benefits. Prerequisite: MGMT 352.

MGMT 451 Staffing Organizations

3 hrs.

This course is intended to: a) provide an overview of the process by which organizations acquire and deploy the organization's workforce, and b) begin developing specific knowledge, skills, and abilities needed to effectively carry out staffing activities (attaining, selecting, placing, and socializing employees). Students learn theories, research, policies, practices, and legal considerations relevant to these objectives. Prerequisite: MGMT 352.

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 business 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. Prerequisite: 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.

This course will examine the total quality management (TQM) philosophy. The topics include benchmarking, continuous improvement, and employee participation. Statistical control charts and quality tools. A detailed discussion of the Deming, Juran and Crosby principles is undertaken. Prerequisite: MGMT 300 or equivalent. 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, MKTG 372, MKTG 484, ME 220.

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. Prerequisites: Senior standing and successful completion of all core courses.

MARKETING

Andrew A. Brogowicz, Chair
Joseph J. Belonax
Lowell E. Crox
Linda M. Delene
Bruce Ferrin
Frank Gambino
Ronald Larson
Hanjoon Lee
Jay D. Lindquist
Musthaf Luqman
Edward J. Mayo
Betty Parker
Richard E. Plank
Zahar A. Quraeshi
Robert Reck
Roberta Schultz
Deborah Speake
Ann Veeck

MARKETING 149

MARKETING

MGMT 250 Marketing Principles

3 hrs.

Introduction to the role of marketing in the U.S. 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 channel relationships. Prerequisite: Sophomore standing.

MGKT 290 Food Marketing Systems

3 hrs.

An introductory course designed to provide an overview of the 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.

MGKT 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, departmental major and minors, SEM majors and minors, and TEX majors only.

MGKT 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.

MGKT 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.

MGKT 373 Electronic Commerce and Marketing

3 hrs.

This course examines the growth and nature of electronic commerce in marketing. Electronic commerce is a tool that links companies directly with customers, suppliers and other participants for the presentation, development and delivery of products and services. Through the study of electronic commerce, students will gain marketing knowledge about...
defining the customer set and components of the electronic customer relationship. Additional emphasis will be placed on the role of electronic communication (including the Internet) with customers, along with the simultaneous order and delivery technology used in electronic commerce platforms.

Prerequisites: MKTG 270 and 374.

MKTG 374 Advertising and Promotion 3 hrs.
A comprehensive survey of basic principles of advertising and promotion. The course will include the study of promotion media, practices and theories and the effects of advertising and promotion in the firm, the economy, and society. Students will be introduced to the fundamentals of Integrated Marketing Communications (IMC).

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 concepts and practices of 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 effecting an immediate sale. Prerequisite: MKTG 250.

MKTG 380 Sport Marketing 3 hrs.
This course presents an overview of the marketing of sports at the professional and collegiate levels, as well as the use of sport sponsorships by commercial enterprises to help market products and services. Class projects emphasize original research into sport marketing topics, with collaboration from industry professionals. Prerequisites: MKTG 250 and permission of instructor.

MKTG 391 Food Merchandising 3 hrs.
A course designed to acquaint students with merchandising principles and procedures 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/location; product mix; and promotion methods used by retailers, manufacturers, and wholesalers. Prerequisite: MKTG 250, MKTG 290; Food Marketing majors only, or consent of instructor.

MKTG 392 Applied Marketing Analysis 3 hrs.
This course is designed to actively involve students in an applied marketing research project. Working closely with a business, nonprofit, or non-profit organization, students will be involved in the process of research design, including problem identification, sampling design, instrument development, data collection, data analysis, interpretation of findings, and presentation of findings. Emphasis will be placed on the development and application of analytical techniques to address marketing problems.

Prerequisites: BUS 275, MKTG 371, and permission of instructor; departmental majors only.

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 will experience in-depth practice 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 460 Advanced Selling Strategies 3 hrs.
This course examines advanced methods of questioning, customer need analysis and problem finding, creative solution development, computer based sales planning, team selling, and elements of time and territory management. Exercises, extensive role playing, and cases are used. Prerequisites: MKTG 360 and 372; Sales and Business Marketing majors only.

MKTG 470 Business Marketing Strategy 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 and Research 3 hrs.
This course examines the media used in Integrated Marketing Communications (IMC). Students will learn media vocabulary and techniques of audience measurement and media scheduling and buying. Emphasis is placed on secondary research and media sources to develop comprehensive media plans for solving marketing communications problems. Prerequisites: MKTG 371 and MKTG 374; Advertising and Promotion majors and minors only.

MKTG 473 Interactive Marketing Strategy 3 hrs.
An applied course in interactive marketing strategy development. Covers principles, methods, and technologies of direct mail, catalog, telemarketing, Internet, and other electronic media to the selling of goods and services. Student teams develop a complete interactive marketing strategy involving research, marketing plan, media plan, creative plan and execution, and budget for current case situation. Prerequisites: MKTG 474; Advertising and Promotion majors and minors only.

MKTG 474 Creative Strategy 3 hrs.
Students will acquire an understanding of the creative process used to develop Integrated Marketing Communications (IMC) strategies for product/service positioning and launch. Consumer, company, and product research will be integral parts of the learning process. Students will analyze campaigns, develop copy platforms and IMC strategies and executions. Prerequisite: MKTG 374. Corequisite: MKTG 477. Advertising and Promotion majors and minors only.

MKTG 475 International Marketing 3 hrs.
An examination of the theories and principles of International Marketing. This course focuses on major concepts and dimensions of international marketing for small and large businesses. Emphasis on developing managerial frameworks within which global or multinational marketing programs can be planned, analyzed and assessed. Prerequisites: MKTG 250.

MKTG 476 Retail Management 3 hrs.
This course focuses on professional management of retail companies. It addresses all levels of management and covers the development of strategies (strategic, administrative, and operational) within the two largest functional divisions of retail organizations, namely, the merchandising and the store operations divisions. Attention is also given to other functions (finance, human resources, research, advertising, etc.) but primarily as they relate to merchandising and store operations. Prerequisite: MKTG 250.

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. Prerequisite: MKTG 250 and 371. May be taken concurrently with 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 franchisees and franchisors. Prerequisite: MKTG 250.

MKTG 481 Integrated Marketing Communications Campaigns 3 hrs.
This is the capstone course for advertising and promotion majors. It will include promotional
and managerial case studies. Complete IMC campaigns will be developed based on research, marketing plans, media plans, creative plans, and creative executions. Advertising research will be explored. Budget strategies will be discussed and applied. Emphasis will be on integrated marketing communications planning. Development of "portfolio pieces" will be part of this course. Prerequisites: MKTG 472; 474; Advertising and Promotion majors only.

**MKTG 484 Business Logistics** 3 hrs.
An analysis of the movement, handling, and storage of products and materials, including work-in-process and finished goods. Emphasis on customer requirements and customer satisfaction, total quality management, and optimization of total distribution costs. Prerequisite: MKTG 250.

**MKTG 485 Applied Process Reengineering** 3 hrs.
This course examines the application of analytical and process measurement techniques to process design decisions. The benefits of process standardization and improvement will be documented and discussed. This course is cross-listed with IME 488. Prerequisites: Senior standing; ISM major or permission of instructor.

**MKTG 486 Marketing Strategy** 3 hrs.
This course examines marketing strategy and its impact on business success and failure. Comprehensive marketing strategy requires an understanding of competitive dynamics, market forces, customer satisfaction and loyalty as they relate to specific target market and marketing mix decisions. Marketing strategy provides an opportunity for students to learn and apply strategic marketing decision processes to establish, maintain or improve an organization's competitive advantage. Case studies, examples from current business news, computer simulations or team projects all may be used to demonstrate the role of marketing strategy in business. Prerequisites: Completion of MKTG 250, 371, and two other marketing classes; enrollment restricted to senior level students with 88 credit hours or more.

**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. Prerequisite: MKTG 391. Food Majors only, or consent of instructor.

**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 computer software, 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.

**MILITARY SCIENCE**

**LTC Robert J. Beecher, Chair**
CPT James Purrenhage
CPT Stephen Fisher
CPT Mike Wertz
MSG William Lafayette
SFC Martin Legg
SGT Scott Carney
Mr. Jim Zeller
Mrs. Sandy Lallier

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 broaden students' knowledge of the role of the military in society. The department operates 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. Uniforms provided for all Advacned 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.

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 $30,000, 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. 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; be not 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 with 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 in effect. Additional funds are available to ROTC 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 all 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. Additional funds are available to ROTC 2- and 3-year scholarship recipients with a $1,000 annual incentive award and 4-year scholarship recipients with a $2,500 annual incentive award.

**Facilities**

The department is located in Oakland Gym, with a drill hall and classrooms. 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 reserve component.

**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 Component. ROTC students take at least one military science course each semester. First year students normally take MLS 140 in the fall and MLS 150 in the winter semester. Sophomore students take MLS 240 during the fall and MLS 250 during the winter.

Exception 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 certain portions of the Basic Course waived. Students transferring from other institutions who have started either Army or Air Force ROTC will have their records reviewed to determine proper placement credit. Foreign students must contact the chair of the department prior to enrolling in military science courses.

**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 in commission. Students are eligible for a $2,600 annual incentive award and 4-year scholarship recipients with a $2,500 annual incentive award.
Between the junior and senior year, students will receive pay for attending a five-week camp which can qualify for academic credit (MLSC 290). 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 five-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.

Veterans need only to complete the Advanced Course requirements while they are 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 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).

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### Military Science Minors

A department minor slip is required.

#### FOUR YEAR PROGRAM

**Freshman Year**
- MLSC 140 and MLSC 150: 4 hrs.

**Sophomore Year**
- MLSC 240 and MLSC 250: 5 hrs.

**Junior Year**
- MLSC 340 and MLSC 350: 6 hrs.

**Senior Year**
- MLSC 440 and MLSC 450: 5 hrs.

#### 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.

- **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.

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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 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. All students seeking admission to teacher education curricula as entering freshman, transfers, or as students changing curricula must meet the following requirements if required (e.g. MATH 109, ED 104, ENGL 100.)

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. The Office of Admissions and Advising coordinates academic advisement for students enrolled in all teacher education curricula and processes applications for admissions to those curricula. 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 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, 1995)

Applications will be processed only once a year.

Students wishing to enter the Special 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 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
• Completion of a formal application by January 15 (Effective January 15, 1995)

Applications will be processed only once a year.

Students wishing to enter the Special Education program must meet the following minimum requirements at the time of application:
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 course work.
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 October 1. The deadline for submitting intern teaching applications for the Winter 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 usually within a 50 mile radius from main campus in designated partnership schools. Students may not enroll in other course work during intern teaching.

Please note: To be recommended for teacher certification, students must achieve at least a grade of "C" in ED 410 Seminar in Education and "credit" in Intern Teaching, in addition to having met all other requirements for intern teaching and graduation.

HEALTH AND LIABILITY INSURANCE
Students engaged in field experiences or intern teaching 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 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 before a person is recommended for certification.

This act requires the passing of appropriate and available test(s) prior to the addition of new subjects or grade levels.

Information regarding required teacher testing and test booklets may be obtained from the Office of Admissions and Advising, 2504 Sangren Hall.

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.

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.

ELEMENTARY EDUCATION
Elementary Education Curriculum
Advising: The Office of Admissions and Advising
2504 Sangren Hall

Bachelor of Arts or Bachelor of Science
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 Required Hours ........ 130 hours

University General Education Requirement (40 hours)
The University General Education Requirement is 37 hours. An additional three hours in General Education courses from the College of Arts and Sciences (nonprofessional courses only) are required for Michigan certification.

Minors/Majors Approved for Elementary Education
Students selecting the elementary education curriculum are required to complete three minors: the Elementary Education Minor (EED, 26-31 hrs.), the Science and Mathematics Teaching Minor (SCM, 29 hrs.), and one additional minor selected from the following:

- Art (ATE), 24 hrs.
- Early Childhood Education (EEE), 20 hrs.
- Integrated Creative Arts (ICA), 24 hrs.
- English Elementary Education (ENG), 21 hrs.
- French (FRE), 30 hrs.
- German (GER), 29 hrs.
- Group Social Studies (SOE), 24 hrs.
- Physical Education Elementary (PEE), 24 hrs.
- Spanish (SPA), 29 hrs.

OR

Students may elect 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 master's degree.
- Special Education, Emotionally Impaired /Elementary major** (34 hrs.). Contact Department of Educational Studies to determine acceptable minors and desired level of preparation.
- Special Education, Mentally Impaired /Elementary major** (34 hrs.). Contact Department of Educational Studies to determine acceptable minors and desired level of preparation.
- Special Education, Visually Impaired /Elementary major** (34 hrs.). Contact Department of Educational Studies to determine acceptable minors and desired level of preparation.

Special Education, Visually Impaired /Elementary major** (34 hrs.). Contact Department of Educational Studies to determine acceptable minors and desired level of preparation.

Additional information about the Elementary Education curriculum is available from the Office of Admissions and Advising.
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. *** Speech Pathology and Audiology majors are certified upon successful completion of the master's degree in speech pathology and audiology.

Requirements and approval for these required minors are available in the Office of Admissions and Advising. All students must have minor slips signed by an approved elementary education advisor.

General Education Foundations

*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 American History Since 1877 ........ 3 hrs.
*PSCI 200 International Government .......... 3 hrs.
ONE course from the following:
WMS 300 Working Women Past and Present ... 3 hrs.
WMS 330 Gender Issues in Education .......... 3 hrs.
WMS 450 Male/Female Psychological Perspectives .... 3 hrs.
HIST 316 Women in U.S. History ............. 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.

Pre-Professional Foundations: 3 hrs.
ED 250 Human Development .................. 3 hrs.

Professional Education: 14 hrs.
ED 359 Educational Psychology of Early Childhood (if Early Childhood minor) ... 3 hrs.
 prerequisite: ED 312
ED 310 Educational Psychology of Childhood ........ 3 hrs.
 prerequisite: ED 312
ED 371 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 410 Seminar in Education ................. 2 hrs.
 prerequisite: All course work completed.
ED 470 Intern Teaching: Early Childhood .... 5 hrs.
and/or ED 471 Intern Teaching: Primary Grades ........ 5/10 hrs.

Other Requirements

University Intellectual Skills requirements in Reading, Quantification, Writing, College Writing, Baccalaureate Writing, and Computer Literacy must be met.

The College-level Writing Requirement may be met by selecting BIS 142 or ENGL 105 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 265, and MATH 352. Students not electing the Science and Mathematics Teaching Minor must select CS 105 or BIS 102 or FCS 225. The Baccalaureate Writing Requirement is met through ED 395.

Students who have chosen the Elementary Education Curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing ED 395 School and Society.

Elementary Education Minors

These 26-31 hour interdepartmental programs are designed to prepare students to assume teaching responsibilities in a self-contained classroom in grades K-8.

**ELEMENTARY EDUCATION MINOR WITH SCIENCE AND MATHEMATICS TEACHING MINOR AND THIRD MINOR OF FRENCH, GERMAN, SPANISH, OR GROUP SOCIAL STUDIES**

Minimum 2.0 GPA required in this minor.

The courses in this minor cannot be used as part of any other minor or major.

Select TWO courses from the following:
ART 200 The Creative Process................. 3 hrs.
MUS 240 Music for the Classroom Teacher .... 3 hrs.
THEA 564 Drama in Education ............... 4 hrs.
 prerequisite: Admission to upper level professional education.

Required Courses—Admission to Professional Program for the following:

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: ENGL 282* AND ED 312 and ED 351
MATH 352 Teaching of Elementary/Middle School Mathematics ........ 3 hrs.
 prerequisite: "C" grade in MATH 150, 151, 265

ED 401 Teaching Elementary School Science ........ 3 hrs.
 prerequisite: ED 310 (ED 309 Early Childhood), all science courses, and MATH 352. May be taken concurrently with ED 402.
ED 402 Practicum in Science and Mathematics Teaching .......... 2 hrs.
 prerequisite: All science courses, MATH 352, and ED 401. (ED 401 may be taken concurrently.)
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 200*
Minimum 2.0 GPA required in this minor. The courses in this minor cannot be used as part of any other minor or major.

**Select One course from the following:**

ENGL 369 Writing in the Elementary School ......... 4 hrs.
Prerequisite: Admission to upper level professional education

ENGL 373 Reading as a Psycholinguistic Process ......... 4 hrs.
Prerequisite: Admission to upper level professional education

**ELEMENTARY EDUCATION MINOR WITH SCIENCE AND MATHEMATICSTEACHING MINOR AND THIRD MINOR OR ART, INTEGRATED CREATIVE ARTS, PHYSICAL EDUCATION/ELEMENTARY**

Minimum 2.0 GPA required in this minor. The courses in this minor cannot be used as part of any other minor or major.

**Required Courses**—Admission to Professional Program for the following:

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 ......... 3 hrs.
Prerequisite: ENGL 282*

ED 352 Literacy and Language Arts in the Content Areas ......... 3 hrs.
Prerequisites: ENGL 282* and ED 312

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; and (d) GEOG 102* OR HIST 211* OR PSCI 200*

* Approved for General Education credit. See major advisor.

**Select One course from the following:**

ENGL 369 Writing in the Elementary School ......... 4 hrs.
Prerequisite: Admission to upper level professional education

ENGL 373 Reading as a Psycholinguistic Process ......... 4 hrs.
Prerequisite: Admission to upper level professional education

**ELEMENTARY EDUCATION MINOR WITH MAJOR OF ART, MUSIC, OR PHYSICAL EDUCATION**

(This program does not include the Science and Mathematics Teaching Minor.)
Science and Mathematics Teaching Minor
Advisor: College of Education
Office of Admissions and Advising
2504 Sangren Hall
The minor is open only to students enrolled in the elementary education or special education curriculum. Transfer students will need to have their previous course work in science 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 additional mathematics endorsement, contact the Department of Mathematics and Statistics. Mathematics courses must be taken in sequence. Minimum 2.0 GPA required in this minor.

Required Courses:
SCI 170 Life Science for Elementary Educators I ........................................ 3 hrs.
SCI 270 Life Science for Elementary Educators II ........................................ 3 hrs.
SCI 180 Physical Science for Elementary Educators I .................................. 3 hrs.
SCI 280 Physical Science for Elementary Educators II .................................. 3 hrs.
SCI 190 Earth Science for Elementary Educators I ....................................... 3 hrs.
SCI 290 Earth Science for Elementary Educators II ....................................... 3 hrs.
MATH 150 Number Concepts for Elementary/Middle School Teachers ........... 4 hrs.
MATH 151 Geometry for Elementary/Middle School Teachers ....................... 4 hrs.
MATH 265 Probability and Statistics for Elementary/Middle School Teachers .... 4 hrs.

Minor in Early Childhood Education
Advisor: Office of Admissions and Advising
2504 Sangren Hall
(616) 387-3474
The completion of a minor in Early Childhood Education offers a special professional sequence for kindergarten through grade 3. A minor in Early Childhood Education with an endorsement signifies special preparation 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 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:

ED 309 Educational Psychology: Early Childhood ......................................... 3 hrs.
ED 350 Young Children, Their Families, and Their Society ............................ 3 hrs.
ED 351 Literacy Development ................................................................. 3 hrs.
ED 369 Early Childhood Classroom Organization and Management ............. 3 hrs.
ED 410 Seminar in Education: Early Childhood Emphasis ........................... 2 hrs.
ED/ *FCS 575 Administration of Child Development Centers ........................ 3 hrs.
ED 470 Intern Teaching (Early Childhood)** ........................................ 5 hrs.
* This course is required for the Early Childhood minor only.
** The intern teaching experience, with its accompanying seminar, counts as half of the required number of intern teaching hours for certification of the elementary school teacher and is not an additional intern teaching assignment. In all, the student must complete 12 hours of intern teaching and seminar for elementary certification.

Elementary Music Curriculum
Bachelor of Science

ELEMENTARY EDUCATION MUSIC
Grants certification to teach in elementary grade room (K-5) and music (K-8).

University General Education Requirements .............................................. 37 hrs.

Music Major .............................................. 40 hrs.
Music Convocation 101 (4 semesters) ....................................................... 0
Basic Music 160-161 ................................................................................. 6
Aural Comprehension 162-163-259 ......................................................... 3
Contemporary Music 587 ........................................................................ 2
Music History and Literature 170-270-271 .............................................. 8
Conducting 215 ....................................................................................... 1
Keyboard Musicianship 220-221-320-321 ............................................... 4
NOTE: All students in this curriculum will complete four semesters of keyboard, and pass an examination given by the Keyboard and Professional Education areas.

As the keyboard course is to be counted twice, students who do not qualify for entry in 220 must complete 120 and 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
Four semesters of voice, including one of Vocal Techniques for Music Educators (117) and one at 100- or 200-level Voice. Only one voice class is to be counted per semester.
Choral Ensemble 107, 108, or 112 ......................................................... 2
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 .................................................................... 3
Choral Elective Select one of the following:
Choral Conducting and Literature (330); Choral Techniques (339); Choral Methods (340) ................................................................. 2

Intrument Elective Select one of the following:
Fundamentals of Guitar (126); Instruments of the Band and Orchestra (279); Instruments of the Classroom (280) ..................... 2
Teaching and Learning in Music (348) ...................................................... 2
Music for the Special Student (385) ......................................................... 2

Elementary Education Minor ................................................................. 28 hrs.
Select one course from the following:
GEOG 105 ........................................................................................ 4
SCI 180 ............................................................................................... 3

Required Courses (to be taken in this sequence):
MATH 150 Admission to Professional Education Program for the following:
ED 312 ................................................................................................. 3
ED 351 ................................................................................................. 3

ED 352 ................................................................................................. 3
ED 407 ................................................................................................. 3

Select one course from the following:
ENGL 369 ........................................................................................ 4
ENGL 373 ........................................................................................ 4

Required course:
Additional course to be approved by education advisor (e.g. ED 200, ED 395) ...................................................................................... 3 hrs.

Professional Education Program .............................................................. 17 hrs.
ED 250 ................................................................................................. 3
ED 309 ................................................................................................. 3
ED 310 ................................................................................................. 3
ED 347 ................................................................................................. 2
SPED 527 .......................................................................................... 2
ED 369 ................................................................................................. 3
ED 371 ................................................................................................. 3
ED 395 ................................................................................................. 3

Professional Practicum ............................................................................ 12
ED 410 ................................................................................................. 2
ED 470, 471, or 472 .............................................................................. 5-10

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 Community.

SECONDARY EDUCATION

Secondary Education Curriculum
Bachelor of Arts or Bachelor of Science 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 until admission requirements are met and application is approved.

University General Education Requirement (Minimum 40 hours)
The University General Education Requirement is 37 hours. An additional 3 hours of General Education Program and/or courses in language and literature, science, or social studies areas (non-professional courses only).

Professional Education Program (34 hours)
Minimum grade of "C" required in each of these courses and a grade point average of 2.5 maintained in all coursework after admission to teacher education. To be taken in sequence.

Secondary Education for students with majors in the College of Arts and Sciences
ED 250 Human Development ................................................................. 3
(Must be at least a sophomore)
ED 300 The Adolescent and School Learning ........................................ 3
Prerequisite: ED 250
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 in the Secondary School ... 4
Prerequisite: ED 300; must be at least a junior. To be taken concurrently with ED 301.

ED 303 Organization and Management in Education ... 3
Prerequisites: ED 301 and ED 302.

ED 395 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 (Secondary) ... 10
Prerequisite: All of the above and successful completion of all course work.

ED 410 Seminar in Education ... 2
(Must be taken concurrently with ED 475)
Note: ED 475 and ED 410 comprise the "intern teaching semester."


ED 250 Human Development ... 3
(Must be at least a sophomore)

ED 305 K-12 Content Area Literacy ... 3
Prerequisite: ED 250

ED 395 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 (Secondary) ... 10
Prerequisite: All of the above and successful completion of all course work.

ED 410 Seminar in Education ... 2
(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.

Major/Minor Requirements
A minimum of one major (at least 30 semester hours or 36 for a group major) plus a minimum of one minor (at least 20 semester hours or 24 for a group minor) must be selected from the list below of Approved Majors and Minors for the Secondary Education Curriculum.

Electives
Elective credit may be used as needed to complete minimum graduation requirements and/or credits that do not qualify in the above categories. The candidate must satisfy the requirements for the B.A. or B.S. degree.

Approved Majors and Minors for the Secondary Education Curriculum.

Careers and Technical Education Majors:
Vocational Certification required
Home Economics (HEE)
Secondary Education in Business (SEB)
Secondary Education in Marketing (SEM)
Industrial Technology (IDT) — This major requires one of the following minors:
Drafting (DRA)
Graphic Arts (GRA)
Metalworking (MWK)
Power/Auto Mechanics (PGM)
Woodworking (WDK)
Chemistry (CHM)
Earth Science (EAR)
English (ENG)
Geography (GEG) — (See advisor for required minor)
Health Education (HET)
History (HIS) — Social Science Minor (SOS)
Industrial Education Technology Majors:
Non-Vocational Certification
Industrial Technology (IDT)
Technology and Design (TAD)
Language Department Majors:
French (FREN)
German (GER)
Latin (LAT)
Spanish (SPA)
Mathematics (MAT)
Music Education (MUE) (includes vocal or instrumental minor)
Physics (PHY)
Political Science (POL) — Social Science Minor (SOS)
Secondary Education in Business (SEB):
Non-vocational certification
Theatre Education (THE)
(only as second major)
Denotes K-12 certification in that subject.
**See advisor for vocational certification requirements.

Minors — At least 20 semester hours.
Choose one.
Biological (BIO)
Chemistry (CHM)
Communication (COM)
Earth Science (EAR)
English (ENG)
Environmental Studies (EV)
Family Life Education (FLE)
Geography (GEG)
Health Education (HET)
History (HIS)
Industrial Technology (IDT)
Language Department Minors:
French (FREN)
German (GER)
Latin (LAT)
Russian (RUS)
Spanish (SPA)
Mathematics (MAT)
Occupational Child Care (OCC) — With CTE majors only.
Occupational Foods (OCE) — With HEE major only.
Physical Education (PE)
*Physical Education: Exceptional Child (PEC) — With PYE major only.
Physics (PHY)
Political Science (POL)
*Secondary Education in Marketing (SEM)
*Students are granted special education approval for teaching physical education to a special population.
**See advisor for vocational certification requirements.

College of Education 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. Betz
Gary H. Bischof
Robert Brinkerhoff
James M. Croteau
Elsie S. Floyd
John S. Geisler
Arlen R. Gullickson
Suzanne M. Hedstrom
Alan J. Hovestadt
Patrick Munley
Theresa M. O’Halloran
Theresa A. Powell
Diane K. Swartz
Donna M. Talbot
Edward L. Trembley

The Department of Counselor Education and Counseling Psychology offers professional education in the field of counseling psychology and in the following concentrations in counselor education: community counseling, rehabilitation counseling, school counseling, and student affairs in higher education. Most of the courses are open to graduate students only, but the following courses are open to qualified undergraduates.

### Educational Studies Courses (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 work force.

### Educational Leadership

The faculty, courses, and programs of the Department of Educational Leadership are in the process of being merged into the Department of Educational Studies and the Department of Teaching, Learning, and Leadership. All courses and programs in Educational Leadership are at the graduate level. Students interested in these graduate courses and graduate programs in educational leadership should contact the offices of Educational Studies and of Teaching, Learning, and Leadership for more complete information.

### Admission

Students who desire to major in Special Education must be admitted to the pre-education curriculum of the College of Education. This status, however, does not assure admission to the Professional Education Curriculum of the department. The selection of students to the Professional Education Curriculum in Special Education occurs in January of each year after review of all applications by a departmental faculty committee.

Each year the Department of Educational Studies establishes the maximum number of new students who can be admitted to each of the special education curricula for the following year. The minimum criteria for admission consideration include:

1. Completion of the Western Michigan University Core Curriculum Pre-Education Curriculum.
2. Attainment of junior status (at least 56 semester hours completed) or in process at the time of application.
3. Attainment of a minimum 2.5 grade point average.
4. Achievement of passing scores on the Michigan Test for Teacher Certification (MTTC) — Basic Skills Section.
5. Completion of a minimum of 30 clock hours of documented contact with a person(s) with disabilities. Students must contact the department to secure assistance in meeting this requirement.
6. Submission of an application for admission to the Special Education Professional Education Curriculum by the announced date.

All completed applications will be evaluated using the following specific criteria:

1. Forty percent weighting based on grade point average at the time of application.
2. Thirty percent weighting based on performance on the Basic Skills Test (state required literacy test).
3. Ten percent weightings each for semester hours completed, under-represented group membership, and other (subjective) criteria.

**Education Leadership**

Elizabeth Whitten, Chair
James Bosco
Mary Anne Bunda
Ruth Ervin
Paul Farber
Maliy Gopal
Alonzo Hannaford
Barbara Loss Harris
George Haus
Guilma Holm
Don Gordon Icabone
Elena Lisovskaya
Gerald Pillsbury
Howard Poole
G. Thomas Ray
James Sanders
Sarah Summy
Daniel Stufflebeam

The Department of Educational Studies (formerly named the Department of Special Education) offers undergraduate programs for the preparation of special education teachers in the areas of emotional impairments, mental impairments, and visual impairments at K-12 level of special education. Students completing the undergraduate curriculum and who successfully complete the Michigan Test for Teacher Certification earn an Elementary Provisional Teaching Certificate in one of the above areas.

**Advising**

The department provides advising to all students who wish to major in Special Education, whether or not they are currently enrolled in the department’s curricula. Students are expected to meet with College of Education advisors and Special Education advisors early in their college careers.

### Intern Teaching

Students complete two semesters of intern 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 or Bachelor of Arts**

**State Elementary Provisional Certificate**

**Minimum Hours Required**

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**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, which is included in the curriculum requirements for each of the special education endorsements.

**Academic Minor (20-24 hrs.)**

For students interested in working primarily with students with disabilities at the elementary level: Select from the following minors approved for Elementary Education certification: Art, Creative Arts, Early Childhood Education, English, French, German, Group Social Science, Physical Education, Science and Mathematics Teaching Minor, Spanish, Special Physical Education.

**Electives**

To be selected as needed to reach the 130 hours required for the degree.

**Endorsement Major**

Students who have chosen the Special Education Curriculum will complete at least one endorsement major; the requirements for each are described below.

---

**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.

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**Educational Studies**

Students selected for admission will comprise a cohort which will begin taking courses in the Special Education sequence the following fall semester. Courses must be taken in the prescribed sequence. Six semesters (course work plus intern teaching) are required to complete the Professional Curriculum in Special Education.

Further information regarding admission requirements and procedures may be obtained by directly contacting the department.

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**Special Education Curriculum**

**Bachelor of Science or Bachelor of Arts**

**State Elementary Provisional Certificate**

**Minimum Hours Required**

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**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, which is included in the curriculum requirements for each of the special education endorsements.

**Academic Minor (20-24 hrs.)**

For students interested in working primarily with students with disabilities at the elementary level: Select from the following minors approved for Elementary Education certification: Art, Creative Arts, Early Childhood Education, English, French, German, Group Social Science, Physical Education, Science and Mathematics Teaching Minor, Spanish, Special Physical Education.

**Electives**

To be selected as needed to reach the 130 hours required for the degree.

**Endorsement Major**

Students who have chosen the Special Education Curriculum will complete at least one endorsement major; the requirements for each are described below.
ENDORSEMENT — EMOTIONALLY IMPAIRED—K-12

ELEMENTARY EMPHASIS: For the preparation of teachers who wish to work primarily with elementary level students with emotional impairments.

Curriculum Requirements (34 hrs.)

| ART 200 The Creative Process through Art | 3 |
| COM 170 Interpersonal Communication I | 3 |
| COM 104 Public Speaking | 3 |
| ED 250 Human Development | 3 |
| ED 312 The Foundations of Reading Instruction | 3 |
| ED 352 Literacy and Language Arts in the Content Areas | 3 |
| ED 356 School and Society | 3 |
| ENGL 282 Children's Literature | 4 |
| MATH 150 Number Concepts for Elementary/Middle School Teachers | 4 |
| MUS 141 Music in Special Education | 3 |
| MUS 240 Music for the Classroom Teacher | 3 |
| PEPR 340 Physical Education for the Elementary Classroom Teacher | 2 |
| PSY 100 General Psychology | 3 |

Course Requirements in Emotionally Impaired Major, Elementary Emphasis (30 hrs.)

A minimum grade of "C" must be earned in all courses listed as part of the Endorsement in Emotionally Impaired, elementary emphasis. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements.

NOTE: Students must see a department advisor regarding the sequence in which the courses must be completed.

Course Requirements in Emotionally Impaired Major — Secondary Emphasis (30 hrs.)

A minimum grade of "C" must be earned in all courses listed as part of the Endorsement in Emotionally Impaired, secondary emphasis. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements.

NOTE: Students must see a department advisor regarding the sequence in which the courses must be completed.

Intern Teaching (22 hrs.)

ED 471 Intern Teaching: Elementary/Middle School | 10 |
ED 410 Seminar in Education | 2 |
SPED 474 Intern Teaching in Special Education: Elementary Emotionally Impaired | 10 |

ENDORSEMENT — EMOTIONALLY IMPAIRED—K-12

SECONDARY EMPHASIS: For the preparation of teachers who wish to work primarily with secondary level students with emotional impairments.

Curriculum Requirements (34 hrs.)

| ART 200 The Creative Process through Art | 3 |
| COM 170 Interpersonal Communication I | 3 |
| COM 104 Public Speaking | 3 |
| ED 250 Human Development | 3 |
| ED 312 The Foundations of Reading Instruction | 3 |
| ED 351 Literacy Development | 3 |
| ED 396 School and Society | 3 |
| ENGL 282 Children's Literature | 4 |
| MATH 150 Structure of Arithmetic | 4 |
| MUS 141 Music in Special Education | 3 |
| MUS 240 Music for the Classroom Teacher | 3 |
| PEPR 340 Physical Education for the Elementary Classroom Teacher | 2 |
| PSY 100 General Psychology | 3 |

Course Requirements in Mentally Impaired Major, Elementary Emphasis (30 hrs.)

A minimum grade of "C" must be earned in all courses listed as part of the Endorsement in Mentally Impaired, elementary emphasis.

SECONDARY EMPHASIS: For the preparation of teachers who wish to work primarily with secondary level students with mental impairments.

Intern Teaching (22 hrs.)

ED 471 Intern Teaching: Elementary/Middle School | 10 |
ED 410 Seminar in Education | 2 |
SPED 474 Intern Teaching in Special Education: Elementary Emotionally Impaired | 10 |

ENDORSEMENT — MENTALLY IMPAIRED—K-12

SECONDARY EMPHASIS: For the preparation of teachers who wish to work primarily with secondary level students with mental impairments.

Curriculum Requirements (34 hrs.)

| ART 200 The Creative Process through Art | 3 |
| COM 170 Interpersonal Communication I | 3 |
| COM 104 Public Speaking | 3 |
| ED 250 Human Development | 3 |
| ED 312 The Foundations of Reading Instruction | 3 |
| ED 351 Literacy Development | 3 |
| ED 396 School and Society | 3 |
| ENGL 282 Children's Literature | 4 |
| MATH 150 Structure of Arithmetic | 4 |
| MUS 141 Music in Special Education | 3 |
| MUS 240 Music for the Classroom Teacher | 3 |
| PEPR 340 Physical Education for the Elementary Classroom Teacher | 2 |
| PSY 100 General Psychology | 3 |

Intern Teaching (22 hrs.)

ED 471 Intern Teaching: Elementary/Middle School | 10 |
ED 410 Seminar in Education | 2 |
SPED 474 Intern Teaching in Special Education: Elementary Emotionally Impaired | 10 |

Internal Teaching (22 hrs.)

ED 471 Directed Teaching: Elementary/Middle School | 10 |
ED 410 Seminar in Education | 2 |
SPED 474 Intern Teaching in Special Education: Secondary Emotionally Impaired | 10 |
ED 352  Literacy and Languages  
Art in the Content Areas  
---  3
ED 395  School and Society  
---  3
ENGL 282  Children's Literature  
---  4
MATH 150  Structure of Arithmetic  
---  4
MUS 141  Music in Special Education  
OR

MUS 240  Music for the Classroom  
Teacher  
---  3
PEPR 340  Physical Education for the  
Elementary Classroom  
Teacher  
---  2
PSY 100  General Psychology  
---  3

Course Requirements in Visually Impaired Major, Elementary Emphasis (32 hrs.)

A minimum grade of "C" must be earned in all courses listed as part of the Endorsement in Mentally Impaired, elementary emphasis. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements.

NOTE: Students must see a department advisor regarding the sequence in which the courses must be completed.

SPED 506  Teaching Practicum in Special Education: Secondary  
---  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 536  Curriculum and Instruction in Special Education: Elementary  
---  3
SPED 537  Technology in Special Education  
---  3
SPED 538  Introduction to Classroom Management  
---  3
SPED 540  Consultation and Communication in Special Education  
---  3
SPED 541  Program Practicum in Special Education: MR  
---  1
SPED 542  Education of Learners with Moderate and Severe Retardation  
---  3
SPPA 200  Communication Disorders and Sciences  
---  3

Intern Teaching (22 hrs.)

ED 471  Intern Teaching: Elementary/Middle School  
---  10
ED 410  Seminar in Education  
---  2
SPED 474  Intern Teaching in Special Education: Elementary/Visionally Impaired  
---  10

ENDORSEMENT — VISUALLY IMPAIRED—K-12

SECONDARY EMPHASIS: For the preparation of teachers who wish to work primarily with secondary level students with visual impairments.

Curriculum Requirements (34 hrs.)

ART 200  The Creative Process through Art  
---  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  Literacy Development  
---  3
ED 395  School and Society  
---  3
ENGL 282  Children's Literature  
---  4
MATH 150  Structure of Arithmetic  
---  4
MUS 141  Music in Special Education  
OR

MUS 240  Music for the Classroom  
Teacher  
---  3
PEPR 340  Physical Education for the  
Elementary Classroom  
Teacher  
---  2
PSY 100  General Psychology  
---  3

Course Requirements in Visually Impaired Major, Secondary Emphasis (32 hrs.)

A minimum grade of "C" must be earned in all courses listed as part of the Endorsement in Visually Impaired, secondary emphasis. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements.

NOTE: Students must see a department advisor regarding the sequence in which the courses must be completed.

SPED 506  Teaching Practicum in Special Education: Secondary  
---  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  Consultation and Communication in Special Education  
---  3
BLRH 590  Physiological and Function of the Eye  
---  2
SPED 591  Braille and Other Communication Methods  
---  2
BLRH 592  Introduction to the Education of Visually Impaired Children  
---  2
SPED 593  Methods and Techniques of Teaching Braille and Other Areas of Communication  
---  3
BLRH 594  Principles of Orientation and Mobility  
---  3

Intern Teaching (22 hrs.)

ED 471  Intern Teaching: Elementary/Middle School  
---  10
ED 410  Seminar in Education  
---  2
SPED 474  Intern Teaching in Special Education: Elementary/Visionally Impaired  
---  10

ENDORSEMENT — VISUALLY IMPAIRED—K-12

SECONDARY EMPHASIS: For the preparation of teachers who wish to work primarily with secondary level students with visual impairments.

Curriculum Requirements (34 hrs.)

ART 200  The Creative Process through Art  
---  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 352  Literacy and Languages Arts in the Content Areas  
---  3
ED 395  School and Society  
---  3
ED 410  Seminar in Education  
---  2
ED 471  Intern Teaching: Elementary/Middle School  
---  10
ENGL 282  Children's Literature  
---  4
MATH 150  Structure of Arithmetic  
---  4

MUS 240  Music in Special Education  
---  3
MUS 306  Music for the Classroom  
Teacher  
---  3
PEPR 340  Physical Education for the  
Elementary Classroom  
Teacher  
---  2
PSY 100  General Psychology  
---  3

Course Requirements in Visually Impaired Major, Secondary Emphasis (32 hrs.)

A minimum grade of "C" must be earned in all courses listed as part of the Endorsement in Visually Impaired, secondary emphasis. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements.

NOTE: Students must see a department advisor regarding the sequence in which the courses must be completed.

SPED 506  Teaching Practicum in Special Education: Secondary  
---  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  Consultation and Communication in Special Education  
---  3
BLRH 590  Physiological and Function of the Eye  
---  2
SPED 591  Braille and Other Communication Methods  
---  2
BLRH 592  Introduction to the Education of Visually Impaired Children  
---  2
SPED 593  Methods and Techniques of Teaching Braille and Other Areas of Communication  
---  3
BLRH 594  Principles of Orientation and Mobility  
---  3

Intern Teaching (22 hrs.)

ED 471  Intern Teaching: Elementary/Middle School  
---  10
ED 410  Seminar in Education  
---  2
SPED 474  Intern Teaching in Special Education: Secondary/Visionally Impaired  
---  10

Special Education Courses (SPED)

SPED 474  Intern Teaching in Special Education  
---  10

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 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 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 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 modifications, and available resources and services 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 an 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 532 Assessment, Teaching, and Curriculum Adaptations for Infants, Preschoolers, and Children Who Are Visually Impaired
3 hrs.
This course is designed to examine how to assess, teach, and modify existing curriculum for infants, preschoolers, and young school-aged children who are blind. This course combines these three elements and prepares teachers for the role of itinerant or classroom teacher, as well as for the role of consultant for parents and other teachers. Prerequisite: Consent of department and concurrent enrollment in SPED 504/534 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 and preadolescent 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 related to 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 innovations; 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 outcomes 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 570 Introduction to Emotional Impairments
3 hrs.
This course provides an introduction to the field of emotional impairments. Historical perspectives, definitions, service delivery systems, evaluation procedures, and major issues are examined. Prerequisite: Consent of department and concurrent enrollment in SPED 575.

SPED 571 Program Practicum in Special Education: EI
1 hr.
This course provides the student with guided observations of school and community agencies serving individuals with emotional impairments. It provides and awareness of a...
FAMILY AND CONSUMER SCIENCES

Linda L. Dannison, Chair
Max E. Benne
Karen R. Blasue
Marlene R. Bruu
Eileen Buckley
E. Bryce Dickey
Barbara J. Frazier
Marge J. Geasler
Mary Jo Peterson
Maia Petersen
Anzoo Rojhan
Nancy H. Strinhous
Linda G. Strickland
Darrell B. Thomas
Patricia B. Viard
Carl A. Wotzsky
Richard W. Zinser

The mission of the Department of Family and Consumer Sciences is to provide integrative educational programs and conduct research focused on reciprocal relationships among individual, family, and the social 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
- Home Economics Education
- Industrial Technology
- Interior Design
- Occupational Education Studies
- Secondary Education in Business
- Secondary Education in Marketing
- Technology and Design
- Textile and Apparel Studies—Merchandising
- Emphasis
- Textile and Apparel Studies—Design and Development

Minors offered in the department include:

- Family Life Education
- Industrial Technology
- Occupational Child Care
- Occupational Foods
- Secondary Education in Marketing
- Textile and Apparel Merchandising
- Vocational-Technical Drafting
- Graphic Arts
- Metalworking
- Woodworking
- Academic Advising
- College of Education Undergraduate Advising
- 2504 Sangren Hall

Advisors are available to assist in individual program planning. Recommend electives appropriate to a student's educational objectives, and help solve academic problems. Course and regular planning with an advisor is critical to program completion in a timely manner. Substitutions and transfer credit must be approved by an advisor.

Work Experience Programs

Programs offered in dietetics, family studies, food service administration, interior design, and textile and apparel 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.
5. Electives — As needed for graduation total of 122 hours.

**Family Studies (FST)**

**Bachelor of Science**

The family studies curriculum is an interdisciplinary program designed with flexibility for students who desire leadership positions in public and private programs related to children and families. This program is also intended for those desiring to pursue a Master's degree program in home economics, counseling, and other related fields. A minimum of 122 hours is required for this curriculum.

1. **General Education Requirements — 37 hours**
   - CHEM 371 Introduction to Organic Chemistry Lab I ... 1
   - FCS 100 Career Seminar—FST 1
   - FCS 202 Field Experience 2
   - FCS 209 Consumer Education 3
   - FCS 210 Human Sexuality 3
   - FCS 214 Human Growth and Development 3
   - FCS 215 Adolescent Development 3
   - FCS 266 Food and Society 3
   - FCS 318 Intimate Relationships 3
   - FCS 410 Teaching Sex Education 3
   - FCS 413 Marriage and Family in a Multicultural Society 3
   - FCS 415 Effective Parenting* 3
   - *Students in the family studies major will satisfy the Baccalaureate Writing requirement by successfully completing FCS 415.

2. **Required Core Courses — 30 hours**
   - FCS 160 Introduction to Interiordesign 3
   - FCS 165 Food Science Principles 3
   - FCS 202 Field Experience 3
   - FCS 205 Topics in FCS — Breads 1
   - FCS 205 Topics in FCS — Catering 1
   - FCS 225 Computer Applications 3
   - FCS 260 Nutrition 3
   - FCS 368 Quantity Foods 4
   - FCS 466 Institutional Management 4
   - FCS 468 Advanced and Experimental Foods* 4
   - FCS 590 Projects/Problems in FCS 3
   - *Students in the food service administration major will satisfy the Baccalaureate Writing requirement by successfully completing FCS 468.

3. **Required Related Courses — 31 hours**
   - CHEM 110 General Chemistry I 3
   - and CHEM 111 General Chemistry II laboratory 1
   - BIOS 112 Principles of Biology 4
   - BIOS 232 Microbiology and Infectious Diseases 4
   - ECON 201 Principles of Microeconomics 3
   - ECON 202 Principles of Macroeconomics 3
   - IME 102 Technical Communications 3
   - MATH 110 Algebra I 3
   - MATH 116 Finite Mathematics with Applications 3
   - MGMT 352 Human Resource Management 3
   - OR
   - FCS 100 Career Seminar — DI/FSA .. 1
   - FCS 154, and 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 elect to reapply and participate in portfolio review again the following winter. See the FCS academic advisor for specifics.

4. **Related Electives — Choose 21 hours**
   - FCS 150 Introduction to Interior Design 3
   - FCS 209 Consumer Education 3
   - FCS 429 Internship 3-6
   - ACTY 210 Principles of Accounting I 3
   - ACTY 211 Principles of Accounting II 3
   - BIS 340 Principles of Business Communication 3
   - FCL 320 Business Finance 3
   - FCL 380 Legal Environment 3
   - FCL 382 Business Law 3
   - MATH 216 Business Statistics 3
   - MGMT 210 Introduction to Business Management 3
   - MGMT 300 Fundamentals of Management 3
   - MKTG 250 Marketing Principles 3

5. **Electives — As needed for graduation total of 122 hours.**

**Food Service Administration (FSA)**

**Bachelor of Science Degree**

The food service administration curriculum is specifically oriented for in-depth study of foods in relation to the business field. Students may pursue supervisory/managerial careers in commercial food institutions in the equipment and aesthetic skills in the development of spaces for living, working, and/or relaxation. A minimum of 122 hours is required for this curriculum.

1. **General Education Requirements — 37 hours**

2. **Required Core Courses — 30 hours**
   - FCS 100 Career Seminar—DI/FSA 1
   - FCS 165 Food Science Principles 3
   - FCS 202 Field Experience 3
   - FCS 205 Topics in FCS — Breads 1
   - FCS 205 Topics in FCS — Catering 1
   - FCS 225 Computer Applications 3
   - FCS 260 Nutrition 3
   - FCS 368 Quantity Foods 4
   - FCS 466 Institutional Management 4
   - FCS 468 Advanced and Experimental Foods* 4
   - FCS 590 Projects/Problems in FCS 3
   - *Students in the food service administration major will satisfy the Baccalaureate Writing requirement by successfully completing FCS 468.

3. **Required Related Courses — 31 hours**
   - CHEM 110 General Chemistry I 3
   - and CHEM 111 General Chemistry II laboratory 1
   - BIOS 112 Principles of Biology 4
   - BIOS 232 Microbiology and Infectious Diseases 4
   - ECON 201 Principles of Microeconomics 3
   - ECON 202 Principles of Macroeconomics 3
   - IME 102 Technical Communications 3
   - MATH 110 Algebra I 3
   - MATH 116 Finite Mathematics with Applications 3
   - MGMT 352 Human Resource Management 3
   - OR
   - FCS 100 Career Seminar — DI/FSA .. 1
   - FCS 154, and 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 elect to reapply and participate in portfolio review again the following winter. See the FCS academic advisor for specifics.

4. **Related Electives — Choose 21 hours**
   - FCS 150 Introduction to Interior Design 3
   - FCS 209 Consumer Education 3
   - FCS 429 Internship 3-6
   - ACTY 210 Principles of Accounting I 3
   - ACTY 211 Principles of Accounting II 3
   - BIS 340 Principles of Business Communication 3
   - FCL 320 Business Finance 3
   - FCL 380 Legal Environment 3
   - FCL 382 Business Law 3
   - MATH 216 Business Statistics 3
   - MGMT 210 Introduction to Business Management 3
   - MGMT 300 Fundamentals of Management 3
   - MKTG 250 Marketing Principles 3

5. **Electives — As needed for graduation total of 122 hours.**

The program is accredited by FIDER (Foundation for Interior Design Education Research).

**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 157, FCS 220, FCS 249, FCS 251, FCS 254, and 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 elect to reapply and participate in portfolio review again the following winter. See the FCS academic advisor for specifics.

A minimum of 122 hours is required for this curriculum.

1. **General Education/Liberal Arts Requirements — 37 hours**

Courses below with an asterisk (*) immediately following the course number apply toward General Education; courses with a double asterisk (**) count toward Liberal Arts.

2. **Required Core Courses — 54 hours**
   - FCS 150 Introduction to Interior Design 3
   - FCS 156 Design Fundamentals 3
   - FCS 157 Sketching for Interior Designers 3
   - FCS 202 Field Experience 3
   - FCS 220 Textiles 3
   - FCS 249 Residential Architectural Design 3
   - FCS 250 Interiors CADD Applications 3
   - FCS 251 Period Interiors I 3
   - FCS 252 Period Interiors II 3
   - FCS 254 Interior Design Materials 3
   - FCS 255 Lighting for Interiors 3
   - FCS 259 Studio I 3
   - FCS 350 Textiles for Interiors* 3
   - FCS 351 Studio II 3
   - FCS 352 Professional Practices 3
   - FCS 359 Studio III 3
   - FCS 451 Studio IV 3
   - FCS 459 Studio V 3
   - *Students in the interior design major will satisfy the Baccalaureate Writing requirement by successfully completing FCS 350.

3. **Required Related Courses — 39 hours**
   - CMD 131 Introduction to Construction Environment 3
   - CMD 149 Introduction to Architectural Drawing 3
   - CMD 330 Wood/Materials/Interior Design 3
   - FCS 225 Computer Applications 3
   - CS 105 Introduction to Computers 3
   - ECON 201 Principles of Microeconomics 3
   - ART 130 Studio Experience (3-D) OR
   - ART 231 Sculpture 3
   - ART 220 History of Art 3
   - ART 221 History of Art 3
   - MKTG 250 Marketing Principles 3
   - COM 104** Public Speaking 3
   - IME 102 Technical Communications 3
   - MGMT 210 Small Business Management OR
   - MGMT 300 Fundamentals of Management 3
   - ACTY 210 Principles of Accounting I 3

4. **Electives — As needed for graduation total of 122 hours.**
Bachelor of Science

The Textile and Apparel Studies major has two emphases: The Merchandising Emphasis and the Design and Development Emphasis. The merchandising emphasis is designed to prepare students for careers in retailing and related fields. The four-year program includes studies in merchandising, marketing, and management. A minor is optional, though many students select a marketing or management minor. Other related fields can also be selected as minor studies, e.g., communication, journalism, or language.

Students who graduate with a merchandising emphasis may begin a career in one of many entry-level management positions in department, specialty, discount or boutique stores. Career opportunities also exist in the apparel and textile wholesaling fields.

The design and development emphasis is created 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 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 Intercontinental University in London during their junior year.

MERCHANDISING EMPHASIS

Candidates for the Bachelor of Science degree with the Merchandising Emphasis must complete the following program of 122 semester hours.

1. General Education Requirements — 37 hours
2. Required Core Courses — 18 hours
   - FCS 105 Introduction to Textiles and Design
   - MGMT 352 Human Resource Management
   - MKTG 250 Marketing Principles
   - MKTG 360 Professional Selling
   - MKTG 374 Advertising
   - FCS 320 Visual Merchandising

*Students in the merchandising emphasis will satisfy the Baccalaureate Writing requirement by successfully completing BIS 340.

5. Related Electives — Choose 6 hours
   - FCS 124 Apparel Construction
   - FCS 209 Consumer Education
   - FCS 230 CAD For Textiles and Apparel
   - FCS 405 Travel/Study
   - FCS 422 Apparel Manufacturing
   - FCS 522 Topics in FCS (TEX related)

6. Electives — As needed for graduation total of 122 hours.

DESIGN AND DEVELOPMENT EMPHASIS

Candidates for the Bachelor of Science degree with the Design and Development Emphasis must complete the following program of 122 semester hours.

1. General Education Requirements — 37 hours
2. Required Core Courses — 18 hours
   - CHEM 106 Textiles and Design
   - ECON 201 Principles of Economics
   - MGMT 352 Human Resource Management
   - MKTG 250 Marketing Principles
   - MKTG 360 Professional Selling
   - MKTG 374 Advertising

3. Required FCS Courses — 37 hours
   - FCS 105 Introduction to Textiles and Design
   - FCS 155 Design Principles
   - FCS 220 Textiles
   - FCS 228 Nontextile Products
   - FCS 226 Fashion/Retail Buying
   - FCS 230 CAD For Textiles and Apparel
   - FCS 320 Visual Merchandising
   - FCS 322 FlatPattern Design II
   - FCS 422 Apparel Manufacturing
   - FCS 405 Travel/Study

4. Related Electives — 6 hours
   - Select one of the following Economics courses:
     - ECON 107 Economics Issues in the U.S. Today
     - ECON 108 Contemporary International Economic Issues
   - FCS 598 Independent Study

5. Baccalaureate Writing Requirement — 3

6. Electives — As needed for graduation total of 122 hours.

Fashion Design Career Option (24 hours)

Students interested in fashion design should plan to spend their junior year at the Fashion Institute of Technology in New York City or at the Intercontinental University in London, England. Both are excellent design and merchandising colleges. The department maintains a guest student program for qualified students. The Fashion Design courses completed at either of the schools will comprise the Career Option for these students. Specific approved courses will be planned with an advisor.

5. Baccalaureate Writing Requirement — 3 hours

Minor in Textile and Apparel Merchandising

Candidates for the minor in Textile and Apparel Merchandising must complete the following program of 22 hours.

1. Required Courses — 12 hours
   - FCS 124 Apparel Construction
   - FCS 209 Consumer Education
   - FCS 230 CAD For Textiles and Apparel
   - FCS 405 Travel/Study
   - FCS 422 Apparel Manufacturing
   - FCS 522 Topics in FCS (TEX related)

2. Related Courses — 4 hours
   - FCS 202 Flat Pattern Design I
   - FCS 230 CAD For Textiles and Apparel
   - FCS 320 Visual Merchandising
   - FCS 322 FlatPattern Design II

Computer Aided Design Career Option (32 hours)

This option allows the student to blend knowledge of fibers, fabrics, pattern making, and construction techniques with the principles of computer graphics technology and software development in CAD/CAM systems operations. The graduate may find employment in the apparel, furniture, or automotive industries in computerized design, pattern development, layout, cutting, and construction procedures.

Computer Aided Design Career Option (32 hours)

Students who choose the Computer Aided Design Career Option will satisfy the Baccalaureate Writing Requirement by successfully completing IME 316 Report Preparation.

Minor in Textile and Apparel Merchandising

Candidates for the minor in Textile and Apparel Merchandising must complete the following program of 22 hours.

1. Required Courses — 12 hours
   - FCS 124 Apparel Construction
   - FCS 209 Consumer Education
   - FCS 230 CAD For Textiles and Apparel
   - FCS 405 Travel/Study
   - FCS 422 Apparel Manufacturing
   - FCS 522 Topics in FCS (TEX related)

   Computer Aided Design Career Option (32 hours)

   This option allows the student to blend knowledge of fibers, fabrics, pattern making, and construction techniques with the principles of computer graphics technology and software development in CAD/CAM systems operations. The graduate may find employment in the apparel, furniture, or automotive industries in computerized design, pattern development, layout, cutting, and construction procedures.

   Students who choose the Computer Aided Design Career Option will satisfy the Baccalaureate Writing Requirement by successfully completing IME 316 Report Preparation.

   Students who choose the Fashion Design Career Option will satisfy the Baccalaureate Writing Requirement by successfully completing BIS 340 Principles of Business Communication.

   6. Electives — As needed for graduation total of 122 hours.
**Career and Technical Education Curricula**

Career and technical education is a curriculum that prepares students to qualify as teachers in Michigan middle and junior high schools, and area technical centers in non-vocational and vocational education subject areas. Areas of career and technical education offered by the department that do not require vocational endorsements include majors in industrial technology, technology and design, and secondary education in business, as well as minors in industrial technology and family life education. The program requirements are listed below under Non-Vocational Majors and Minors.

**Non-Vocational Majors**

The requirements for each of the three non-vocational majors are described below. The non-vocational majors are Industrial Technology, Secondary Education in Business, and Technology and Design.

**Industrial Technology (IDT)**

**Bachelor of Science**

The Industrial Technology group major is designed to prepare teachers of industrial technology (formerly known as industrial arts) for middle, junior, and senior high schools. The student must complete the group major in Industrial Technology and an approved teachable minor offered for Secondary Education Curriculum.

1. Minimum hours required for this curriculum — 135 hrs.
2. General Education Requirements — 37 hrs.
3. MATH 110 and 111 (or equivalents) are required — 6 hrs.
4. Teaching major from the following courses — 36 hrs.
   - FCS 209 Consumer Education
   - FCS 225 Computer Applications
   - CTE 305 Career and Employability Skills
   - ECON 201 Principles of Microeconomics
   - BIS 260 Programming and Applications with Microcomputers
   - ACTY 210 Principles of Accounting I
   - ACTY 211 Principles of Accounting II
   - CTE 386 Advanced Office Systems
   - BIS 388 Records Management
   - ECE 100 Fundamentals of Circuits and Electronics

5. Approved Minor for Secondary Education Curriculum — 20 hours

   - FCS 214 Human Growth and Development

   OR

   - an approved alternative course

   - ED 305 K-12 Content Literacy
   - CTE 342 Curriculum Development in CTE
   - CTE 344 Teaching Methods in CTE
   - CTE 345 Student Assessment and Management
   - CTE 510 Special Populations
   - CTE 512 Principles of CTE


**Technology and Design (TAD)**

**Bachelor of Science**

The Technology and Design group major is designed to prepare teachers of technology education teachers for middle, junior, and senior high schools. The student must complete the group major in Technology and Design and an approved teachable minor offered for Secondary Education Curriculum.

1. Minimum hours required for this curriculum — 135 hrs.
2. General Education Requirements — 37 hrs.
3. MATH 110 and 111 (or equivalents) are required — 6 hrs.
4. Teaching major from the following courses — 37 hrs.
   - AVS 280 Transportation
   - CMD 131 Introduction to Building Practices
   - CMD 149 Introduction to Architectural Drawing
   - CMD 133 Wood Furniture Design
   - CMD 230 Advanced Woodworking Design
   - ECE 100 Fundamentals of Circuits and Electronics

5. Approved Minor for Secondary Education Curriculum — 20 hours

6. Bachelor of Science in Business (SEB)

**Bachelor of Science**

The Secondary Education in Business group major is designed to prepare teachers for non-vocational business education subjects in the middle, junior, and senior high schools. The student must complete the group major in Secondary Education in Business and an approved teachable minor offered for Secondary Education Curriculum.

1. Minimum hours required for this curriculum — 126 hrs.
2. General Education Requirements — 37 hrs.
3. Teaching major from the following courses — 36 hrs.
   - FCS 209 Consumer Education
   - FCS 225 Computer Applications
   - CTE 305 Career and Employability Skills
   - ECON 201 Principles of Microeconomics
   - BIS 260 Programming and Applications with Microcomputers
   - ACTY 210 Principles of Accounting I
   - ACTY 211 Principles of Accounting II
   - CTE 386 Advanced Office Systems
   - BIS 388 Records Management
   - ECE 100 Fundamentals of Circuits and Electronics

4. Bachelor of Science in Environmental Technology — 36 hrs.

5. Approved Minor for Secondary Education Curriculum — 20 hours

6. Bachelor of Science in Environmental Technology: Policy, Perils, and Promise — 38 hrs.

**Bachelor of Science in Information Technology**

The Bachelor of Science in Information Technology (B.S.I.T.) is a four-year program that prepares students for careers in the field of information technology. The program offers a broad range of courses in computer science, information systems, and related fields. Students have the opportunity to specialize in areas such as software engineering, systems analysis, and network administration. The curriculum emphasizes both theoretical knowledge and practical skills, preparing students for success in the rapidly evolving field of information technology.

**Curriculum Requirements**

- **Core Courses** (Total: 48 credits)
  - Introduction to Computing Concepts
  - Programming Fundamentals
  - Data Structures
  - Database Systems
  - Computer Networks
  - Operating Systems
  - Introduction to Software Engineering

- **Elective Courses** (Total: 12 credits)
  - Students must select 12 credits from the following options:
    - Advanced Programming
    - Computer Security
    - Artificial Intelligence
    - Mobile Computing

- **Capstone Project**

- **General Education Requirements**
  - Humanities and Social Sciences
  - Natural Sciences
  - Mathematical Sciences
  - Foreign Language

**Graduation Requirements**

- A minimum of 128 credits is required for graduation.
- A minimum GPA of 2.0 is required for graduation.
- Students must complete a capstone project approved by their advisor.
- All courses in the major must be completed with a grade of C- or better.

**Application Process**

- Admission to the B.S.I.T. program is competitive and requires an application process.
- Applicants must submit a completed application, transcripts, and a personal statement outlining their interest in the field of information technology.
- Admission is based on academic performance and potential for success in the program.

**Career Outcomes**

Graduates of the B.S.I.T. program are well-prepared for careers in various industries, including software development, information systems management, and IT consulting. Many graduates also pursue further education in graduate programs in computer science, information systems, or related fields.

**Future Trends**

The field of information technology continues to evolve rapidly, with increasing demand for professionals with strong technical skills and the ability to adapt to new technologies. Graduates of the B.S.I.T. program are well-positioned to meet this demand and contribute to the growth of the technology sector.

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*Prerequisite for program: Keyboarding (or BIS 182 Keyboarding Content)*

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**Approved Minor for Secondary Education Curriculum — 20 hours**

** Bachelor of Science in Business (SEB)**

**Bachelor of Science**

The Secondary Education in Business group major is designed to prepare teachers for non-vocational business education subjects in the middle, junior, and senior high schools. The student must complete the group major in Secondary Education in Business and an approved teachable minor offered for Secondary Education Curriculum.

1. Minimum hours required for this curriculum — 126 hrs.
2. General Education Requirements — 37 hrs.
3. MATH 110 and 111 (or equivalents) are required — 6 hrs.
4. Teaching major from the following courses — 36 hrs.
   - FCS 209 Consumer Education
   - FCS 225 Computer Applications
   - CTE 305 Career and Employability Skills
   - ECON 201 Principles of Microeconomics
   - BIS 260 Programming and Applications with Microcomputers
   - ACTY 210 Principles of Accounting I
   - ACTY 211 Principles of Accounting II
   - CTE 386 Advanced Office Systems
   - BIS 388 Records Management
   - ECE 100 Fundamentals of Circuits and Electronics

5. Approved Minor for Secondary Education Curriculum — 20 hours


**Bachelor of Science in Environmental Technology**

The Bachelor of Science in Environmental Technology (B.S. Env Tech) is a four-year program that prepares students for careers in the field of environmental technology. The program emphasizes the integration of scientific knowledge with practical applications, with a focus on sustainable practices and environmental stewardship.

**Curriculum Requirements**

- **Core Courses** (Total: 48 credits)
  - Introduction to Environmental Science
  - Environmental Chemistry
  - Environmental Biology
  - Environmental Policy
  - Environmental Technology Fundamentals

- **Elective Courses** (Total: 12 credits)
  - Students must select 12 credits from the following options:
    - Advanced Environmental Chemistry
    - Environmental Engineering
    - Environmental Law

- **Capstone Project**

- **General Education Requirements**
  - Humanities and Social Sciences
  - Natural Sciences
  - Mathematical Sciences
  - Foreign Language

**Graduation Requirements**

- A minimum of 128 credits is required for graduation.
- A minimum GPA of 2.0 is required for graduation.
- Students must complete a capstone project approved by their advisor.
- All courses in the major must be completed with a grade of C- or better.

**Application Process**

- Admission to the B.S. Env Tech program is competitive and requires an application process.
- Applicants must submit a completed application, transcripts, and a personal statement outlining their interest in the field of environmental technology.
- Admission is based on academic performance and potential for success in the program.

**Career Outcomes**

Graduates of the B.S. Env Tech program are well-prepared for careers in various industries, including environmental consulting, pollution control, and waste management. Many graduates also pursue further education in graduate programs in environmental science, policy, or related fields.

**Future Trends**

The field of environmental technology continues to be an area of increasing demand, with opportunities for professionals in areas such as renewable energy, sustainable building design, and green technology. Graduates of the B.S. Env Tech program are well-positioned to meet this demand and contribute to the growth of the environmental technology sector.

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*Prerequisite for program: Keyboarding (or BIS 182 Keyboarding Content)*
Non-Vocational Minors
The requirements for each of the two non-vocational minors are described below. The non-vocational minors are Family Life Education and Industrial Technology.

Family Life Education
Required Courses — 24 hours
FCS 209 Consumer Education 3
FCS 210 Introduction to Human Sexuality 3
FCS 215 Adolescent Development 3
FCS 266 Food and Society 3
FCS 318 Intimate Relationships 3
FCS 410 Teaching of Sex Education in the School 3
FCS 415 Effective Parenting 3
FCS 124 Apparel Construction 3
FCS 524 Socio/Psych Aspects of Clothing 3

Industrial Technology
Required Courses — 24 hours
CMD 131 Introduction to Building Practices 3
CMD 149 Introduction to Architectural Drawing 3
CMD 152 Wood Furniture Design 3
CMD 230 Advanced Woodworking Design 3
ECE 100 Fundamentals of Circuits and Electronics 3
ECE 101 Fundamentals of Electronics and Machines 3
IME 142 Engineering Graphics 3
IME 150 Introduction to Manufacturing 3

Vocational Majors
The requirements for each of the three vocational majors are described below. The vocational majors are Home Economics Education, Secondary Education in Business, and Secondary Education in Marketing.

Home Economics Education (HEE)
Bachelor of Science
The Home Economics group major is designed to prepare teachers for home economics-related subjects in middle, junior, and senior high schools. The student must complete the major in Home Economics Education and an approved teachable minor offered for Secondary Education Curriculum.

1. Minimum hours required for this curriculum — 126 hrs.
2. General Education Requirements — 37 hrs.
   - Group Major requirements from the following courses — 96 hrs.
   - FCS 105 Food Science Principles 3
   - FCS 210 Human Sexuality 3
   - FCS 215 Adolescent Development 3
   - FCS 260 Nutrition 3
   - FCS 318 Intimate Relationships 3

Secondary Education in Business (SEB)
Bachelor of Science
The Secondary Education in Business group major is designed to prepare teachers for vocational education subjects in area technical centers and comprehensive high schools. The student must complete the major in Secondary Education in Business and an approved teachable minor offered for Secondary Education Curriculum.

1. Minimum hours required for this curriculum — 126 hrs.
2. General Education Requirements — 37 hrs.
3. Group Major requirements from the following courses — 36 hrs.
   - FCS 209 Consumer Education 3
   - FCS 225 Computer Applications 3
   - CTE 305 Career and Employability Skills 3
   - COM 170 Interpersonal Communication 3
   - BIS 260 Microcomputer Business Applications 3
   - BIS 350 Management Information Systems 3
   - ACTY 210 Principles of Accounting I 3
   - ACTY 211 Principles of Accounting II 3
   - FCL 380 Legal Environment 3

Select 6 hours from the following:
FCS 410 Teaching Sex Education in the Schools 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
CTE 305 Career and Employability Skills 3

Select an approved alternative course
ED 305 K-12 Content Literacy 3
CTE 342 Curriculum Development in CTE* 3
CTE 344 Teaching Methods in CTE 3
CTE 348 Student Assessment and Management 3
CTE 510 Special Populations in CTE 3
CTE 512 Principles of CTE 3

Certification. Up to 2000 hours of the required 4000 can be obtained through university-supervised internship or work experience.

Secondary Education in Marketing (SEM)
Bachelor of Science
The Secondary Education in Marketing group major is designed to prepare teachers for vocational marketing subjects in area technical centers and comprehensive high schools. The student must complete the major in Secondary Education in Marketing and an approved teachable minor offered for Secondary Education Curriculum.

1. Minimum hours required for this curriculum — 126 hrs.
2. General Education Requirements — 37 hrs.
3. Group Major requirements from the following courses — 36 hrs.
   - FCS 401 Advanced Office Systems 3
   - FCS 388 Records Management 3
   - BIS 456 Office Management 3
   - CTE 182 Keyboarding (or an approved alternative course)
ED 305 K-12 Content Literacy 3
CTE 342 Curriculum Development in CTE* 3
CTE 344 Teaching Methods in CTE 3
CTE 348 Student Assessment and Management 3
CTE 510 Special Populations in CTE 3
CTE 512 Principles of CTE 3

Certification. Up to 2000 hours of the required 4000 can be obtained through university-supervised internship or work experience.
5. Professional Education courses — 21 hrs.
   FCS 214 Human Growth and Development ............... 3
   OR
   an approved alternative course

6. Directed Internship — 12 hrs.
   CTE 410 Seminar in Education ............... 2
   CTE 475 Intern Teaching in CTE ............... 10

7. Related Work Experience.
A total of 4000 hours of recent and relevant work experience is required for Vocational Certification. Up to 2000 hours of the required 4000 can be obtained through university-supervised internship or work experience.

Vocational Minors
The requirements for each of the vocational minors are described below. The vocational minors are Occupational Child Care, Occupational Foods, Secondary Education in Marketing, and Vocational-Technical (Drafting, Graphic Arts, Metalworking, and Woodworking).

Major in non-vocational teacher preparation programs may also earn one of the vocational minors in consultation with the advisor.

Occupational Child Care

1. Required Courses — 23-24 hours
   FCS 210 Introduction to Human Sexuality ............... 3
   FCS 214 Human Growth and Development ............... 3
   PEPR 276 Outdoor Education ....................... 2
   OR
   PEPR 170 Introduction to Recreation ............... 3
   ED 266 Food and Society ....................... 3
   ED 350 Young Children, Family and Society ............... 3
   FCS 415 Effective Parenting or
   ED 508 Seminar in Parent Education ............... 3
   FCS 575 Administration of Child Development Centers ............... 3
   FCS 202 Field Experience ....................... 3

2. Related Work Experience.
A total of 4000 hours of recent and relevant work experience in the child care related industries (within the past 5 years) is required for vocational certification. A total of 2000 of these hours may be completed in an equivalent directed supervised enrollment in FCS 202.

Occupational Foods

1. Required Courses — 25 hours
   FCS 165 Food Science Principles ............... 3
   FCS 202 Field Experience ....................... 4
   FCS 260 Nutrition ....................... 3
   FCS 368 Quantity Foods ....................... 4
   FCS 466 Institutional Management ............... 4
   FCS 598 Independent Study (Foods) ............... 1
   CTE 342 Curriculum Development in Career and Technical Education ............... 3
   CTE 510 Special Populations in Career and Technical Education ............... 3

Elective courses, if needed, to complete the 25 semester hours:
   ACTY 210 Principles of Accounting ............... 3
   MGMT 352 Personnel Management ............... 3
   ECON 201 Principles of Microeconomics ............... 3
   PSY 100 General Psychology ............... 3
   SOC 200 Principles of Sociology ............... 3
   CTE 512 Principles of Career and Technical Education ............... 3

2. Related Work Experience.
A total of 4000 hours of recent and relevant work experience in the food service industry (within the past 5 years) is required for vocational certification. A total of 2000 of these hours may be completed in an equivalent directed supervised enrollment in FCS 202.

Secondary Education in Marketing

1. Required Courses — 24 hours
   FCS 330 Visual Merchandising ............... 3
   ECON 201 Principles of Microeconomics ............... 3
   ACTY 210 Principles of Accounting ............... 3
   MKTG 250 Marketing ....................... 3
   MKTG 360 Professional Selling ............... 3
   MKTG 372 Purchasing Management ............... 3
   OR
   MKTG 376 Sales Administration .................... 3
   MKTG 374 Advertising and Promotion ............... 3
   OR
   MKTG 376 Sales Administration ............... 3

2. Related Work Experience.
A total of 4000 hours of recent and relevant work experience is required for vocational certification. A total of 2000 of these hours may be completed through university-supervised internship or work experience.

Vocational-Technical Drafting

1. Required Courses — 20 hours
   CMD 149 Introduction to
   Architectural Drafting ............... 3
   CS 104 Introduction to C/C++ .................... 2
   IME 142 Engineering Graphics ............... 3
   IME 150 Introduction to Manufacturing ............... 3
   IME 154 Machining Fundamentals ............... 3
   IME 246 Introduction to CAD ............... 3
   IME 358 Computer Aided Manufacturing ............... 3

2. Related Work Experience.
This minor requires an Industrial Technology major plus 4000 clock hours of recent and relevant work experience or 2000 clock hours plus 400 planned hours in FCS 202 or 622.

Graphic Arts

1. Required Courses — 21 hours
   PAPR 151 Fundamentals of Graphic Arts ............... 3
   PAPR 150 Imaging Systems ............... 3
   PAPR 215 Introduction to Art ............... 3
   PAPR 250 Lithographic Technology ............... 3

2. Related Work Experience.
This minor requires an Industrial Technology major plus 4000 clock hours of recent and relevant work experience or 2000 clock hours plus 400 planned hours in FCS 202 or 622.

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 126 The Fashion Industry (3-0)
3 hrs. Fall
An introduction to the manufacturing and merchandising of apparel. This course includes the business, environment, movement, and market control of fashion. An emphasis on designers, specialty fashion retailers, trends and auxiliary services is explored.
FCS 160 Introduction to Interior Design (2-3)
3 hrs. Fall, Winter
Basic study of the elements and principles of designing and furnishing interiors.

FCS 165 Design Principles
3 hrs. Fall, Winter
Introduction to basic principles and elements of design and color fundamentals, with application particularly in the fields of fashion and textiles.

FCS 156 Design Fundamentals (2-4)
3 hrs. Fall, Winter
A focused introductory study of the basic elements and principles of design for the interior design major. Emphasis will be placed on concept development, color theory and presentation skills.

FCS 157 Sketching for Interior Designers (1-6)
3 hrs. Fall
Development of freehand drawing skills pertinent to interior designers by emphasizing non-mechanical perspective, controlled line quality and presentation. Prerequisites: FCS 156 and CMD 149.

FCS 160 Introduction to Agriculture (4-0)
4 hrs. Fall, Winter
An introduction to the principles and practices of food and fiber production, and agriculture's role in today's society and economy.

FCS 165 Food Science Principles (2-3)
3 hrs. Fall
Relationship of food science principles to basic food preparation techniques. Prerequisite: CHEM 101.

FCS 202 Field Experience
1-3 hrs.
On-the-job experience under supervision of department with cooperating organizations. Written materials and performance appraisal required. This course is graded on a credit/no credit basis. Department majors only.

FCS 205 Topics in Family and Consumer Sciences
1-3 hrs. Fall, Winter, Spring
Individual topics in five/ten/fifteen week formats, ranging in 1-3 hours of credit. Student may elect up to 6 hours of credit if topics vary. Topics to be announced.

FCS 209 Consumer Education (3-0)
3 hrs. Fall, Winter
A study of the information available to consumers in our economy with emphasis on personal decision making in money management and product and services choices, and consumer protection.

FCS 210 Sex Education—An Introduction to Human Sexuality (3-0)
3 hrs. Fall, Winter, Spring
Covers various aspects of human sexuality, trends in moral values and behavior patterns, anatomy and physiology of human reproduction, and current issues in sex education.

FCS 214 Human Growth and Development (2-3)
3 hrs. Fall
A study of physical, social, emotional, and intellectual growth of young people. Three hours per week required participation and observation in youth-oriented centers. (Hours are arranged).

FCS 215 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 construction 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 (2-3)
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.

FCS 250 Interiors CAD/Applications (2-3)
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 up 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 (2-3)
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 specified 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 (1-6)
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 nutriment 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, showrooms, and special promotion. Prerequisite: FCS 155.

FCS 322 Flat Pattern Design II (5-0)
3 hrs. Winter Even Years
A study of advanced drafting techniques, including computer-aided design, employed in the flat pattern method for designing clothing. Prerequisite: FCS 222.

FCS 326 History of Costume (3-0)
3 hrs. Winter
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 120 and MKTG 250.

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, etc.
performance, and maintenance for home and office. Special attention devoted to material estimating and installation. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: FCS 150, FCS 156, FCS 220.

FCS 351 Studio II (1–6)
3 hrs. Winter
Introduces the design of the commercial environments. Prerequisites: FCS 250, FCS 259, FCS 350.

FCS 352 Professional Practices (3–0)
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 (1–6)
3 hrs. Winter
Continued exploration of the design of commercial environments with an emphasis on medium to large scale office interiors. Prerequisite: 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 high school 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 Sex 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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; FCS 202 or permission of instructor. This course is graded on a Credit/No Credit basis.

FCS 430 Fashion Retailing 3 hrs.
Capstone course for TEX majors. Students will integrate and apply principles and theories from textile and apparel, marketing and management courses to the contemporary fashion merchandising environment. Prerequisites: FCS 126, FCS 226, and MKTG 250, MGMT 300.

FCS 451 Studio IV (1–6)
3 hrs. Winter
Continues investigating the design of larger scale 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 Sandecuse Health Center's Weight Control Program. Prerequisites: FCS 260, BIOS 240, CHEM 100.

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 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.

FCS 468 Advanced and Experimental Foods (3–3)
4 hrs. Fall
Concentrated study of advanced principles of food preparation, development of experimental techniques, and opportunities for individual studies. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: CHEM 101, FCS 165.

FCS 520 Insurance Education Seminar 1–2 hrs.
Fundamental principles of consumer insurance; overview of availability; family insurance issues involving automobiles and homes (property and casualty insurance); methods of teaching insurance education in diverse curricula, review and analysis of insurance policies; and careers in insurance and the insurance industry. Variable credit: research in insurance education.

FCS 522 Topics in Family and Consumer Sciences 1–3 hrs.
A study of the current issues impacting the areas of study in Family and Consumer Sciences: dietetics and human nutrition, family life education and family and consumer sciences, textile and apparel technology, or career and technical education. Students may elect up to six (6) hours if topics vary. Topics to be announced. Prerequisite: Seniors and graduate students only.

FCS 524 The Socio-Psychological Aspects of Clothing (3–0)
3 hrs.
Study of dress and adornment as related to human behaviors. An interdisciplinary approach to clothing-related research and non-verbal communication, person perception, and group conformity.

FCS 565 Problems in Nutrition (3–0)
3 hrs. Summer
A discussion of current problems in nutrition. Not open to dietetics majors. Prerequisite: FCS 260 or equivalent.

FCS 566 Gender, Culture, and Families 3 hrs.
Study of the implications of gender and cultural orientation for family, work, social interactions and therapeutic interventions. Includes an examination of sexism and racism in the media, advertising, educational institutions, and social policies.

FCS 575 Administration of Child Development Centers 3 hrs.
Examination of day care and preschool regulations and/or requirements, and knowledge of administrative materials and duties in providing optimum growth for young children. Includes management, planning, and organizing child development centers.

FCS 590 Project/Problems in Family and Consumer Sciences Variable 1–4 hrs. Fall, Winter, Spring, Summer
Directed independent project in specialized curricula within Family and Consumer Sciences. Prerequisite: Department approval.

FCS 598 Independent Study in Family and Consumer Sciences 1–6 hrs. Fall, Spring, Summer
Directed independent advanced study in subject matter area not otherwise treated in departmental courses. Prerequisite: Department approval required prior to enrollment.

Career and Technical Education Courses (CTE)

CET 305 Career and Employability Skills 3 hrs.
Intensive investigation of career and employability skills in Career and Technical Education. Included are the concepts required to develop skills and behaviors that will prepare students for the world of work.

CET 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. This course
is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum.

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 348 Student Assessment and Management
3 hrs.
This course is designed to prepare students for the responsibilities of classroom instruction. Emphasis is placed on student classroom management, assessment, and evaluation strategies. Requires a minimum of one (1) day per week participating in a classroom. May be taken concurrently with ED 305. Prerequisites: CTE 342 and 344.

CTE 410 Seminar in Education
2 hrs.
The seminar will be directly related to the student's 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. Must be taken concurrently with CTE 410.

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.

CTE 514 Workshop in Career and Technical Education
1–3 hrs.
Investigation, research, and development of a particular topic or area of interest for career and technical education. Students may enroll for more than one topic, but in each topic only once, to a maximum of three credit hours. Prerequisite: Vocational Certification or consent.

CTE 515 Grant Writing for Career and Technical Educators
2–3 hrs.
Analysis of the grant writing process, including the identification of a sponsor, development of an idea and plan, and completion of a proposal.

CTE 542 Advanced Curriculum Development
2 hrs.
Social, political, and economic factors which influence curriculum change, curriculum innovations, trends, implementation, and evaluation.

CTE 544 Work-site Based Education Programs
3 hrs.
Study of work-site based education programs, including the organization and establishment of training programs, supervision of trainees on the job, and development of individual training plans and programs. Emphasis on establishing working relationships between school, business, and the community, including cooperative education, work experience, apprenticeship, work-study, and work exploration programs for career and technical education.

HEALTH, PHYSICAL EDUCATION, AND RECREATION

HEALTH, PHYSICAL EDUCATION, AND RECREATION

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.

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.

UNIVERSITY GENERAL EDUCATION REQUIREMENT
Each student must complete 37 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 3 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 35 credit hours (transfer hours included).
2. Completion of PEPR 150 or PEPR 155 (with a grade of "C" or better) and BIOS 112 for Health, Physical Education Teacher/Coach and Exercise Science majors and associated minors; completion of PEPR 170 (with a grade of "C" or better) for Recreation majors/minors.
3. Completion of all cognate courses required. Physical Education Teacher-Coach majors/minors and Exercise Science majors must complete BIOS 112 or SCI 170,* BIOS 211, BIOS 240, and PEPR 111. Health Education (Community or School Emphasis) majors/minors must complete BIOS 112 or SCI 170,* BIOS 211, BIOS 240, PSY 100 or PSY 150, and SOC 200.
4. Acceptance into the program will proceed throughout the year. Students meeting the qualifications stated above will be admitted immediately into HPER Department Programs. Students must be admitted into the department to enroll in courses on the "restricted list". Such courses require the prerequisites included in the HPER Department Admission Requirements.

*SCI 170—Education majors/minors, only.

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 243 Physical Education Methods: Early Elementary Movement/Physical Activities
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 317 Cardiovascular Health
PEPR 322 Physical Activity for Special Populations
PEPR 345 Nature and Bases of Motor Behavior
PEPR 346 Physical Education Methods: Special Populations
PEPR 371 Adapted and Programming Practicum
PEPR 376 Organization/Administration of Recreation I
PEPR 380 Fundamentals of Sports Injuries
PEPR 390 Physiology of Motor Activity
PEPR 399 Recreation Practicum

MAJORS

Health Education Major Curriculum

Bachelor of Science

The major in health education allows students to choose one of two professional preparation options:
1. School emphasis, 38 hours
2. Community emphasis, 45 hours

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 intern 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 REQUIREMENT

Students who choose the Health Education major—School Emphasis or Community Emphasis—will satisfy the Baccalaureate Writing Requirement by successfully completing PEPR 450.

GENERAL EDUCATION

School emphasis .................................. 40 hours
Community emphasis .............................. 37 hours

HEALTH EDUCATION—SCHOOL EMPHASIS

Required Cognates ................................. 17 hours
PSY 100 General Psychology OR
PSY 150 Introduction to Human Behavior 3
SOC 200 Principles of Sociology 3
BIOS 112 Principles of Biology 3
BIOS 211 Human Anatomy 4
BIOS 240 Human Physiology 4

HEALTH EDUCATION—COMMUNITY EMPHASIS

Required Cognates ................................. 10 hours
PSY 100 General Psychology OR
PSY 150 Intro to Human Behavior 3
SOC 200 Principles of Sociology 3
BIOS 112 Intro to Biomedical Sciences 3
BIOS 211 Human Anatomy 4
BIOS 240 Human Physiology 4

Required Courses ................................ 45 hours
PEPR 155 Foundations of Health Education 3
PEPR 181 First Aid 2
FCS 210 Sex Education 3
FCS 316 Topics in Health Education 2
FCS 331 Community Health Planning 3
FCS 338 Measurement and Evaluation in Health Education 3
FCS 412 Teaching Skills and Strategies 3
FCS 415 Cultural Dynamics of HPER 2
FCS 450 Health Education-School Emphasis majors may be selected from the following:
COM 170 Interpersonal Communication I 3
FCS 209 Consumer 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
SOC 122 Death and Dying 3
SOC 373 Sociology of Health/Illness 3
SOC 390 Marriage and Family Relations 3
SOC 412 Child Welfare 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 OR
PSY 150 Intro to Human Behavior 3
SOC 200 Principles of Sociology 3
BIOS 112 Intro to Biomedical Sciences 3
BIOS 211 Human Anatomy 4
BIOS 240 Human Physiology 4

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PEPR 155 Foundations of Health Education 3
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Required Teaching Assistant

HEALTH EDUCATION—COMMUNITY EMPHASIS

Required Cognates ................................. 10 hours
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PSY 150 Intro to Human Behavior 3
SOC 200 Principles of Sociology 3
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BIOS 240 Human Physiology 4

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SOC 122 Death and Dying 3
SOC 373 Sociology of Health/Illness 3
SOC 390 Marriage and Family Relations 3
SOC 412 Child Welfare 3
SOC 490 Social Context of Sexual Behavior 3
SOC 552 Sociology of Aging 3
Required Teaching Assistant
HEALTH, PHYSICAL EDUCATION, AND RECREATION

Elective courses may be completed toward the degree requirements as follows:

- **Health Education**
  - 3 hours
- **Physical Education**
  - 3 hours
- **Social Science**
  - 6 hours

Elective courses must be selected with the approval of the department advisor.

**Recommended Courses**

- **Health Education**
  - ED 305 K-12 Content Literacy
  - ED 395 School and Society

**Physical Education**

- **PEPR 105** Baseball/Softball/Volleyball
- **PEPR 210** Racquet Sports

**Social Science**

- **SOC 122** Introduction to Sociology
- **SOC 479** Sociology of Health

**Additional Requirements**

- **Baccalaureate Writing Requirement**
  - 3 hours
- **Required Professional Courses**
  - 15 hours
- **Required Electives**
  - 15 hours

**Required Professional Courses**

- **PEPR 444** Administration and Development of Instructional Systems in Physical Education
- **PEPR 450** Cultural Bases of Physical Education

**Required Electives**

- **PEPR 475** Internship in Physical Education

**Additional Requirements**

- **Baccalaureate Writing Requirement**
  - 3 hours
- **Required Professional Courses**
  - 15 hours
- **Required Electives**
  - 15 hours

**Required Professional Courses**

- **PEPR 444** Administration and Development of Instructional Systems in Physical Education
- **PEPR 450** Cultural Bases of Physical Education

**Required Electives**

- **PEPR 475** Internship in Physical Education

**Additional Requirements**

- **Baccalaureate Writing Requirement**
  - 3 hours
- **Required Professional Courses**
  - 15 hours
- **Required Electives**
  - 15 hours
MINORS

Health Education Minor
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.

COGNATES (17 hours)

<table>
<thead>
<tr>
<th>Course</th>
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<th>Hours</th>
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<tbody>
<tr>
<td>BIOS 112</td>
<td>Principles of Biology</td>
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<tr>
<td>BIOS 211</td>
<td>Human Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>BIOS 240</td>
<td>Human Physiology</td>
<td>4</td>
</tr>
<tr>
<td>PSY 100</td>
<td>General Psychology</td>
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<tr>
<td>PSY 150</td>
<td>Introduction to Human Behavior</td>
<td>3</td>
</tr>
<tr>
<td>SOC 200</td>
<td>Principles of Sociology</td>
<td>3</td>
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</tbody>
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**Hours Required for this minor: 25-27**

HEALTH EDUCATION—SCHOOL EMPHASIS (27 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>PEPR 155</td>
<td>Foundations of Health Education</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 181</td>
<td>First Aid</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 220</td>
<td>Basic Health Concepts I</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 221</td>
<td>Basic Health Concepts II</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 312</td>
<td>Planning School Health Programs</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 316</td>
<td>Issues in Health Education</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 362</td>
<td>Measurement and Evaluation in Health Education</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 412</td>
<td>Teaching Skills and Strategies</td>
<td>3</td>
</tr>
</tbody>
</table>

**FCS 210 | Sex Education | 3**
**FCS 410 | Teaching Sex Education in the School | 3**

HEALTH EDUCATION—COMMUNITY EMPHASIS (25 hours)

**REQUAIRE PROFESSIONAL COURSES (13 hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>PEPR 150</td>
<td>Foundations of Physical Education and Exercise Science</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 295</td>
<td>Biomechanical Analysis of Movement</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 390</td>
<td>Physiology of Motor Activity</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 392</td>
<td>Measurement and Evaluation in Physical Education</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 447</td>
<td>Physical Education Methods: Instructional Design</td>
<td>3</td>
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<tr>
<td>PEPR 448</td>
<td>Physical Education Methods: Teaching Skills</td>
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**ELECTIVE COURSES (10 hours)**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>PEPR 172</td>
<td>Outdoor Leadership</td>
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<tr>
<td>PEPR 181</td>
<td>First Aid</td>
<td>2</td>
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<tr>
<td>PEPR 199</td>
<td>Computer Applications for PEPR</td>
<td>2</td>
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<tr>
<td>PEPR 236</td>
<td>Officiating</td>
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<td>PEPR 276</td>
<td>Outdoor Education</td>
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<tr>
<td>PEPR 400</td>
<td>Field Experience</td>
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<tr>
<td>PEGN 346</td>
<td>Lifeguard Training</td>
<td>2</td>
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<tr>
<td>PEPR 416</td>
<td>Topics in Recreation</td>
<td>2</td>
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<tr>
<td>PEGN 350</td>
<td>Water Safety Instructors</td>
<td>2</td>
</tr>
<tr>
<td>ACTY 201</td>
<td>Accounting</td>
<td>3</td>
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<tr>
<td>COM 104</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 204</td>
<td>National Park Lands</td>
<td>3</td>
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<tr>
<td>GEOL 321</td>
<td>Geology of National Parks and Monuments</td>
<td>2-3</td>
</tr>
<tr>
<td>SOC 352</td>
<td>Introduction to Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>SWRK 562</td>
<td>Community Organizations in Urban Areas</td>
<td>3</td>
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**ELECTIVE COURSES (9 hours)**

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<th>Course</th>
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<tbody>
<tr>
<td>SC 170</td>
<td>Life Science for Elementary Educators I</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 211</td>
<td>Human Anatomy</td>
<td>4</td>
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**Hours Required for this minor: 24**

ELECTIVE COURSES (9 hours)

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<th>Course</th>
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<th>Hours</th>
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<tr>
<td>PEPR 105</td>
<td>Bowling</td>
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<tr>
<td>PEGN 108/208</td>
<td>Backpacking</td>
<td>1</td>
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<tr>
<td>PEGN 130/131</td>
<td>Judo/Karate</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 139</td>
<td>Relaxation</td>
<td>1</td>
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<tr>
<td>PEGN 140</td>
<td>Riffery</td>
<td>1</td>
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<tr>
<td>PEGN 143</td>
<td>Cross-country Skiing</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 175</td>
<td>Special Activities</td>
<td>1</td>
</tr>
<tr>
<td>PEGM 102</td>
<td>Cycling/Relaxation</td>
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**COGNATES (9 hours)**

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<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>BIOS 112</td>
<td>Principles of Biology</td>
<td>3</td>
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<tr>
<td>BIOS 211</td>
<td>Human Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>BIOS 240</td>
<td>Human Physiology</td>
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**Required Teaching Assistant**

Elementary Physical Education Minor

This minor must be taken as part of the Elementary Group Minor.

**COGNATES (7 hours)**

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<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>BIOS 112</td>
<td>Principles of Biology</td>
<td>3</td>
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<tr>
<td>OR</td>
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<tr>
<td>SCI 170</td>
<td>Life Science for Elementary Educators I</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 211</td>
<td>Human Anatomy</td>
<td>4</td>
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**Hours Required for this minor: 24**

**REQUAIRE PROFESSIONAL COURSES (17 hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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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 243</td>
<td>Physical Education Methods: Early Elementary Movement/Physical Activities</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 295</td>
<td>Biomechanical Analysis of Activity</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 346</td>
<td>Physical Education Methods: Special Populations</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 447</td>
<td>Physical Education Methods: Instructional Design</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 448</td>
<td>Physical Education Methods: Teaching Skills</td>
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**Required Activity Courses (3 hours)**

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>PEPR 115</td>
<td>Tumbling : Apparatus</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 310</td>
<td>Track and Field</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 106</td>
<td>Recreational Dance</td>
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**ELECTIVE COURSES (4 hours)**

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Elect from the following courses and/or other PEPR/PEGN courses with permission of advisor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEPR 105</td>
<td>Baseball/Softball/Volleyball</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 110</td>
<td>Soccer/Basketball</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 181</td>
<td>First Aid</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 210</td>
<td>Racquet Sports</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 276</td>
<td>Outdoor Education</td>
<td>2</td>
</tr>
<tr>
<td>PEGN 139</td>
<td>Relaxation</td>
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</tr>
<tr>
<td>PEGN 350</td>
<td>Water Safety Instructor</td>
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**COGNATES (11 hours)**

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<tr>
<th>Course</th>
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<tr>
<td>BIOS 112</td>
<td>Principles of Biology</td>
<td>3</td>
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<tr>
<td>BIOS 211</td>
<td>Human Anatomy</td>
<td>4</td>
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<tr>
<td>BIOS 240</td>
<td>Human Physiology</td>
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**Required Teaching Assistant**

Special Physical Education Minor

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 (9 hours)**

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<tr>
<th>Course</th>
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<th>Hours</th>
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<tbody>
<tr>
<td>BIOS 112</td>
<td>Principles of Biology</td>
<td>3</td>
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<tr>
<td>SCI 170</td>
<td>Life Science for Elementary Educators I</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 211</td>
<td>Human Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>PEPR 111</td>
<td>Healthy Living</td>
<td>2</td>
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**Courses in Special Education (9 hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>SPED 530</td>
<td>Introduction to Special Education</td>
<td>3</td>
</tr>
<tr>
<td>SPED 538</td>
<td>Introduction to Classroom Management</td>
<td>3</td>
</tr>
<tr>
<td>SPED 539</td>
<td>Consultation and Communication in Special Education</td>
<td>3</td>
</tr>
</tbody>
</table>

**Hours Required for this minor: 25**
SPECIAL PHYSICAL EDUCATION COURSES (13 hours)
PEPR 320 Physical Education for Individuals with Disabilities 3
PEPR 321 Therapeutic Programs for Individuals with Disabilities 3
PEPR 420 Developmental Programs for Children with Disabilities 3
PEPR 400 Field Experience/Internship (300 hours) 4

COURSES IN PHYSICAL EDUCATION (8 hours)
PEPR 243 Physical Education Methods: Early Elementary Movement/Physical Activities 3
PEPR 447 Physical Education Methods: Instructional Design 3
PEPR 448 Physical Education Methods: Teaching Skills 3

ELECTIVE COURSES (3 hours)
PEGR Activity Courses
PEGR Swim Courses

Athletic Training Minor
(Non-Teaching)

Students who major in exercise science should not elect the athletic training minor.

REQUIRED COGNATES (11 hours)
BIOS 112 Principles of Biology 3*
BIOS 211 Human Anatomy 4
BIOS 240 Human Physiology 4

Hours Required for this minor 16-21

REQUIRED CORE (13 hours)
PEPR 181 First Aid 2
*PEPR 380 Foundations of Sports Injuries 2
FCS 260 Nutrition 3
*PEPR 400 Field Experience At. Trn. 2

Electives (3-6 hours)

1. Basic Sciences
CHEM 101 or 102 Gen. Chemistry 4
GSCI 133 Issues in Social Biology 4
PHYS 106 Elementary Physics 4

2. Behavioral Sciences
COM 170 Interpersonal Communication I 3
PSY 100 General Psychology 3
SOC 200 Principles Sociology 3
SWRK 210 Social Work Stud. and Prof. Role 3
ED 350 Young Child, Fam. and Society 3

3. Health Education Aspects of Man and His Environment
BIOS 512 Environment and Health Problems 3
FCS 210 Intro. Human Sexuality 3
PEPR 235 Theory of Coaching 2
PEPR 322 Physical Activities for Special Populations 2
PEGR 516 Issues in Health Education 1-3
*PEGR 580 Studies in Sports Medicine: Topic III Phy Cond. and Rehab/Ex 2
ED 555 Alcohol Education 2

ADDITIONAL REQUIREMENT
Eight hundred (800) clock hours of clinical experience.

Coaching Minor
(Non-Teaching)

This minor does not certify a student to teach physical education. The coaching minor will provide instruction in the sports which are currently emphasized by the Michigan Interscholastic Sports Programs: basketball, football, track and field, tennis, volleyball, softball, golf, and gymnastics. The coaching minor is not a teachable minor.

REQUIRED COGNATES (11 hours)
BIOS 112 Principles of Biology 3
BIOS 211 Human Anatomy 4
BIOS 240 Human Physiology 4

Hours Required for this minor 24

REQUIRED COURSES (18 hours)
PEPR 235 Theory of Coaching 2
*PEPR 295 Biomech. Analysis of Act 2
PEPR 390 Physiology of Motor Act 2
*PEGR 335 Advanced Theory of Coaching 2
*PEGR 380 Foundations of Sports Injuries (Prereq.—First Aid 161) 2
*PEPR 400 Field Experience (Prereq.—Coaching and Adv. Tech Course) 2
PEGR 400 Varsity Athletic Series 1

PROFESSIONAL ELECTIVES (11 hours)
PEPR 337 Advanced Techniques and Coaching Series—Prerequisites: Must have had first level course(s) or permission of instructor.
Elect 6 hours from following courses (must be at least one team sport and one individual sport)
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
Basketball 1
Gymnastics 1
Baseball 1
Volleyball 1
Softball 1
Football 1

PEPR 105-310 professional activity courses 3

Recreation Minor
(Non-Teaching)

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 courses.

Hours Required for this minor 24

REQUIRED COURSES (24 hours)
PEPR 170 Introduction to Recreation 3
PEPR 233 Technical Recreation Skills 3
PEPR 271 Recreation Programming and Leadership Theory (Prereq. 233) 3
PEPR 290 Recreation for Special Populations 3
PEPR 371 Practical Recreation Programming and Leadership (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/Evaluation in Recreation 2
PEPR 497 Professional Development in Recreation (Prereq. 476) 3

Courses By Topic

PROFESSIONAL ACTIVITY COURSES (PEPR)

102 Cycling: Relaxation/Stress Management
105 Baseball/Softball: Volleyball
110 Soccer: Basketball
115 Tumbling: Apparatus
200 Football: Wrestling
205 Cross Country Ski: Weight Training
110 Racquet Sports
215 Aerobic Conditioning
305 Golf: Archery: Bowling
310 Track and Field

HEALTH EDUCATION ACADEMIC COURSES (PEPR)

100 Health for Better Living
155 Foundations of Health Education
181 First Aid
220 Basic Health Concepts I
221 Basic Health Concepts II
231 Introduction to Community Health
312 Administration and Development of Instructional Systems
316 Issues in Health Education
400 Field Experience in Health
412 Teaching Skills and Strategies in Health
430 Community Health III
431 Community Health Methods and Strategies
510 Modern Health for Teachers and Health Professionals
512 Principles, Practices, and Methods in Health Education
514 Methods and Materials in Health Education
516 Issues in Health Education

PHYSICAL EDUCATION ACADEMIC COURSES (PEPR)

150 Foundations of Health, Physical Education and Recreation
181 First Aid
231 Introduction to Community Health
235 Theory of Coaching
236 Officiating Series
242 Aerobic Dance Instruction
243 Physical Education Methods: Early Elementary Movement/Physical Activities
244 Early Elementary Movement and Activities
295 Biomechanical Analysis of Activity
300 Seminar Series
317 Cardiovascular Health
320 Physical Education for Individuals with Disabilities
321 Therapeutic Programs for Individuals with Disabilities
322 Physical Activities for Special Populations
324 Sports for Individuals with Disabilities
325 Swimming for the Exceptional Child
335 Advanced Theory of Coaching
337 Coaching and Advanced Techniques
345 Nature and Bases Motor Skills
346 Physical Education Methods: Special Populations
Health, Physical Education and/or Recreation Courses (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 4 hrs. Fall, Winter
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
Investigation of folk, square, and social forms of dance with a concentration on overlapping dance skills.

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 181 First Aid 2 hrs. Fall, Winter
The standard course in first aid techniques leading to Red Cross certification. Open to all students.

PEPR 190 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 and computer applications specific to HPER 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.

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 1 hr.
Winter Semester: Basketball 1 hr., Football 1 hr., Volleyball 1 hr., Softball/Baseball 1 hr., Track and Field 1 hr.

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, drills, 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 243 Physical Education Methods: Early Elementary Movement/Physical Activities 3 hrs.
The content in this course includes movement concepts (level, direction, pathway, speed, ...
space), locomotor, non-locomotor and manipulative skills, selection of developementally appropriate games, rhythmic activities, and the basic instructional components required for the plan and delivery of appropriate physical education curricula for preschool and early elementary school children. 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 leading. Prerequisite: PEPR 233.

PEPR 276 Outdoor Education 2 hrs. Winter only 1 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 in 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 3 hrs. Fall, Winter Designed to provide information and experiences which will enable students to develop planning skills for a variety of health promotion programming 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 for individuals 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 for individuals with disabilities. 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 interact with individuals 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 331 Community Health Planning 3 hrs. This course deals with the analysis of principles of program planning in public health education. Topics include: needs assessment, community and organization, program selection, program coordination, and program evaluation. Prerequisites: PEPR 155, 220, 221, 231, FCS 210, 260.

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).

PEPR 340 Physical Education for the Elementary Classroom Teacher 2 hrs. Fall, Winter Students "This course is structured for the future elementary classroom teacher and/or special education teacher. It provides experience in the participation 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 346 Physical Education Methods: Special Populations 3 hrs. This course is an orientation to the instruction of physical activity to special populations. It focuses on the scope of adapted physical education, key techniques required for effective instruction, general needs of handicapped populations, and the accommodation of activities, equipment, and instructional materials for special populations attending grades K-12. Prerequisite: PEPR 243.

PEPR 352 Teaching Health in the Elementary School 2 hrs. This course will provide students with knowledge and skills needed to design, implement, and evaluate health education curricula for grades K-6. The focus of the course will be on the following: (a) planning a developmentally appropriate instructional program for elementary students, (b) identifying and evaluating existing health curricula, and (c) implementing health lesson/units into primary and intermediate grade levels. Prerequisites: PEPR 155, 220, and 221 (for health education majors); PEPR 111 or PEGN 170 (Elementary Education students).

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 the/she 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 1 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 and leading 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. Attention 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—cardiovascular, pulmonary, and skeletal function. Practical application of principles to strenuous physical exertion. 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 398 Recreation Practicum 3 hrs. Fall, Winter, Spring
The practical field experiences in recreation. Enroll 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 teaching.

PEPR 412 Teaching Skills and Strategies 3 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 term 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.

PEPR 420 Developmental Programs for Children with Disabilities 3 hrs. Winter
Students will study sensory regulatory disorders and development of programs in various age groups. Emphasis will be placed on various theories to practical situations in a laboratory setting. Prerequisites: PEPR 150, 295, and 392.

PEPR 431 Community Health Methods and Strategies 3 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: BIOS 211.

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 an effective physical education curriculum based on a developmental model. Prerequisites for majors: 100 series, PEPR 290, 345, 390, and 392.

PEPR 445 Teaching Skills and Strategies 2 hrs. Fall, Winter
This course is designed to provide information and experience which will enable the student to implement effective physical education curriculum based on a developmental model. Prerequisite: PEPR 444.

PEPR 447 Physical Education Methods: Instructional Design 3 hrs.
This course is designed to provide experiences which will enable the student to: (1) identify instructional constraints; (2) select motor appropriate experiences for children K-12; (3) develop effective instructional materials, and; (4) develop management and administrative skills required to plan and implement a contemporary physical education program in school settings. Prerequisites: PEPR 150, 290, 345, 346, 390, and 392.

PEPR 448 Physical Education Methods: Teaching Skills 3 hrs.
This course provides information and experiences which will enable the student to: (1) plan and implement effective physical education curricula based on a developmental model; (2) self-assess teaching performance using reflective systematic skills; and (3) develop a personal teaching portfolio. Prerequisite: PEPR 447.

PEPR 450 Cultural Dynamics of Health, Physical Education, and Recreation 2 hrs. Fall, Winter
A comparative approach is taken that applies sociology and multiculturalism to the fields of health, physical activity, and recreation using the vehicle of contemporary sport issues and trends. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: 20 hours in the program and PEPR 150, or 170, or 155.

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 used 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 of recreational activities or programs for retirees, nursing homes, senior citizens housing units and clubs. Graded on a Credit/No Credit basis.

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 practical 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. Graded on a Credit/No Credit basis.

PEPR 476 Advanced Organization and Administration of Recreation 2 hrs.
The purpose of this course is to provide students with advanced skills that are required in the administration of modern recreation and leisure service agencies. This course will allow students not only to gain knowledge of advanced administrative practices, 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 abnormal beats of the heart from an EKG; become familiar with common 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, analysis of current recreation and leisure research, and the use of computers in recreation 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, recruitment, 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
This course is designed for teachers and
3 hrs.
This course surveys the history, philosophy,
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
PEGR 100, 220, 221.

PEGR 510 Modern Health for Teachers and
Health Professionals
3 hrs.
This course is designed for teachers and
health professionals who need of current
knowledge in health science. The course
discusses topics such as mental health, nutrition,
and methods of health education. The
course surveys the history, philosophy, public
health, physical fitness, and stress management.
The course is not open to health education majors and
minors who have had PEGR 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
health education. The course is not open to
health education majors and minors who have had
PEGR 100, 220, 221.

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: PEGR
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
rehabilitation and programs for handicapped
people.

PEGR 530 Practicum in Teaching and
Coaching
1–2 hrs.
Demonstrations, participation and evaluation of
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, psychological, 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.
A study of representative programs
classified according to state and national standards for evaluating such programs.

PEGR 562 Administration of Athletics
2 hrs.
Discusses administrative procedures and
problems connected 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 Athletic Trainer),
Winter (Graduate Non-Athletic Trainer)
Lectures and demonstration courses concerned with
the prevention, diagnosis, and treatment of
sports type injuries. Prerequisite: BIOS 211, 240, PEGR 380.

PEGR 582 Athletic Training for Coaches
2 hrs.
Basic procedures in injury prevention,
assessment, treatment, and rehabilitation will be
covered. Principles and techniques are presented in a lecture and laboratory format.
Prevention will be emphasized. Prerequisite:
Permission of instructor.

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.

Prerequisite: 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 this 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 598 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 Courses
(PEGN)

A list of approved General Education courses
can be found earlier in this catalog.
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.

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 170–183—Health and Wellness
courses are approved for fulfillment of
General Education Area VIII. The content
includes addresses the topics of health,
including nutrition, substance abuse, STDs,
and the concepts of physical fitness. Dual
enrollment in 170–183 courses offered in
one semester is prohibited. Courses are not
repeetable for credit.
- PEGN 200-level courses—open to all
students who have completed a 100-level
course in the activity or the equivalent. (**) 
Prerequisite 245 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.

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 *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 hrs.
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 Racquetball
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 *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 knowledge 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 knowledge 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 knowledge 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 experience allowing them to (1) acquire knowledge 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 180 Health and Wellness—Beginning Swimming
2 hrs.
Students are provided information and experience allowing them to (1) acquire knowledge 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 181 Health and Wellness—Intermediate Swimming
2 hrs.
Students are provided information and experience allowing them to (1) acquire knowledge 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 182 Health and Wellness—Swim Conditioning
2 hrs.
Students are provided information and experience allowing them to (1) acquire knowledge 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 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 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 242 Skating—Ice-Figure 1 hr.
PEGN 244 Intermediate Alpine Skiing 1 hr.
PEGN 246 Intermediate Soccer 1 hr.
PEGN 249 Intermediate Tennis 1 hr.
PEGN 250 Intermediate Swimming 1 hr.
Students will build on skills learned in PEGN 250, and learn how to respond in an aquatic emergency. This course will serve as a sound foundation for further training in lifeguarding and aquatics. Prerequisite: PEGN 250 or equal skills.

PEGN 252 Intermediate Soccer 1 hr.
PEGN 253 Intermediate Volleyball 1 hr.
PEGN 349 Lifeguard Training 2 hrs.
To provide the necessary minimum skills training for a person to serve as a non-surf lifeguard. Prerequisite: PEGN 251 or equal skills.

PEGN 350 Water Safety Instructor 2 hrs.
American Red Cross revised course (1992) will prepare the student to be able to instruct all progressive levels of swimming, infant/preschool aquatics and emergency water safety. This course will not qualify a participant to be a lifeguard. Prerequisite: PEGN 251 or equal skills. Current Life Saving Certificate required.

PEGN 351 Lifeguard Training Instructor (LGI) 2 hrs.
American Red Cross Revised (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 Intermediate 1 hr.

VARITY 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.

Course is repeatable for up to 8 hours credit overall. (University limit) under 200 number, with different course titles. Prerequisite: GPA of 3.0 overall.

This course is for the student desiring a higher level of fitness, training for marathons, triathlons, and/or weight competition.
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. 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 issues 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 305 K-12 Content Area Literacy
3 hrs.

This course is designed to provide the K-12 preservice content area teacher (Art; Health, Physical Education, and Recreation; Music; Vocal Education) with the knowledge and skills necessary to assist students in using the language processes—reading, writing, speaking, listening, thinking, as well as performance—as tools for learning. Students will explore the following topics: 1) factors affecting the learner; 2) instructional methods designed to meet the needs of a diverse population; 3) the nature of the reading process and reading to learn; 4) implications of current research on teaching and learning; 5) ways to integrate language arts across the curriculum.

The major goal of the course is the application of course concepts and strategies to subject areas. Prerequisites: ED 250 and admission to the College of Education.

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 for teaching instruction in the United States. Summaries of the results of current research in reading will be 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, also will be presented.

Prerequisite: Admission to professional program in education.

ED 337 Technology for Elementary Education
2 hrs.

This introduction to the contributions of instructional technologies to teaching and learning in elementary education. The course will provide a survey of critical use of technology appropriate for elementary education and will enable participants to acquire basic skills in producing and using computers, video, and other instructional technologies in educational applications.

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 other behavior. Family constellations, the learning of sex roles, the effects of divorce, and similar phenomena will be studied. Consideration will be given to the effect 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, oracy 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 multiple literacies, including the comprehension and vocabulary development, strategies for improving study processes, and methods of analyzing and evaluating students' progress. Integration across content areas, and the 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. Prerequisite: ED 312. Elementary Education Minors must complete ED 351 prior to registering for ED 352.

ED 369 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 management principles designed to personalize "discipline specific" programs. 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 childhood classroom teacher. Requires a minimum of one (1) day per week participation in a classroom. Prerequisites: ED 309; admission to the Early Childhood Emphasis or minor.

ED 371 Elementary Classroom Organization and Management 3 hrs.
Students will examine and apply 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 management principles designed to personalize "discipline specific" programs. 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 childhood classroom teacher. Requires a minimum of one (1) day per week participation in a classroom. Prerequisites: 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 individual and group behavior processes in education is examined. An interdisciplinary approach is used. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisite: Minimum of 70 earned semester credit hours.

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 their 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) that 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 offers variable credit from one through six semester hours. 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 semester. No more than six hours of 398 may be applied 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 participation in the practicum of two half-days per week, the student will meet periodically in a seminar with the 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 of content, skills, and attitudes; and discover how to guide and assess the learning of children in this field. Planning social studies experiences and ways of organizing individuals, groups, and the total class will be emphasized. Multicultural and non-sexist content and strategies will be emphasized. Prerequisite: ED 309 or ED 312; GEOG 102 or ED 211 or PSYC 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 directed toward students' classroom experiences; it will further the students' practical understanding of 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 responsibility and to practice professional ethics. It is in the seminar that the ongoing Teaching Portfolio will be completed and reviewed by the Teaching Portfolio 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 implementation of the language arts processes in the elementary school. Students will pursue individualized programs culminating in a guided field experience through which students will examine, identify program competencies. Student- and faculty-led seminars will be held 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 an educational setting. Students will synthesize 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 5–8 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 an educational setting. Students will synthesize 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 475 Intern Teaching: Middle School/Secondary 5 or 10 hrs.
Students devote a minimum of five days per week for one semester to Intern Teaching. They are expected to have experience in both the curricular and extra curricular programs of the school in which they are assigned. Prerequisites: All other courses and program requirements must be completed prior to Intern Teaching. To be taken concurrently with ED 410. Credit/No Credit only.

ED 500 In-service Professional Development I 1 hr.
This course develops specific professional skills related to current school responsibilities of teachers and other school personnel. Course outcomes need to be demonstrated application to the classroom/workplace. May be repeated, credit hours may be applied to teacher certification programs with approval of the Teacher Certification office but will not be applicable to graduate programs within the Department of Education and Professional Development.

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 be demonstrated application to the classroom/workplace. May be repeated, but 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 502 Curriculum Workshop 1–6 hrs.
Opportunity provided for teachers, supervisors, and administrators in selected school systems to develop programs of curriculum improvement. This may include short-term offerings to resolve a particular curricular problem, as well as long-range curriculum studies. A wide variety of resources is used for instructional purposes, including specialized materials, library and laboratory facilities, field trips, audiovisual materials, and the like. Each offering of 502, Curriculum...
ED 504 Adult Development 3 hrs.
This course provides an in-depth look at each age and stage in the life cycle. It will explore such problems as the changing role of parents and singles, the changing societal pressures on teachers, new adult life-styles, 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 variability, 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 well-being and problem solving will be studied.

ED 506 Teaching in Adult Education 3 hrs.
This course focuses on the implementation of telecommunications for teaching and learning. Telecommunication technologies widely used in the field of education will be examined. The course will provide hands-on activities in the design of learning experiences for adults. Extensive use will be made of audiovisual materials and field observation in adult learning activities. The course will be useful in planning inservice programs for their own staff.

ED 507 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 the child; and grief and loss through death, divorce, or separation. Special emphasis will be placed on child development; language development; concept development; physical, psychological, and environmental factors affecting the child in reading. 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 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 reading ability. This course will also be repeated. Prerequisite: ED 542 or equivalent.

ED 549 Instructional Technology II 3 hrs.
This course covers management issues related to the selection, purchase, installation, and maintenance of software programs for computers and computer network systems. Students will learn how to conduct a technology needs assessment for a school district. Using information gained from the needs assessment, students will also learn methods of planning, implementing, and maintaining technology across an entire system. A detailed review of networking items including hardware, software, Internet connectivity, and troubleshooting issues will also be addressed. Prerequisite: ED 542 or equivalent.

ED 550 Photography Workshop 1-3 hrs.
Intended to sharpen visual perception while improving technical skills, this laboratory course emphasizes photography as a creative and expressive medium of visual communication. Each student is expected to produce new photographs each week and to submit one or more mounted enlargements for group critique at each class meeting. Each student must have the use of appropriate equipment and should expect to spend $80 or more for supplies. Although no prerequisite is required, it is helpful to have had some experience with basic darkroom processes. May be repeated up to a total of six credits.

ED 575 Administration of Child Development Centers 3 hrs.
Examination of day care and preschool regulations and/or requirements and knowledge of administrative materials and duties in providing optimum growth for young children. Includes management, planning, and organizing child development centers. (Cross-listed with FCS 575.)

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 the opportunity to develop understanding of the process of reading. It is also intended to help students understand more fully the place of reading in a total language arts program and to provide students an opportunity to gain 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 the guidance of the departmental staff. Prerequisite: Written consent of departmental advisor and instructor.
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 Construction Management, Engineering Management, Materials Science and Engineering, Operations Research, Computer Engineering, Electrical Engineering, Industrial Engineering, Manufacturing Engineering, Materials Science and Engineering, Mechanical Engineering, and Paper and Imaging Science and Engineering, and Ph.D. degrees in Industrial Engineering, in Mechanical Engineering, and in Paper and Imaging Science and 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 academic plan, to discuss employment opportunities, and to help with general academic problems. Transfer credit and all course substitutions must be approved by the appropriate department and must be 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 computing 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 to provide opportunities for students to become more directly involved with specific activities in their areas of interest. Students interested in enlarging their understanding of the 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 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. Students interested in advanced studies in engineering may pursue a Master of Science degree in Computer Engineering, Electrical Engineering, Industrial Engineering, Mechanical Engineering/Manufacturing Research, Paper Science and Engineering, or Engineering Management at WMU.

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 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

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)
Chemical Engineering (CHG)
Computer Engineering (CPE)
Construction Engineering Management (CEM)
Electrical Engineering (EE)
Industrial Engineering (IEN)
Manufacturing Engineering (MFE)
Mechanical Engineering (ME)
Paper Engineering (PAE)

University admission standards are used for enrollment in the PE curriculum. Students admitted to the PE curriculum should have appropriate academic preparation.

Academic Advising

All students enrolled in the PE curriculum will receive academic advising from 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 of the engineering curricula.

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

MATH 122, 123, 229, 232 ........................................ 12 hrs.
CHEM 110 and 111 .................................................. 4 hrs.
General Education AREA I, II, III, IV, OR V ............ 6-8 hrs.

ADDITIONAL COURSES REQUIRED BY CURRICULA

Aeronautical Engineering

CS 106; ECE 210, 211; CHEM 102; PHYS 205 and 206; PHYS 207 and 208; and PHYS 309 and PHYS 310 or CHEM 112 and CHEM 113. See the Department of Mechanical and Aeronautical Engineering for complete Aeronautical Engineering curriculum requirements.

Chemical Engineering

CHEM 112 and CHEM 113; CHG 101, CHG 261; CS 106; PHYS 205 and PHYS 207. See the Department of Paper and Printing Science and Engineering for complete Chemical Engineering curriculum requirements.

Computer Engineering

CS 111, ECE 210, ECE 211; 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, CHEM 112, CHEM 113; CS 200; ECE 210, ME 232; CHEM 256; PHYS 205 and PHYS 206; and PHYS 207 and PHYS 208. See the Department of Construction Engineering, Materials Engineering, and Industrial Design for complete Construction Engineering and Management curriculum requirements.

Electrical Engineering

CS 306; ECE 210, IME 102; PHYS 205 and PHYS 206; PHYS 207 and PHYS 208; and PHYS 309 and 310. See the Department of Electrical and Computer Engineering for complete Electrical Engineering curriculum requirements.

Industrial Engineering

ECE 210, IME 102; 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 112 and CHEM 113; CS 306; ECE 210; IME 102; PHYS 205 and PHYS 206; ME 253; PHYS 207 and PHYS 208; and PHYS 309 and 310. See the Department of Construction Engineering, Materials Engineering, and Industrial Design for complete Materials Engineering curriculum requirements.

Mechanical Engineering

CS 106; IME 102; PHYS 210, 211; ME 232, 256; PHYS 205 and PHYS 206; and PHYS 309 and 310. See the Department of Mechanical and Aeronautical Engineering for complete Mechanical Engineering curriculum requirements.

Paper Engineering

CHEM 112 and CHEM 113; 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), Chemical Engineering (CHG), Computer Engineering (CPE), Construction Engineering and Management (CEM), Electrical Engineering (EE), Industrial Engineering (IEN), Manufacturing Engineering (MFE), Materials Engineering (MME), Mechanical Engineering (ME), or Paper Engineering (PME) may apply for formal admission to one of these engineering curricula after successfully completing the pre-engineering curricular 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 Catalog) degree programs off campus.

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 Muskegon Regional Center, (616) 777-0500, and by referring to the Department of Manufacturing Engineering section of this catalog.

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

37 hours

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

IME 326 Operations Planning and Control OR
IME 416 Operations Control in Industry

MKTG 372 Purchasing Management

MKTG 484 Business Logistics

Capstone class—3 hours (take one of the following)

MKTG 485 Material Systems Analysis Systems

MGMT 480 Materials Management Strategy

MGMT 481 Integrated Materials Systems

Elective—3 hours (one of the following)

IME 326 Quality Assurance and Control

IME 318 Statistical Quality Control

FCL 486 Marketing and Sales Law

MKTG 485 Material Systems Analysis

MGMT 480 Materials Management Strategy

MGMT 481 Integrated Materials Systems

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.

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.

Engineering and Applied Sciences College Courses (ENGR)

ENGR 101 Introduction to Engineering and Technology

1 hrs.

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 by their employer. Single semester internships and 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.
**CONSTRUCTION ENGINEERING, MATERIALS ENGINEERING, AND INDUSTRIAL DESIGN**

Osama Abudayyeh  
Phina An-Vu  
Mohammed Haque  
David Middleton  
Romain 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—B.S.E. degree**  
**Industrial Design—B.S. degree**  
**Materials Engineering—B.S.E. degree**  
**Construction Management—M.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, Kohrman Hall, phone (616) 387-4033. Because of prerequisites and limited offering times, students must consult with an academic advisor for proper course sequence.

**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, students will 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 normally not be approved.

Lists of appropriate electives are available from the academic advising office.

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**Curricula**

**Construction Engineering and Management**

**Bachelor of Science in Engineering (Construction)**

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 in 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) 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 be selected from 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 an 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.

**First Semester** — 17 hours

- CMD 131 Introduction to the Construction Environment (AREA VII) 3
- CMD 149 Introduction to Architectural Drawing 3
- CHEM 110 General Chemistry I (AREA VII) 3
- CHEM 111 General Chemistry Laboratory I (AREA VI) 1
- IME 102 Technical Communication (Prof. 1) 3
- MATH 122 Calculus I (Prof. 3) 4

**Second Semester** — 17 hours

- CMD 233 Construction Codes and Specifications 3
- GEOL 130 Physical Geology (AREA VI) 4
- MATH 123 Calculus II (Prof. 4) 4
- ME 250 Material Science I 3
- AREA I Fine Arts 3

**Third Semester** — 18 hours

- IME 261 Engineering Statistics 3
- ME 256 Statics 3
- MATH 272 Vector and Multivariate Calculus 4
- PHYS 205 Mechanics and Heat (AREA VI) 4
- PHYS 206 Mechanics and Heat Lab (AREA VI) 1
- AREA II* Humanities 3

**Fourth Semester** — 16 hours

- ME 257 Mechanics of Materials 4
- ME 258 Dynamics 3
- CS 108 BASIC for Industrial Study 1
- ME 232 Thermodynamics 3
- PHYS 207 Electricity and Light 4
- PHYS 208 Electricity and Light Lab 1

**Fifth Semester** — 17 hours

- CMD 236 Construction Measurements, and Layout 3
- CMD 336 Soil Mechanics and Foundations 3
- ECE 210 Circuit Analysis 4
- ACTY 210 Principles of Accounting 3
- MATH 374 Intro to Linear Algebra and Differential Equations 4

**Sixth Semester** — 16 hours

- CMD 386 Structural Analysis and Design 3
- MGMT 300 Fundamentals of Management 3
- ME 356 Fluid Mechanics 3
- CMD 238 Construction Materials and Methods 3
- AREA IV* Other Cultures/Civilizations 4

**Seventh Semester** — 16 hours

- CMD 431 Construction Planning and Scheduling 3
- CMD 436 Construction Estimating, Bidding and Cost Control 4
- CMD 483 Project Design and Control (Prof. 2) 1
- IME 310 Engineering Economy 3
- ECON 201 Principles of Economics 3
- AREA VIII Health and Well-Being 2

**Eighth Semester** — 15 hours

- CMD 438 Construction Project Management 3
- CMD 440 Reinforced Concrete Design 3
- CMD 485 Senior Project (Prof. 2) 3
- FCL 320 Business Finance 3
- AREA III* U.S.: Cultures and Issues 3

*At least two of these courses must be at the 300-400 level. NOTE: Pre Engineering courses appear in bold, italic print

**Industrial Design**

**Bachelor of Science**

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.

**Portfolio Review Procedure**

Any interested student may register for the freshman (100-level) Introduction to 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. Decisions about the portfolio review are made by finals week of the semester in which the review occurs. Registration into a 200-, 300-, or 400-level Industrial Design course does not mean the student will be allowed to attend the course unless the student has also passed the portfolio review. Any student not accepted to a higher level of class, or who does not have a positive portfolio review, must cancel any registration for that Industrial Design class. Students who do not pass the portfolio review may apply again the following year for another review after improving their skills through additional classes or repetition of classes.

Students' portfolios are reviewed for an understanding of elements and principles of design and 2- and 3-D drawing skill. 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 this Bachelor of Science program in industrial design must satisfy the following requirements in addition to University requirements stated elsewhere in this catalog:

1. A minimum grade of "C" (2.00) is required in all industrial design courses, 100-, 200-, 300-, and 400-level courses.
2. No more than two grades of "D" or "D+" in courses presented for graduation may be counted for graduation.
3. Complete the following program of 128 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 at least a "C" prior to enrollment in upper level Construction Engineering, Materials Engineering, and Industrial Design courses.
5. The following courses must be completed with a grade of "C" or better prior to enrollment in 300/400-level CMD courses.

### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<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>1</td>
</tr>
<tr>
<td>IME 102</td>
<td>Technical Communication</td>
<td>3</td>
</tr>
<tr>
<td>IME 142</td>
<td>Engineering Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 118</td>
<td>Pre-calculus Calculus</td>
<td>4</td>
</tr>
</tbody>
</table>

### Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMD 147</td>
<td>Principles of Industrial Form</td>
<td>3</td>
</tr>
<tr>
<td>CMD 206</td>
<td>Model Construction Studio</td>
<td>3</td>
</tr>
<tr>
<td>ART 102</td>
<td>Foundation 2D Design</td>
<td>3</td>
</tr>
<tr>
<td>IME 246</td>
<td>Introduction/Computer-Aided Design</td>
<td>3</td>
</tr>
<tr>
<td>MATH 200</td>
<td>Calculus with Applications</td>
<td>4</td>
</tr>
</tbody>
</table>

### Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMD 132</td>
<td>Wood Furniture Design</td>
<td>3</td>
</tr>
<tr>
<td>CMD 243</td>
<td>Product Design</td>
<td>3</td>
</tr>
<tr>
<td>CMD 301</td>
<td>Computer Aided ID Studio</td>
<td>3</td>
</tr>
<tr>
<td>CMD 305</td>
<td>Model Construction Studio</td>
<td>3</td>
</tr>
</tbody>
</table>

### Fourth Semester — 15 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMD 201</td>
<td>History of Design</td>
<td>3</td>
</tr>
<tr>
<td>CMD 230</td>
<td>Advanced Woodworking Design</td>
<td>3</td>
</tr>
<tr>
<td>CMD 247</td>
<td>Product Design</td>
<td>3</td>
</tr>
<tr>
<td>CMD 302</td>
<td>Computer Aided ID Studio</td>
<td>3</td>
</tr>
<tr>
<td>IME 442</td>
<td>Ergonomics and Design</td>
<td>3</td>
</tr>
</tbody>
</table>

### Fifth Semester — 17 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMD 343</td>
<td>Advanced Product Design Studio</td>
<td>3</td>
</tr>
<tr>
<td>ART 103</td>
<td>Theory of Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 231</td>
<td>Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>ART 248</td>
<td>Photography</td>
<td>3</td>
</tr>
<tr>
<td>IME 150</td>
<td>Introduction to Manufacturing (AREA VII)</td>
<td>3</td>
</tr>
<tr>
<td>AREA VIII</td>
<td>Health and Well-Being</td>
<td>2</td>
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### Sixth Semester — 18 hours

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>CMD 203</td>
<td>Color in Industrial Design</td>
<td>3</td>
</tr>
<tr>
<td>CMD 347</td>
<td>Product Design Fundamentals Studio</td>
<td>3</td>
</tr>
<tr>
<td>ART 220</td>
<td>History of Art (Area I)</td>
<td>3</td>
</tr>
<tr>
<td>ART 240</td>
<td>Painting I</td>
<td>3</td>
</tr>
<tr>
<td>ART 245</td>
<td>Graphic Design</td>
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</tr>
<tr>
<td>IME 250</td>
<td>Plastics Properties and Processing</td>
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### Seventh Semester — 15 hours

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<tr>
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<tbody>
<tr>
<td>CMD 443</td>
<td>ID Thesis and Project I (Prof. II)</td>
<td>3</td>
</tr>
<tr>
<td>ART 221</td>
<td>History of Art</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 250</td>
<td>Marketing Principles</td>
<td>3</td>
</tr>
<tr>
<td>AREA IIIU</td>
<td>U.S. Culture and issues*</td>
<td>3</td>
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### Eighth Semester — 14 hours

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CMD 447</td>
<td>ID Thesis and Project II (Prof. III)</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 500</td>
<td>Management Elective</td>
<td>3</td>
</tr>
<tr>
<td>AREA II</td>
<td>Humanities</td>
<td>4</td>
</tr>
<tr>
<td>AREA IV</td>
<td>Other Cultures/Civilizations</td>
<td>4</td>
</tr>
</tbody>
</table>

### Materials Engineering

**Bachelor of Science in Engineering (Materials)**

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 CMD 485 Senior Project.

#### Requirements

Candidates for the Bachelor of Science in Engineering (Materials) must satisfy the following requirements in addition to University requirements stated elsewhere in this catalog:

1. To satisfy professional engineering accreditation requirements, 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 prefix course, 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 128 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 italic print.

### First Semester — 17 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHEM 110</td>
<td>General Chemistry I (AREA VII)</td>
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<tr>
<td>CHEM 111</td>
<td>General Chemistry Laboratory I (AREA VII)</td>
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<tr>
<td>IME 102</td>
<td>Technical Communication</td>
<td>3</td>
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<tr>
<td>IME 142</td>
<td>Engineering I</td>
<td>3</td>
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<tr>
<td>MATH 122</td>
<td>Calculus II (Prof. III)</td>
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<tr>
<td>AREA I</td>
<td>Fine Arts</td>
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### Second Semester — 17 hours

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<thead>
<tr>
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<th>Course Title</th>
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<tbody>
<tr>
<td>CHEM 112</td>
<td>General Chemistry II (AREA VII)</td>
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<tr>
<td>CHEM 113</td>
<td>General Chemistry Laboratory II</td>
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<tr>
<td>CS 306</td>
<td>Introductory Programming</td>
<td>2</td>
</tr>
<tr>
<td>MATH 123</td>
<td>Calculus II (Prof. IV)</td>
<td>4</td>
</tr>
<tr>
<td>ME 220</td>
<td>Processes and Materials in Manufacturing</td>
<td>4</td>
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<tr>
<td>ME 250</td>
<td>Material Science</td>
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### Third Semester — 17 hours

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>IMS 261</td>
<td>Engineering Statistics</td>
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<tr>
<td>MATH 272</td>
<td>Vector and Multivariate Calculus</td>
<td>4</td>
</tr>
<tr>
<td>ME 253</td>
<td>Statics and Mechanics of Materials</td>
<td>4</td>
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<tr>
<td>CMD 258</td>
<td>Materials Science Lab</td>
<td>1</td>
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<tr>
<td>PHYS 205</td>
<td>Mechanics and Heat (AREA VI)</td>
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<tr>
<td>PHYS 206</td>
<td>Mechanics and Heat (AREA VI)</td>
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### Fourth Semester — 17 hours

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ECE 210</td>
<td>Circuit Analysis</td>
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<tr>
<td>IME 250</td>
<td>Plastics Properties and Processing</td>
<td>3</td>
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<tr>
<td>PHYS 207</td>
<td>Electricity and Light</td>
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<tr>
<td>PHYS 208</td>
<td>Electricity and Light Lab</td>
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<tr>
<td>AREA II</td>
<td>Humanities</td>
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<td>AREA VIII</td>
<td>Health and Well Being</td>
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### Fifth Semester — 15 hours

<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>CHEM 430</td>
<td>Physical Chemistry I (AREA VII)</td>
<td>3</td>
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<tr>
<td>CMD 353</td>
<td>Physical Metallurgy</td>
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<tr>
<td>GEOL 335</td>
<td>Mineralogy</td>
<td>4</td>
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<tr>
<td>MATH 374</td>
<td>Intro/Linear Algebra and Differential Equations</td>
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### Sixth Semester — 17 hours

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>CHEM 370</td>
<td>Introduction to Organic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CMD 457</td>
<td>Mechanical Behavior of Materials</td>
<td>4</td>
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</tbody>
</table>
CMD 474 Polymers and Polymer Composites .................................................. 3
IME 310 Engineering Economics ................................................................. 3
AREA IV Other Cultures and Civilizations .................................................. 4

Seventh Semester — 17 hours
CMD 471 Thermodynamics of Materials ....................................................... 4
CMD 483 Project Design and Control (Prof. 2) ............................................. 1
CMD 458 Instrumental Methods in Materials Analyses ................................ 3
IME 352 Metal Casting .................................................................................. 3
AREA III U.S. Culture and Issues ................................................................. 3
AREA V Social and Behavioral Sciences ...................................................... 3

Eighth Semester — 12 hours
CMD 354 Transport Phenomena in Materials ................................................. 3
CMD 473 Ceramics and Ceramic Composites ................................................ 3
CMD 476 Failure Analysis and Corrosion ....................................................... 3
CMD 485 Senior Project (Prof. 2) ................................................................. 3

* At least two of these courses must be at the 300-400 level.
Note: Pre-engineering courses appear in bold, italic print.

Construction Engineering, Materials Engineering, and Industrial Design Courses (CMD)

Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-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. Industrial 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 considerations, energy efficiency in construction environments, functional efficiency of building structures, cost reduction, appropriate materials and appropriate technology.

CMD 132 Wood Furniture Design (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 134 Industrial Design Fundamentals Studio (1–4)
3 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 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)
3 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 compose, and create architectural drawings related to interior design and construction.

CMD 201 History of Design (3–0)
3 hrs.
Begin with an overview of the history of design, craft, and technology before the 20th century. Renaissance and Industrial Revolution periods are highlighted. Design history of the 20th century showing 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 around the world.

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 I (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 Advanced Woodworking Design (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 122.

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 products 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)
3 hrs.
Introduction to product design methodology for mass-produced products. Human factors criteria in analysis and design control 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)
3 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 251 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, to the future will be described. Understanding of eras in history through the progression of materials. Advanced materials from the current period ("The Materials 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.

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 which may be taken 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 212, and an accepted metallurgy course.

CMD 258 Materials Science Laboratory 1 hr.
Laboratory investigations of topics covered in the basic materials course. Mechanical testing techniques to determine the strength of materials, structure-properties relationships, different techniques in strengthening metals, corrosion. Prerequisite: ME 250 or concurrent.

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 wireframe 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 (0-6)
3 hrs.
Building working prototypes of simple devices and systems. Creation of advanced models with real finish. Use of advanced processes and machines. 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 woodbased materials, joint designs, adhesives and fasteners, and selection and application of finishes. The effect of human factors on the design of furniture and interiors is emphasized. Prerequisite: CMD 331.

CMD 331 Upholstering and Wood Turning (2-3)
3 hrs.
Determination of ergonomic, structural, and material requirements of 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 132 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 piles, drilled piers, caissons, lateral earth pressures, and soil pressure distribution. Prerequisites: CMD 237, IME 281, GEOL 130.

CMD 336 Soil Mechanics and Foundation Design (2-3)
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 proprietorship, 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, PHYS 205, ME 250, and department approval.

CMD 354 Transport Phenomena in Materials (3-0)
3 hrs.
Principles of heat, charge, mass, and momentum transport. A comprehensive treatment of bulk and surface diffusion in solids, including mathematical formalism. Application to lattice defects, conductivity, semiconductivity, processing, heat treatment, coating, and corrosion and oxidation of metals. Prerequisites: MATH 374, CMD 353, and CHEM 430.

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). Development of understanding of how structural systems behave under loads. Prerequisites: CMD 238, ME 257.

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 236, IME 281.

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 and their effect on 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 for a variety of structures will be utilized. Principles and theories of estimating, classifications of work and quantity survey techniques applied to different types of structures and projects will be covered. Estimating quantities and listing of work items in 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 piping. 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 complete bid packages utilizing spreadsheets 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 300.

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 300.

CMD 440 Reinforced Concrete Design (3–0) 3 hrs.
Principles of design and analysis of reinforced concrete members subjected to moment, shear, and axial forces. 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. This course, along with CMD 447, is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: CMD 347, IME 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. This course, along with CMD 443, is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: CMD 443, IME 442.

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: ME 250, ME 253 or 254, MATH 272, and department approval.

CMD 458 Instrumental Methods in Materials Analyses (2–3) 3 hrs.
Principles and application of physical experimental techniques in materials analyses and research. Techniques include x-ray diffraction, electron microscopy, optical microscopy, atomic force microscopy, mössbauer spectroscopy, and thermal analysis. Prerequisite: ME 250, GEOl 335, and consent of instructor.

CMD 471 Thermodynamics of Materials (4–0) 4 hrs.
Introduction to chemical metallurgy, thermodynamics of functions associated with compounds, diffusion, phase equilibria and phase diagrams, extractive metallurgy, chemistry of ceramics. Prerequisites: ME 250, CHEM 430.

CMD 473 Ceramics and Ceramic Composites (3–0) 3 hrs.
Crystallography and atomic bonding relationships relative to mechanical, thermal, optical, magnetic, and electrical properties. Phase equilibria and transformation. Mechanical and physical properties of ceramic composites. Electronic, optical, biological, and structural application of ceramics and ceramic composites. Processing of traditional and technical ceramics. Prerequisites: ME 250 and CHEM 430.

CMD 474 Polymers and Polymer Composites (2–3) 3 hrs.
Polymerization techniques and molecular weight distributions. Polymer chain configuration, conformation, shape, and viscoelastic properties. Microstructure and physical and mechanical properties of bulk polymers, thin films, and solutions. Polymer composite materials. Major polymer classes and their modern applications. Prerequisites: CHEM 370, IME 250, and ME 250.

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 457, CMD 471, IME 261, and 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. This course, along with CMD 465, is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisite: 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. This course, along with CMD 483, is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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 6 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. One to three hours credit per semester. 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 alternate 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 and 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 (3–2) 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 include 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 toughening mechanisms. Design with and applications of ceramic materials. Prerequisites: MATH 374, PHYS 207, ME 250, and consent of instructor.
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 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, science, or industry), control 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 (telephones, 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 (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 be 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.

**Curricula**

**Computer Engineering**

**Bachelor of Science in Engineering (Computer)**

Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

**BACCAULAUREATE WRITING REQUIREMENT**

Students who have chosen the Computer Engineering program must satisfy the Baccalaureate Writing Requirement by successfully completing both ECE 481 Electrical/Computer Engineering Design I and ECE 482 Electrical/Computer Engineering Design II.

**REQUIREMENTS**

Candidates for the Bachelor of Science in Engineering (Computer) 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 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 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. Complete the following program of 130 semester credit hours. The schedule below is an example of one leading to graduation in eight semesters, beginning with Fall. Pre-engineering requirements are in darker italic print.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
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</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>MATH 122 Calculus I 4</td>
</tr>
<tr>
<td></td>
<td>CHEM 110 General Chemistry I 3</td>
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<tr>
<td></td>
<td>CHEM 111 General Chemistry II 3</td>
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<td></td>
<td>IME 102 Technical Communications 3</td>
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<tr>
<td></td>
<td>ECE 250 Digital Logic 3</td>
</tr>
<tr>
<td></td>
<td>AREA VIII Health and Well-being 2</td>
</tr>
</tbody>
</table>

| Second Semester | 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 | 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 | MATH 145 Discrete Mathematical Structures 3 |
| | MATH 374 Introduction to Linear Alg. and Diff. Equations 4 |
| | ECE 210 Circuit Analysis 4 |
| | ECE 251 Introduction to Microprocessors 4 |
| | IME 310 Engineering Economy 3 |

| Fifth Semester | ECE 221 Electronics I 4 |
| | ECE 310 Network Analysis 3 |
| | ECE 361 Engineering of Real Time Systems 3 |
| | ECE 355 Digital Design 3 |
| | IME 316 Report Preparation 3 |

| Sixth Semester | ECE 350 Digital Electronics 4 |
| | ECE 357 Computer Architecture 3 |
| | ECE 451 Microcontroller Applications 3 |
| | ECE 380 Probabilistic Methods in Systems Analysis 3 |
| | CS 331 Data and File Structures 3 |

| Seventh Semester | ECE 481 Electrical/Computer Engineering Design I 4 |
| | ECE 371 Linear Systems 3 |
| | CS 485 Programming Languages 3 |
| | ME 406 Engineering Science Elective 3 |
| | AREA III The United States: Cultures and Issues 3 |
| | AREA IV Other Cultures and Civilizations 3 |

| Eighth Semester | ECE 455 Digital Signal Processing 3 |
| | CS 554 Operating Systems 3 |
| | ECE 482 Electrical/Computer Engineering Design II 3 |
| | AREA V Social and Behavioral Sciences 3 |
| | 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.**

**Electrical Engineering**

**Bachelor of Science in Engineering (Electrical)**

Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

**BACCAULAUREATE WRITING REQUIREMENT**

Students who have chosen the Electrical Engineering program must satisfy the Baccalaureate Writing Requirement by successfully completing both ECE 481 Electrical/Computer Engineering Design I and ECE 482 Electrical/Computer Engineering Design II.
### Electrical and Computer Engineering Courses (ECE)

Electrical and Computer Engineering (ECE) courses are listed below. Each course includes the following information: course title, credits, description, and prerequisites.

#### Seventh Semester — 17 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 481</td>
<td>Computer Engineering Design I</td>
<td></td>
</tr>
<tr>
<td>IME 310</td>
<td>Engineering Economy</td>
<td>3</td>
</tr>
<tr>
<td>ME 258</td>
<td>Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>AREA IV</td>
<td>Other Cultures and Civilizations*</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Eighth Semester — 16 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 482</td>
<td>Electrical/Computer Engineering Design II</td>
<td>3</td>
</tr>
<tr>
<td>ME 259</td>
<td>Engineering Elective</td>
<td>3</td>
</tr>
<tr>
<td>AREA V</td>
<td>Social and Behavioral Sciences*</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Departmental Approved Electives**</td>
<td>3</td>
</tr>
</tbody>
</table>

*At least two of these courses must be at the 300–400 level. Item "1" above must also be satisfied.

**See Electrical and Computer Engineering Advisor for a list of approved electives.

***Electrical and Computer Engineering Elective Group

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### Electrical and Computer Engineering Courses (ECE)

#### First Semester — 16 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 122</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 110</td>
<td>General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 111</td>
<td>General Chemistry I, Lab</td>
<td>1</td>
</tr>
<tr>
<td>IME 102</td>
<td>Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>IME 142</td>
<td>Engineering Graphics</td>
<td>3</td>
</tr>
<tr>
<td>AREA VIII</td>
<td>Health and Well-being</td>
<td>2</td>
</tr>
</tbody>
</table>

#### Second Semester — 16 hours

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>MATH 123</td>
<td>Calculus II</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 Lab</td>
<td>1</td>
</tr>
<tr>
<td>ECE 250</td>
<td>Digital Logic</td>
<td></td>
</tr>
<tr>
<td>CS 111</td>
<td>Computer Science I</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Third Semester — 16 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 272</td>
<td>Vector and Multivariate</td>
<td></td>
</tr>
<tr>
<td>PHYS 207</td>
<td>Electricity and Light</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 208</td>
<td>Electricity and Heat Lab</td>
<td>1</td>
</tr>
<tr>
<td>ECE 251</td>
<td>Introduction to Microprocessors</td>
<td>4</td>
</tr>
<tr>
<td>AREA I</td>
<td>Fine Arts*</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Fourth Semester — 15 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 374</td>
<td>Introduction to Linear Alg. and Diff. Equations</td>
<td>4</td>
</tr>
<tr>
<td>ECE 210</td>
<td>Circuit Analysis</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics of Science Elective**</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>AREA II</td>
<td>Humanities*</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Fifth Semester — 17 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 321</td>
<td>Electronics I</td>
<td>4</td>
</tr>
<tr>
<td>ECE 310</td>
<td>Network Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ECE 361</td>
<td>Electromagnetic Fields</td>
<td>4</td>
</tr>
<tr>
<td>ME 256</td>
<td>Statics</td>
<td>3</td>
</tr>
<tr>
<td>AREA III</td>
<td>The United States: Cultures and Issues*</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Sixth Semester — 17 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 320</td>
<td>Electronics I</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 in Signal/Systems Analysis</td>
<td>3</td>
</tr>
<tr>
<td>IME 316</td>
<td>Report Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

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### Requirement

Candidates for the Bachelor of Science in Engineering (ECE) 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 or V of 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.

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.
and project using C/C++. Prerequisites: ECE 251, CS 112.  
ECE 355 Digital Signal Processing (3–0)  
3 hrs. Systems level design of digital logic circuits using hardwired and programmable system controllers. Introduction to asynchronous synchronous 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: ECE 210, MATH 272 and 374; PHYS 207.  
ECE 371 Linear Systems (3–0)  
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 451 Microcontroller Applications (2–3)  
3 hrs. Analysis and design of microcomputer-based digital systems. Prerequisites: ECE 221, ECE 251.  
ECE 455 Digital Signal Processing (3–0)  
ECE 460 Communication Systems (3–0)  
3 hrs. Introduction to digital and analog communication systems. Design constraints of new systems 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 I (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 each course. This course, along with ECE 482, are approved as writing-intensive courses which may fulfill the baccalaureate-level writing requirement of the student’s curriculum. Prerequisite: ECE 316; consent of department chair.  
ECE 482 Electrical/Computer Engineering Design II (0–6)  
3 hrs. Senior electrical/computer engineering design project. A continuation of ECE 481. A formal written report and a formal presentation is required at the end of the semester. This course, along with ECE 481, are approved as writing-intensive courses which may fulfill the baccalaureate-level writing requirement of the student’s curriculum. Prerequisite: ECE 481.  
ECE 490 Independent Research and Development 1–4 hrs. Individual research or special project in Electrical/Computer Engineering. Open only to juniors and seniors having 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/Computer Engineering 1–4 hrs. A specialized course dealing with some particular area of electrical/computer 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/Computer 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 532 Introduction to Evolutionary Computation 3 hrs. Introduction to optimization algorithms which operate using the principles of Darwinian evolution. Biological and natural algorithms and applications. Genetic algorithms, evolutionary programs, and evolution strategies. Prerequisite: CS 331.  
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 a custom design will be briefly introduced. Introduction to contemporary CAD systems. Prerequisites: ECE 350 and ECE 355, or permission of the instructor.  
ECE 553 Advanced Microcontroller Applications 3 hrs. This course is intended to give graduate students and seniors the ability to specify, design, and test microcontroller-based digital systems. Prerequisite: ECE 451 or equivalent.  
ECE 555 Advanced Digital Signal Processing (3–0)  
ECE 557 Design of Reconfigurable Digital Machines 3 hrs. Introduction to hardware design languages. Modeling and simulation using VHDL. Advanced design techniques for digital machines based on Field Programmable Gate Arrays and Complex Programmable Logic Devices. System design with on-line reprogrammable FPGAs. Prerequisites: Computer engineering or electrical engineering major, ECE 357, ECE 451; or equivalent courses.  
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 455.

ECE 580 System Modeling and Simulation 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 ME 580. Prerequisites: ECE 371; ECE 380 or equivalent.

ECE 581 Astrodynamics (3-0) 3 hrs.
A course in celestial dynamics as applied to space travel. Students will learn the basics of satellite orbit definition, determination, and navigation. While the general n-body problem will be taken up, the emphasis will be placed on the calculation of geocentric and heliocentric orbits. The primary application will be satellite systems as applied to the Global Positioning System. This course is cross-listed with ME 581. Prerequisite: ME 256.

ECE 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 multiaxis servo systems. Appropriate time will be devoted to develop a sound basis in the electro-mechanical discipline. This course is cross-listed as ME 585. Prerequisites: ECE 210, ME 256 and ECE 371 or ME 360.

ECE 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 parametric 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 ME 586. Prerequisite: ECE 580 or ME 580.

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

Michael B. Atkins, Chair
Kailash M. Bafna
Steven E. Butt
Paul V. Engelmann
Tycho K. Fredericks
Tarun Gupta
Abdolazim Houshyar
Mitchel J. Keil
Leonard R. Lamberson
David M. Lyth
Larry A. Mallak
Sam N. Ramrattan
Jorge Rodriguez
Frederick Z. Stikins
Ralph Tanner
James VanDePolder
Bob E. White
Robert M. Wygant

Adjunct Faculty
John W. Boffelli
Dana A. Butt
Rathindra Dasgupta
Gerald M. Heilsley
Michael O. Monfore
Paul G. Nichols
Jay M. Shoemaker
Hayden M. Smith, Jr.
Teresa L. Wegscheid

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 Technology
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 the Haworth College of Business.

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 203B Kohman Hall (616 387-0333). Because of prerequisites and limited offering times, students must consult with an academic advisor for proper course sequence.

Curricula

Automotive Engineering Technology

Bachelor of Science

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.

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Automotive Engineering 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 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, CMOD, 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 129 semester credit hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall.
4. The following courses must be completed with a grade of "C" or better prior to enrollment in 300/400-level courses: CHEM 103, ECE 100, IME 102, PHYS 115, MATH 122 or 200. These courses also appear in darker italic print in the list below.

First Semester — 15 hours
IME 121 Automotive Chassis Systems 3
IME 150 Introduction to Manufacturing 3
MATH 118 Precalculus Mathematics 4
IME 102 Technical Communication 3
CS 104 Introductory C/C++ 2

Second Semester — 17 hours
IME 124 Automotive Engine Systems 3
IME 142 Engineering Graphics 3
IME 154 Machining Fundamentals 3
MATH 122 Calculus I (or MATH 200) 4
CHEM 103 General Chemistry I 4

Third Semester — 17 hours
IME 222 Fuels and Lubricants 3
IME 246 Intro to Computer-Aided Design 3
ECE 100 Fundamentals of Circuits and Electronics 3
PHYS 113 General Physics I 4
PHYS 114 General Physics I Lab 1
COM 104 Public Speaking 3

Fourth Semester — 16 hours
IME 281 Statics and Strength of Materials 4
ECE 101 Fundamentals of Electronics and Machines 3
MATH 260 Elementary Statistics 4
PHYS 115 General Physics II 4
PHYS 116 General Physics II Lab 1

PHYS 116 General Physics II Lab 1
Fifth Semester — 17 hours

IME 221 Automotive Automatic Transmission/Transaxle Systems 3
IME 283 Thermodynamics 3
IME 284 Fluid Mechanics and Hydraulics 2
CMD 254 Properties of Materials 3
CMD 255 Material Science Lab 2
ECON 201 Principles of Microeconomics 3

AREA I* Fine Arts 3

Sixth Semester — 15 hours

IME 224 Automotive Fuel and Electrical/Electronic Systems 4
IME 328 Quality Assurance and Control 3
IME 348 Design for Production 3

AREA II* Humanities 3

AREA III* United States Cultures and Issues 3

AREA IV* Other Cultures and Civilizations 3

Seventh Semester — 17 hours

IME 326 Operations Planning and Control 3
IME 327 Vehicle Systems Diagnosis 3
IME 422 Engineering Teams: Theory and Practice 3
IME 491 Multidisciplinary Senior Project Consultation 1

AREA III* United States Cultures and Issues 3

Eighth Semester — 15 hours

IME 356 Computer-Aided Manufacturing 3
IME 402 Supervision of Industrial Operations 3
IME 421 Automotive Design Analysis 3
IME 492 Multidisciplinary Senior Project 2
IME 493 Multidisciplinary Senior Project Consultation 1

AREA IV* Other Cultures and Civilizations 3

*At least two of these courses must be at the 300-400 level.

Engineering Graphics and Design Technology

Bachelor of Science

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 of the program to the student's interests and career goals. The course work prepares students to assume 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. The following courses must be completed with a grade of "C" or better prior to enrollment in 300-400 level courses: CHEM 103, ECE 100, HUM 115, MATH 123. These courses also appear in darker italic print in the list below.

First Semester — 17 hours

IME 142 Engineering Graphics 3
IME 150 Introduction to Manufacturing 3
IME 102 Technical Communication 3
MATH 122 Calculus I 4
CHEM 103 General Chemistry I 4

Second Semester — 18 hours

IME 144 Descriptive Geometry 3
IME 154 Machining Fundamentals 3
MATH 123 Calculus II 4
PHYS 113 General Physics 3
PHYS 114 General Physics I Lab 1
COM 104 Public Speaking 3

Third Semester — 17 hours

IME 246 Introduction to Computer-Aided-Design 3
IME 281 Statics and Strength of Materials 3
ECE 100 Fundamentals of Circuits and Electronics 3
IME 283 Thermodynamics 2

Fourth Semester — 15 hours

IME 284 Fluid Mechanics and Hydraulics 2
CMD 254 Properties of Materials 2
CMD 255 Material Science Lab 2
MATH 260 Elementary Statistics 3
ECE 101 Fundamentals of Electronics and Machines 3

AREA VIII Health and Well-being* 2

Fifth Semester — 16 hours

IME 250 Plastics Properties and Processing 3
IME 348 Design for Production 3
IME 481 Metrology 3
CS 111 Computer Science I 4
ECON 201 Principles of Microeconomics 3

Sixth Semester — 15 hours

IME 346 Programming for Computer-Aided-Design 3
IME 358 Computer-Aided Manufacturing 3
IME 422 Engineering Teams: Theory and Practice 3
IME 448 Computer-Aided Analysis 3

Seventh Semester — 14 hours

IME 444 Advanced Product and Machine Design 3
IME 446 CAD Applications 3
IME 491 Multidisciplinary Senior Proposal 2

AREA I* Fine Arts 3

Eighth Semester — 15 hours

IME 492 Multidisciplinary Senior Project 2
IME 493 Multidisciplinary Senior Project Consultation 1

AREA II* Humanities 3

AREA III* United States Cultures and Issues 3

AREA IV* Other Cultures and Civilizations 3

*At least two of these courses must be at the 300-400 level.

Engineering Management Technology

Bachelor of Science

The Engineering Management Technology curriculum provides academic background in humanities, social sciences, communication, and technical subjects relating to manufacturing systems. Human relation skills used in industry when 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 the several specialized areas listed below:

Cast Metals Option
IME 352 Metal Casting 3
IME 452 Die Casting 3
IME 455 Advanced Metal Casting 3
CMD 255 Materials Metallurgy 4

Computer Aided Design Option
IME 346 Programming for CAD 3
IME 348 Designing for Production 3
IME 358 Computer Aided Manufacturing 3
IME 446 CAD Applications 3

Computer Aided Manufacturing Option
IME 154 Machining Fundamentals 3
IME 348 Designing for Production 3
IME 358 Computer Aided Manufacturing 3
IME 458 Manufacturing Systems Integration 3

Plastics Manufacturing Option
IME 250 Plastics Properties and Processing 3
IME 350 Plastic Processing 3
IME 456 Plastics Assembly and Testing 3
IME 459 Mold Design and Construction 3

Quality Option
IME 348 Designing for Production 3
IME 481 Metrology 3
IME 487 Manufacturing Productivity Techniques 3
IME 508 Advanced Quality Management 3

Alternatively, the student may choose to obtain a minor in Integrated Supply Management.

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Engineering Management 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 must satisfy the following requirements in addition to those required by Western Michigan University:

1. A grade point average of 2.0 or better must be earned in courses presented for graduation with IME, ECE, and CMD 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 125 semester credit hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall, plus one spring session.
4. The following courses must be completed with a grade of "C" or better prior to enrollment in 300/400 level courses: CHEM 103, ECE 100, IME 102, PHYS 115 and 116, and MATH 122 or MATH 200. These courses also appear in darker italic print in the list below.

<table>
<thead>
<tr>
<th>First Semester</th>
<th>14 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 102</td>
<td>Technical Communication (Prof. 1)</td>
</tr>
<tr>
<td>IME 150</td>
<td>Introduction to Manufacturing (Area VII)</td>
</tr>
<tr>
<td>CHEM 103</td>
<td>General Chemistry I (Area VI)</td>
</tr>
<tr>
<td>MATH 118</td>
<td>Pre-Calculus I (Prof. 3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>15 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 142</td>
<td>Engineering Graphics</td>
</tr>
<tr>
<td>MATH 122</td>
<td>Calculus I (or MATH 200) (Prof. 4)</td>
</tr>
<tr>
<td>PHYS 113</td>
<td>General Physics I (Area VI)</td>
</tr>
<tr>
<td>PHYS 114</td>
<td>General Physics I Lab (Area VI)</td>
</tr>
<tr>
<td>ECE 100</td>
<td>Fundamentals of Circuits and Electronics</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>16 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 260</td>
<td>Elementary Statistics</td>
</tr>
<tr>
<td>CS 104</td>
<td>Introduction to C/C++</td>
</tr>
<tr>
<td>PHYS 115</td>
<td>General Physics II</td>
</tr>
<tr>
<td>CHEM 255</td>
<td>Materials Lab</td>
</tr>
<tr>
<td>ECE 101</td>
<td>Principles of Electronics and Machines</td>
</tr>
<tr>
<td>AREA II</td>
<td>Health and Well Being</td>
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<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>16 hours</th>
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</thead>
<tbody>
<tr>
<td>IME 246</td>
<td>Introduction to CAD</td>
</tr>
<tr>
<td>CMD 254</td>
<td>Properties of Materials</td>
</tr>
<tr>
<td>CMD 265</td>
<td>Material Science Lab</td>
</tr>
<tr>
<td>ACTY 210</td>
<td>Principles of Accounting</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Microeconomics (Area V)</td>
</tr>
<tr>
<td>AREA I</td>
<td>Fine Arts*</td>
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</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>17 hours</th>
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</thead>
<tbody>
<tr>
<td>IME 281</td>
<td>Statics and Strengths of Materials</td>
</tr>
<tr>
<td>IME 305</td>
<td>Work Analysis</td>
</tr>
<tr>
<td>IME 315</td>
<td>Work Analysis and Design Lab</td>
</tr>
<tr>
<td>IME 316</td>
<td>Report Preparation</td>
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<tr>
<td>IME 320</td>
<td>Engineering Cost Analysis</td>
</tr>
<tr>
<td>IME 326</td>
<td>Operations Planning and Control</td>
</tr>
<tr>
<td>IME 422</td>
<td>Engineering Teams: Theory and Practice (Area V)</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sixth Semester</th>
<th>16 hours</th>
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</thead>
<tbody>
<tr>
<td>IME 312</td>
<td>Systems Decision Making</td>
</tr>
<tr>
<td>IME 328</td>
<td>Quality Assurance and Control</td>
</tr>
<tr>
<td>IME 404</td>
<td>Plant Layout and Materials Handling</td>
</tr>
<tr>
<td>IME 422</td>
<td>Engineering Teams: Theory and Practice (Area V)</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>14 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 402</td>
<td>Supervision of Industrial Operations</td>
</tr>
<tr>
<td>IME 412</td>
<td>Industrial Systems Management</td>
</tr>
</tbody>
</table>

### IE 491 Multidisciplinary Senior Proposal (Prof. 2) 2
### Technical Elective 3
### Technical Elective 3

#### Eighth Semester — 15 hours

| MGMT 352 Human Resource Management | 3 |
| IME 492 Multidisciplinary Senior Project (Prof. 2) | 2 |
| IME 493 Multidisciplinary Senior Project Consultation | 1 |
| AREA II | Humanities | 3 |
| AREA III | United States and/or Issues | 3 |
| Technical Elective | 3 |

### Spring Semester of Senior Year — 6 hours

| IME 420 | Modern Industrial Systems | 3 |
| AREA IV | Other Cultures and Civilizations | 3 |

See departmental advisor for list of approved technical elective courses in each specialized area. Also see Technical Elective Requirements below.

At least two courses at the 300-400 level are required.

#### 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. See the Academic Advisor for specific course information on approved technical electives.

### Industrial Engineering

**Bachelor of Science in Engineering (Industrial)**

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 works in facilities planning and design, plant 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 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.

### BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Industrial Engineering curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing IME 491 Multidisciplinary Senior Project (2 hrs.) and IME 492 Multidisciplinary Senior Project (2 hrs.).

### REQUIREMENTS

Candidates for the Bachelor of Science in Engineering (Industrial) 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, 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.
3. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.

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 listed below in darker italic print.

<table>
<thead>
<tr>
<th>First Semester</th>
<th>16 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 102</td>
<td>Technical Communication</td>
</tr>
<tr>
<td>IME 142</td>
<td>Engineering Graphics</td>
</tr>
<tr>
<td>MATH 122</td>
<td>Calculus I (or MATH 200) (Prof. 4)</td>
</tr>
<tr>
<td>PHYS 205</td>
<td>Mechanics and Heat</td>
</tr>
<tr>
<td>PHYS 206</td>
<td>Mechanics and Heat Lab</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>15 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 206</td>
<td>Engineering Computations</td>
</tr>
<tr>
<td>ACTY 210</td>
<td>Principles of Accounting</td>
</tr>
<tr>
<td>MATH 123</td>
<td>Calculus II</td>
</tr>
<tr>
<td>CMD 255</td>
<td>Materials Lab</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Microeconomics (Area V)</td>
</tr>
<tr>
<td>AREA VIII</td>
<td>Health and Well-being*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>15 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 261</td>
<td>Engineering Statistics</td>
</tr>
<tr>
<td>MATH 272</td>
<td>Vector and Multivariate Calculus</td>
</tr>
<tr>
<td>MATH 253</td>
<td>Statics and Mechanics of Materials</td>
</tr>
<tr>
<td>PHYS 207</td>
<td>Electricity and Light</td>
</tr>
<tr>
<td>PHYS 208</td>
<td>Electricity and Light Lab</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>17 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 205</td>
<td>Work Design</td>
</tr>
<tr>
<td>IME 262</td>
<td>Probability for Engineers</td>
</tr>
<tr>
<td>ECE 210</td>
<td>Circuit Analysis</td>
</tr>
<tr>
<td>AREA II</td>
<td>Humanities*</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Microeconomics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>17 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 310</td>
<td>Engineering Economy</td>
</tr>
<tr>
<td>IME 318</td>
<td>Report Preparation</td>
</tr>
<tr>
<td>IME 307</td>
<td>Computer Controlled Manufacturing Systems</td>
</tr>
<tr>
<td>ECE 211</td>
<td>Machines and Electronic Circuits</td>
</tr>
<tr>
<td>MATH 374</td>
<td>Introduction to Linear Algebra and Differential Equations</td>
</tr>
</tbody>
</table>
# Manufacturing Engineering Technology

## Bachelor of Science

Accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology

The Manufacturing Engineering Technology curriculum offers preparation for entry positions in manufacturing industries. Understanding of materials and production processes equips graduates to plan manufacturing practices and to develop tools, machines, and systems necessary for efficient production. Program options allow students to specialize in cast metals or plastics.

### 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, and ME 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 134 semester hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall.
4. The following courses must be completed with a grade of "C" or better prior to enrollment in 300/400-level courses: CHEM 103, ECE 100, IME 102, PHYS 115, MATH 122 or 200. These courses also appear in darker italic print in the list below.

## First Semester — 17 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 121</td>
<td>Automotive Chassis</td>
<td>3</td>
</tr>
<tr>
<td>IME 122</td>
<td>Automobile in Society</td>
<td>3</td>
</tr>
<tr>
<td>ECE 100</td>
<td>Fundamentals of Circuits and Electronics</td>
<td>4</td>
</tr>
<tr>
<td>MATH 118</td>
<td>Precalculus Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 101</td>
<td>General Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>IME 102</td>
<td>Technical Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

## Second Semester — 16 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 154</td>
<td>Machining Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>MATH 122</td>
<td>Calculus I (or MATH 200)</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 113</td>
<td>General Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 114</td>
<td>General Physics Lab I</td>
<td>1</td>
</tr>
<tr>
<td>AREA VIII</td>
<td>Health and Wellness</td>
<td>2</td>
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</table>

## Third Semester — 17 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 246</td>
<td>Introduction to Computer Aided Design</td>
<td>3</td>
</tr>
<tr>
<td>ECE 100</td>
<td>Fundamentals of Circuits and Electronics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 115</td>
<td>General Physics II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 116</td>
<td>General Physics II Lab</td>
<td>1</td>
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<tr>
<td>COM 104</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics</td>
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## Fourth Semester — 18 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>IME 250</td>
<td>Plastics Properties and Processing</td>
<td>3</td>
</tr>
<tr>
<td>CMD 254</td>
<td>Properties of Materials</td>
<td>2</td>
</tr>
<tr>
<td>CMD 255</td>
<td>Material Science Lab</td>
<td>2</td>
</tr>
<tr>
<td>IME 281</td>
<td>Statics and Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td>ECE 101</td>
<td>Fundamentals of Electronics and Machines</td>
<td>3</td>
</tr>
<tr>
<td>MATH 260</td>
<td>Elementary Statistics</td>
<td>4</td>
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</table>

## Fifth Semester — 16 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>IME 283</td>
<td>Thermodynamics</td>
<td>2</td>
</tr>
<tr>
<td>IME 284</td>
<td>Fluid Mechanics and Hydraulics</td>
<td>2</td>
</tr>
<tr>
<td>IME 326</td>
<td>Operations Planning and Control</td>
<td>3</td>
</tr>
<tr>
<td>IME 348</td>
<td>Designing for Production</td>
<td>3</td>
</tr>
<tr>
<td>IME 352</td>
<td>Metal Casting</td>
<td>3</td>
</tr>
<tr>
<td>IME 357</td>
<td>Fabrication and Pressworking</td>
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## Sixth Semester — 15 hours

<table>
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<tr>
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<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>IME 320</td>
<td>Engineering Cost Analysis</td>
<td>3</td>
</tr>
<tr>
<td>IME 328</td>
<td>Quality Assurance and Control</td>
<td>3</td>
</tr>
<tr>
<td>IME 356</td>
<td>Computer-Aided Manufacturing</td>
<td>3</td>
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<td>Approved Elective</td>
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</tr>
<tr>
<td>AREA IV</td>
<td>Other Cultures and Civilizations</td>
<td>4</td>
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## Seventh Semester — 17 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>IME 402</td>
<td>Supervision of Industrial Operations</td>
<td>3</td>
</tr>
<tr>
<td>IME 422</td>
<td>Engineering Teams: Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>IME 481</td>
<td>Metrology</td>
<td>3</td>
</tr>
<tr>
<td>IME 491</td>
<td>Multidisciplinary Senior Proposal</td>
<td>2</td>
</tr>
<tr>
<td>Approved Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>AREA I</td>
<td>Fine Arts</td>
<td>3</td>
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</table>

## Eighth Semester — 15 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>IME 458</td>
<td>Advanced Manufacturing Systems</td>
<td>3</td>
</tr>
<tr>
<td>IME 492</td>
<td>Multidisciplinary Senior Project</td>
<td>2</td>
</tr>
<tr>
<td>IME 493</td>
<td>Multidisciplinary Senior Project Consultation</td>
<td>1</td>
</tr>
<tr>
<td>Approved Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>AREA II</td>
<td>Humanities</td>
<td>3</td>
</tr>
<tr>
<td>AREA III</td>
<td>United States: Culture and Issues</td>
<td>3</td>
</tr>
</tbody>
</table>

* At least two of these courses must be at the 300-400 level.

### Cast Metals Option (total hours for graduation — 134)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMD 353</td>
<td>Physical Metallurgy I</td>
<td>4</td>
</tr>
<tr>
<td>IME 452</td>
<td>Die Casting</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 300</td>
<td>Co-op Education (in Cast Metals Industry)</td>
<td>3</td>
</tr>
<tr>
<td>IME 455</td>
<td>Advanced Castings</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 350</td>
<td>Production Thermoplastic Processing</td>
<td>3</td>
</tr>
<tr>
<td>IME 456</td>
<td>Plastics Assembly and Testing</td>
<td>3</td>
</tr>
<tr>
<td>IME 459</td>
<td>Mold Design and Construction</td>
<td>3</td>
</tr>
<tr>
<td>IME 550</td>
<td>Advanced Plastics Processing</td>
<td>3</td>
</tr>
</tbody>
</table>

## Manufacturing Technology Minor

The manufacturing technology minor is available to Haworth College of Business students. It is recommended that students selecting the manufacturing technology minor fulfill their General Education Area VI requirements by taking CHEM 100 and 111 or CHEM 103 and either PHYS 113 or 114 and Proficiency 2 or 4b by taking MATH 122 or 200. The manufacturing technology minor totals 18–19 semester credit hours including three required courses and three approved elective courses selected in consultation with a student's major advisor.

### REQUIRED COURSES — 9 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 142</td>
<td>Engineering Graphics</td>
<td>3</td>
</tr>
<tr>
<td>IME 150</td>
<td>Introduction to Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>IME 328</td>
<td>Quality Assurance and Control</td>
<td>3</td>
</tr>
</tbody>
</table>

### APPROVED ELECTIVES — 9 hours

Select three (3) courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMD 132</td>
<td>Wood Processing</td>
<td>3</td>
</tr>
<tr>
<td>CMD 254</td>
<td>Properties of Materials</td>
<td>3</td>
</tr>
<tr>
<td>CMD 255</td>
<td>Materials Science Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>ECE 100</td>
<td>Fundamentals of Circuits and Electronics</td>
<td>3</td>
</tr>
<tr>
<td>ECE 101</td>
<td>Fundamentals of Electronics and Machines</td>
<td>3</td>
</tr>
<tr>
<td>ECE 250</td>
<td>Digital Logic I</td>
<td>3</td>
</tr>
<tr>
<td>IME 121</td>
<td>Automotive Chassis Systems</td>
<td>3</td>
</tr>
<tr>
<td>IME 122</td>
<td>Automobile in Society</td>
<td>3</td>
</tr>
<tr>
<td>IME 154</td>
<td>Machining Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IME 246</td>
<td>Introduction to Computer Aided Design</td>
<td>3</td>
</tr>
<tr>
<td>IME 250</td>
<td>Plastics Properties and Processing</td>
<td>3</td>
</tr>
<tr>
<td>IME 328</td>
<td>Operations Planning and Control</td>
<td>3</td>
</tr>
<tr>
<td>IME 350</td>
<td>Production Thermoplastics Processing</td>
<td>3</td>
</tr>
<tr>
<td>IME 352</td>
<td>Metal Casting</td>
<td>3</td>
</tr>
<tr>
<td>IME 358</td>
<td>Computer Aided Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>FAPR 354</td>
<td>Paper Industry Processes</td>
<td>3</td>
</tr>
</tbody>
</table>

## Industrial and Manufacturing Engineering Courses (IME)

A list of approved General Education courses can be found in "Graduation Requirements and Academic Advising" 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 techniques, 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, 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, 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, dimensioning, tolerancing, threads and fasteners, weldments, detail and assembly drawing, drafting and basic elements of descriptive geometry. All work is according to 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 a broad range of modern manufacturing techniques utilized in industry. Exploration of production methods as influenced by historical impact, materials, processes, productivity, ethics, and social/environmental concerns. The global challenges to product design, performance, quality, and economic considerations will be investigated.

IME 154 Machining Fundamentals (2–3) 3 hrs. Theory and laboratory experience in the basic techniques used in removal 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, ergonomics in the workplace, and work measurement. A semester project requiring the design of a work station is required. Prerequisites: IME 206 or concurrent, IME 102.

IME 206 Engineering Computations (3–0) 3 hrs. A basic course introducing students to software and concepts useful for engineering computations and decision making. Instruction includes computer-mediated communication, FORTRAN 1977, and Excel. Familiarization with the VAX and PC resources located in the Computer Aided Engineering Center. An emphasis is placed on learning structured problem solving and 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, computations for pumps, valve mechanisms, clutches, bands, and gears. Includes a study of bearing application, lubrication and cooling of the transmission/transaxle systems testing. Prerequisite: PHYS 113 and PHYS 114.

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 octave requirements, octane numbers, viscosity; volatility, flash and fire point, grease penetration, API degree, and dropping point of grease. Prerequisite: CHEM 110 and 112 or CHEM 103.

IME 224 Fuel and Electrical/Electronic Systems (3–4) 4 hrs. The operation, study of 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, driveability, 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 computer-aided design, 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 operation. 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, lamination, coating, welding, and decorating of thermoplastic and thermoset materials. Prerequisites: 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 125; 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. Forces on structures, moments, equilibrium. Stresses and deformation in axially-loaded members, torsion members and beams. Elementary design of structural members. Prerequisites: MATH 122 or MATH 200.

IME 283 Thermodynamics (2–0) 2 hrs. Fundamentals of thermodynamics. First and second law for open and closed systems. Basics of heat transfer. Prerequisites: PHYS 113/114; MATH 122 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 (Arr.) 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 input procedures. 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 307 during the semester following IME 307. Prerequisites: IME 206, ECE 211 (ECE 211 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 system. An introduction to 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, game theory, linear, and dynamic programming. Prerequisite: IME 261, IME 262.

IME 312 Systems Decision Making (3–0) 3 hrs.
Investigating decision making opportunities while incorporating mathematical models and environmental factors such as time, uncertainty, constraints, and multiple goals. Specific emphasis is placed on analyzing problems using a systems approach. Topics include systems analysis, operations research methodologies, dynamic systems, and the application of a variety of computer tools to aid the decision making process. Prerequisite: MATH 216.

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 368 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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 292.

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 122 or MATH 200.

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. Applications. 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 as applied to parts gages and tooling. The use of CAD is a major part of this course. Prerequisite: IME 154, IME 246, and IME 261.

IME 350 Production Thermoplastic Processing (2–3) 3 hrs.
Injection molding, blow molding, extrusion and thermoforming. 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 261, 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 366 CAD/CAM Fundamentals (3–0) 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 404 Plant Layout and Material Handling (3–3) 4 hrs.
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. Includes an intensive semester project to plan and design a manufacturing facility. Prerequisites: IME 205, 310, 316, 416 or taken concurrently.

IME 412 Industrial Systems Management (3–0) 3 hrs.
Principles and applications of advanced systems management, including project management, continuous improvement and advanced quality systems. Computer tools to manage systems will be introduced. Philosophes of systems management will be discussed. Students will acquire advanced systems management skills as applied to multiple industries, including manufacturing and service. Prerequisite: IME 312.

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 416 Operations Control in Industry (3–3) 4 hrs.
The function of production and inventory operations. Control of manufacturing production systems and modeling. Prerequisites: IME 206, IME 261, IME 262, IME 311.

IME 420 Modern Industrial Systems (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 automobiles. 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 local and national policies and data analysis. Courses designed to train students for careers in the field. Focus on the psychological and anthropometric requirements of human factors in the design of equipment. Prerequisite: IME 316, junior standing. IME 316 may be taken concurrently.

IME 430 Simulation Modeling and Analysis 3–0
3 hrs.
Use of computer simulation as a modeling tool, with 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 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 storage, parts, component will be provided. Prerequisites: 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 anthropometric 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 144, 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 graphics 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 448 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 283, IME 284, IME 348, CS 111.

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 determined related to parts being produced. Prerequisite: IME 352.

IME 453 Maintenance in Manufacturing 2–3
3 hrs.
Installation, adjustment, and maintenance of equipment. Machinery 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 cast metal parts. Prerequisite: IME 352.

IME 456 Plastics Assembly and Testing 2–3
3 hrs.

IME 458 Manufacturing Systems Integration 2–3
3 hrs.
Analysis and synthesis of integrated manufacturing systems. Topics include modeling of manufacturing systems and the role of computer control and integration of manufacturing systems. Prerequisites: IME 104, ECE 101 or 211 (ECE 211 may be taken concurrently).

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 290.

IME 461 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 487 Manufacturing Productivity Techniques 3–0
3 hrs.
Application of modern processes, principles of productive tools 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. This course is cross-listed with MKTG 485. Prerequisites: Senior standing; ISM major or minor or permission of instructor.

IME 490 Independent Research and Study 1–6
3 hrs.
Supervision of independent study. Prereq: 1-6 hrs. Independent studies in engineering. Open 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 491 Multidisciplinary Senior Proposal 1–4
3 hrs.
Proposal of an individual research project 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 492 Multidisciplinary Senior Project 1–4
3 hrs.
Open-ended multidisciplinary team projects involving systems design, analysis, or application. Results in a tangible system, written report, and presentation. This course, when completed satisfactorily with IME 491, is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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
3 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 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 122 or 200, 260 or 365, or equivalent.

IME 502 Manufacturing Engineering Fundamentals 3–0
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, Geometric Dimensioning and Tolerancing (GD & T), EIA/ISO format (G & M code) 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 can not be applied for credit toward any masters or graduate program offered by the IME department. This course is intended to meet the stated prerequisite requirements normally satisfied by IME 246, IME 358, and IME 481 in the graduate program. Prerequisites: MATH 122 or 200, CS 104 or 105, IME 142 and IME 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: plastics, metals, ceramics, wood, and composites materials. Analysis and property definition 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 256 in the graduate program. Prerequisites: CHEM 103, PHYS 115, IME 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 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, factorials, 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 individual, 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 in automated graphics, wireframe, surface and solids modeling, 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. Prerequisites: Basic 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**

**Bachelor of Science in Engineering (Manufacturing)**

**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 2038 Kohrmann Hall, Western Michigan University, Kalamazoo, Michigan (616) 387-4033.

**Baccalaureate Writing Requirement**
Students who have chosen the Manufacturing Engineering curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing IME 316 Report Preparation.

**Requirements**
Candidates for the Bachelor of Science in Engineering (Manufacturing) 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 counted for graduation.

4. Complete the following program of 129 semester credit hours.

**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

**Second Semester** — 17 hours
- MATH 123 Calculus II 4
- CHEM 111 General Chemistry Lab 1
- CHEM 112 General Chemistry 1
- MFE 120 Engineering Design and Verification 3

**Third Semester** — 16 hours
- MATH 272 Vector and Multivariate Calculus 4
- PHYS 205 Mechanics and Heat 4
- PHYS 208 Mechanics and Heat Lab 1
- CS 200 Programming Language Experience 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 281 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 Design for 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

**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)

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 (GDT) 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) 4 hrs.
- Structure and properties of metallic materials. Considerations for selection in applications. Machinability. A three-hour laboratory is required. Prerequisites: CHEM 110 and 111; PHYS 205.

MFE 330 Manufacturing Materials I (3-3) 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.
- Introduction of 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 (2-3) 4 hrs.

MFE 424 Tool Design (2-3) 3 hrs.

MFE 430 Manufacturing Materials II (3-3) 4 hrs.

MFE 440 Production Engineering (3-0) 3 hrs.
- The quantitative and computer-based methods and techniques of planning and controlling manufacturing operations are presented. Topics included are product design and process selection, design of manufacturing facilities and jobs, aggregate planning, inventory systems, operations scheduling, and system improvement. Prerequisites: IME 261, MATH 230; MATH 272.

MFE 442 Quality Assurance (3-0) 3 hrs.
- The tools necessary to control and assure quality in the manufacturing environment are addressed. They include statistical process control, product design quality, manufacturing process quality systems, process capability, lot-by-lot sampling, gage reproducibility and repeatability, design of experiments, and quality improvement tools such as Pareto analysis, Ishikawa diagrams, system flowcharting. Prerequisites: IME 261; MATH 272.

MFE 444 Simulation of Industrial Operations (2-3) 3 hrs.
- Use of computer simulation as a modeling tool with emphasis on most current simulation languages and simulators is presented. Every week an industrial case study is introduced and, in a lab environment, the simulation model is developed. Statistical analysis of input data and simulation results are examined. Prerequisites: IME 261; a course in computer programming using C.

MFE 480 Senior Design Project I (2-0) 2 hrs.
- First of a two-semester sequence on engineering design in which students work in teams on approved design projects. A preliminary design and feasibility report are required at the end of this course. Project will be completed in MFE 482. Prerequisites: Consent of instructor. Co-requisite: MFE 420; MFE 424.

MFE 482 Senior Design Project II (2-0) 2 hrs.
- Completion of the engineering design project started in Senior Design Project I. A formal written and oral presentation is required. Prerequisite: MFE 480.
MECHANICAL AND AERONAUTICAL ENGINEERING

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, Kalazomos Automobile Restorers Club, 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 scholastically, 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 meeting 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.

Internships
A number of students choose to do internships while continuing their studies. Taking a reduced course load enables the student to gain valuable engineering experience while being continuously enrolled.

Curricula
Aeronautical Engineering
Bachelor of Science in Engineering (Aeronautical)
Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

BACCALAUREATE WRITING REQUIREMENT
Students who have chosen the Aeronautical Engineering (Aeronautical) must satisfy the Baccalaureate Writing Requirement by successfully completing ME 365 Machine Design I (3 hrs.) or ME 480 Mechanical and Aeronautical Engineering Project (3 hrs.).

REQUIREMENTS
Candidates for the Bachelor of Science in Engineering (Aeronautical) 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 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.

First Semester — 17 hours
MATH 122 Calculus I 4
CHEM 110 General Chemistry I 3
CHEM 111 General Chemistry Laboratory I 1
CS 106 BASIC for Engineers 1
AREA I General Education* 3
IME 102 Technical Communication 3
AREA VIII General Education 2

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/Mult. 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 Introductory Modern Physics 3
AND
PHYS 310 Introductory Modern Physics Lab 1
OR
CHEM 112 General Chemistry II 3
AND
CHEM 113 General Chemistry Laboratory II 1

Fifth Semester — 16 hours
ME 362 Theory of Engineering Experimentation 3
ME 257 Mechanics of Materials 4
ME 358 Mechanism Analysis 3
ME 356 Fluid Mechanics 3
AREA V General Education 3
Candidates for the Bachelor of Science in the following requirements in addition to those Aeronautical Engineering Project.

1. To satisfy professional engineering requirements in Mechanical Engineering, students must satisfy the Engineering curriculum will satisfy the Design I or ME 480 Mechanical and Non-metallic Materials.

2. A student is required to earn a grade of "C" or better in all 100-200 level departmental pre-requisite courses before enrollment is permitted in the next sequence course.

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 131-134 semester credit hours.

5. *At least two of these courses must be at the 300-400 level.

**Mechanical Engineering**

**Bachelor of Science in Engineering (Mechanical)**

Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

**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 College of Engineering and Applied Sciences section.

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.

**Baccalaureate Writing Requirement**

Students who have chosen the Mechanical Engineering curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing ME 365 Machine Design I or ME 480 Mechanical and Aeronautical Engineering Project.

**Requirements**

Candidates for the Bachelor of Science in Engineering (Mechanical) 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. These 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 AAE, ECE, IME, and ME prefixes.

3. *At least two of these courses must be at the 300-400 level.

**Group electives include the following:**

1. **Group 1 — Thermodynamics** Select one of the following:

   - ME 432 Thermodynamics II
   - AAE 466 Aeronautical Propulsion Systems

2. **Group 2 — Advanced Design** Select one of the following:

   - ME 453 Machine Design II
   - ME 459 Design of Thermal Systems
   - ME 469 Engine Design
   - AAE 469 Aircraft Design

3. **Group 3 — Elective Emphasis** Select a minimum of 12 hours. Two courses must have laboratory experience (marked with an L); one laboratory course must be chosen from the Thermodynamics or Fluid Dynamics areas, and one must come from the Solid Mechanics and Structures area. Also, at least one course must be selected from the Design category.

   - ME 439 Design of Thermal Systems
   - ME 467 Internal Combustion Engines
   - AAE 466 Aeronautical Propulsion Systems
   - ME 468 Engine Design
   - Fluid Dynamics
   - AAE 361 Flight Vehicle Aerodynamics
   - AAE 472 Compressible Fluid Flow
   - Solid Mechanics and Structures
   - ME 367 Internal Combustion Engines
   - ME 457 Experimental Solid Mechanics
   - ME 450 Non-Metallic Materials
   - ME 470 Vehicle Structural Design
   - ME 575 Tribology—Principles and Applications
   - AAE 463 Aircraft Structural Design
   - Dynamics
   - ME 459 Dynamics of Machinery
   - ME 466 Vehicle Dynamics
   - ME 481 Vehicle Design
   - ME 555 Intermediate Dynamics
   - ME 558 Mechanical Vibrations
   - ME 563 Structural Vibration
   - ME 564 Engineering Noise Control
   - ME 469 Aircraft Stability and Control

*This course has a prerequisite that is an elective.*
Aeronautical Engineering Courses (AAE)

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. Prerequisites: AAE 450 and AAE 460.

AAE 480 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 control and control power. Man-machine interaction and effect on control surface sizing. Prerequisite: AAE 361.

AAE 483 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 365.

AAE 486 Aeronautical Propulsion Systems (3–3) 4 hrs.
Thermodynamics and fluid dynamics of aeronautical rotating turbomachines, including axial turbines, compressors, mixed flow, and centrifugal machines. Analytical and computational methods will be used to design and determine performance of aircraft propulsion systems. Prerequisites: ME 356 and ME 431.

AAE 489 Aircraft Design (3–0) 3 hrs.
Conceptual and preliminary design of aircraft emphasizing performance, stability and control, and total vehicle efficiency. Prerequisite: AAE 460 and AAE 450.

AAE 472 Compressible Fluid Flow (3–0) 3 hrs.
Introduction to compressible flow focusing on isentropic flow of perfect gases, normal and oblique shock waves, Prandtl-Meyer flow, linearized flow, and design of supersonic airfoils, nozzles, and wind tunnels. Prerequisites: ME 202, ME 356.

AAE 490 Topics in Aeronautical Engineering (1–6 hrs)
A specialized course dealing with a particular area of aeronautical engineering not included in other course offerings. May be repeated for credit with a different topic for up to a total of six credits. Prerequisite: Departmental consent.

AAE 499 Independent Study (1–6) 1–6 hrs.
An independent study assignment available only by special arrangement with an instructor and approved by the department curriculum committee. A written report will be required and filed with the department on completion. May be repeated for up to a total of six hours. Prerequisite: Departmental consent.

Mechanical Engineering Courses (ME)

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. Prerequisites: MATH 122, 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 110 and 111, 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 275 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 280 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 384.) 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: ME 220 or AAE 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 using principles of engineering science. Analysis of common engine systems for reciprocating and continuous flow internal combustion engines. Prerequisite: MATH 272, ME 258, ME 232.

ME 375 Experimental Stress Analysis (2–3) 3 hrs.
Principles and methods of non-destructive testing including internal and surface industrial methods of strain-gage techniques, planning of test procedures, interpretation of test results, and technical report preparation. NOT FOR ENGINEERING CREDIT. Prerequisites: IME 281, CMD 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...
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 design 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 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.
Principles and methods of mechanical testing, stress and strain analysis under monotonic and cyclic loading, fatigue behavior and fracture involving life prediction and prevention of failure. Experimentation and theory verification, 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.
Kinematic and dynamic analyses of machine mechanisms, and rotating systems. Topics include open and closed loop kinematic analyses, Newton's law for rigid body motion, inertias, actuators and energy methods, flywheels static and dynamic balancing, Lagrange's equations of motion, and introductory vibration analysis. 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 356, 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 introduction 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. Prerequisites: ME 335 and 360. Corequisites: ME 439 or ME 453 or ME 468 or AAE 450 or AAE 460.

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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: ME 479; and ME439 or ME453 or ME 468 or AAE 450 or ME 460.

ME 481 Vehicle Design (2–3) 3 hrs.
Design of vehicle systems and/or subsystems. Prerequisites: ME 252, 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 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: Consent of instructor.

ME 564 Engineering Noise Control (3-0) 3 hrs.

ME 569 Principles of Fatigue and Fracture 3 hrs.
Basics of experimental techniques and modeling used in industry to study inelastic deformations, fatigue, and fracture of engineering materials and structures. Prerequisite: ME 365 or consent of instructor.

ME 571 Gas Dynamics (3-0) 3 hrs.
Basic equations of compressible flow, isentropic relations, and normal and oblique shock. Prandtl-Meyer expansion, Fanno Line, and Rayleigh Line flow. Applications to nozzles, 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-NTU 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.
Rankine cycles, single-stage and multi-stage compression, ideal and actual cycles. Compressor characteristics and types of compressors. Performance variation with source-sink temperatures, heat pumps, Cryogenic applications. Mobile air-conditioning and refrigeration. Prerequisites: ME 431, ME 432.

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 581 Astrodynamics (3-0) 3 hrs.
A course in celestial dynamics as applied to space travel. Students will learn the basics of satellite orbit definition, determination, and navigation. While the general n-body problem will be taken up, the emphasis will be placed on the calculation of geocentric and heliocentric orbits. The primary application will be satellite systems as applied to the Global Positioning System. This course is cross-listed with ECE 581. Prerequisite: ME 258.

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 multiaxis servo systems. Appropriate time will be devoted to develop a sound basis in the electric/mechanics 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 parametric values. The emphasis will be placed on the application of modeling to practical problems in the students' specific discipline. This course is cross-listed as ECE 586. Prerequisites: 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.

Academic Advising
Students should contact the Paper and Printing Science and Engineering academic advisors 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 credit must be approved by a departmental advisor, curriculum committee, and department chair. The academic advisor for Paper Science and Paper Engineering is Barbara Vilenski, located in Room 2670 McCracken Hall. Appointments may be made by calling (616) 387-2775. The academic advisor for Chemical Engineering is Dr. Peter Parker, located in Room 2610 McCracken Hall. Appointments may be made by calling (616) 387-2772. The academic advisor for Printing is Karin 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, chemical processing, 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 this catalog.

REQUIRED PREREQUISITE GRADE
Students graduating from Paper Science, Paper Engineering/Process, Paper Engineering/Environmental, and Paper Science and Engineering minor must have a grade of "C" or better in all PAPR prefixed prerequisite courses or their equivalents.
Students graduating in Chemical Engineering or with a Chemical Engineering minor must earn a grade of "C" or better in all CHEG prefixed prerequisite courses or their equivalents.

MINOR IN PAPER SCIENCE AND ENGINEERING A minor in paper science and engineering may be earned by completing the following 20 semester hours of departmental courses: PAPR 100, PAPR 103, PAPR 203, PAPR 204, PAPR 306, and PAPR 352. The minor is suitable for other engineering graduates and physics and chemistry graduates, as they will have most of the prerequisites for these courses.

MINOR IN CHEMICAL ENGINEERING A minor in Chemical Engineering may be earned by completing the following 20 semester hours of Chemical Engineering courses: CHEG 281, CHEG 306, CHEG 311, CHEG 312, CHEG 330, and CHEG 410. In addition, students would complete CHEM 112/113 and CHEM 430 as prerequisites for CHEG 410. The minor is most suitable for other engineering graduates and physics and chemistry graduates.

Curricula

Paper Science

Bachelor of Science

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Paper Science major will satisfy the Baccalaureate Writing Requirement by successfully completing PAPR 485 Research Design.

REQUIREMENTS

Candidates for the Bachelor of Science 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) which includes the courses in one of the following elective sequences: 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.

PAPER ENGINEERING/ PROCESS

First Semester — 17 hours
PAPR 100 Introduction to Pulp and Paper Manufacturing 3
CHEM 110 General Chemistry I 3
CHEM 111 General Chemistry I 3
MATH 122 Calculus I 4
CS 106 BASIC for Engineers 1
PEGN Physical Education 2
AREA I General Education 3

Second Semester — 16 hours
PAPR 103 Printing Processes 2
CHEM 112 General Chemistry II 3
CHEM 113 General Chemistry Laboratory II 1
MATH 123 Calculus II 4
IME 102 Technical Communication 3
AREA II General Education 3

Third Semester — 18 hours
PAPR 203 Pulp and Bleaching 4
IME 261 Engineering Statistics OR MATH 261 Engineering Statistics 3

PHYS 205 Mechanics and Heat 4
CHEM 375 Organic Chemistry I 3
CHEM 376 Organic Chemistry Lab I 1
MATH 272 Vector and Multivariate Calculus 4
PAPR 306 Material and Energy Balance 4
PAPR 333 Carbohydrate and Lignin Chemistry 3
AREA V General Education (ECON 201) 3

Fourth Semester — 19 hours
PAPR 204 Stock Preparation and Papermaking 4
PAPR 261 Instrumental 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

Sixth Semester — 17 hours
PAPR 312 Unit Operations in Chemical Engineering II 3
PAPR 342 Coating 4
PAPR 352 Recycling and Deinking 3
PAPR 430 Surface and Wet End Science 3
MATH 374 Introduction to Linear Algebra and Differential Equations 4

Seventh Semester — 15 hours
PAPR 310 Work Experience/Co-op 1
PAPR 311 Unit Operations in Chemical Engineering I 3
PAPR 440 Senior Seminar 1
PAPR 483 Process Control I 4
PAPR 485 Research Design 3
CHEM 430 Physical Chemistry I 3

Eighth Semester — 17 hours
PAPR 440 Seminar 1
CHEM 436 Physical Chemistry Lab 2
CHEM 437 Organic Chemistry II 4
CHEM 431 Physical Chemistry II 3
CHEM 436 Physical Chemistry Lab 1
CHEM 520 Instrumental Methods in Chemistry 3
MATH 567 Statistical Design and Analysis 4

Priority Electives are shown in italic type.

Paper Engineering

Bachelor of Science in Engineering (Paper)

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 College of Engineering and Applied Sciences section.

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 students in good academic standing as defined by the University will be admitted to this curriculum.

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Paper Engineering major will satisfy the Baccalaureate Writing Requirement by successfully completing PAPR 485 Research Design.

REQUIREMENTS

Candidates for the Bachelor of Science in Engineering (Paper) must satisfy the following requirements in addition to those required by Western Michigan University:

1. All 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."
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, 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.

First Semester — 17 hours
PAPR 100 Introduction to Pulp and Paper Manufacturing 3
CHEM 110 General Chemistry I 3
CHEM 111 General Chemistry I 3
MATH 122 Calculus I 4
CS 106 BASIC for Engineers 1
PEGN Physical Education 2
AREA I General Education 3

Second Semester — 16 hours
PAPR 103 Printing Processes 2
CHEM 112 General Chemistry II 3
CHEM 113 General Chemistry Laboratory II 1
MATH 123 Calculus II 4
IME 102 Technical Communication 3
AREA II General Education 3

Third Semester — 18 hours
PAPR 203 Pulp and Bleaching 4
IME 261 Engineering Statistics OR MATH 261 Engineering Statistics 3

PHYS 205 Mechanics and Heat 4
CHEM 375 Organic Chemistry I 3
CHEM 376 Organic Chemistry Lab I 1
MATH 272 Vector and Multivariate Calculus 4
PAPR 306 Material and Energy Balance 4
PAPR 333 Carbohydrate and Lignin Chemistry 3
AREA V General Education (ECON 201) 3

Fourth Semester — 19 hours
PAPR 204 Stock Preparation and Papermaking 4
PAPR 261 Instrumental 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

Sixth Semester — 17 hours
PAPR 312 Unit Operations in Chemical Engineering II 3
PAPR 342 Coating 4
PAPR 352 Recycling and Deinking 3
PAPR 430 Surface and Wet End Science 3
MATH 374 Introduction to Linear Algebra and Differential Equations 4

Seventh Semester — 15 hours
PAPR 310 Work Experience/Co-op 1
PAPR 311 Unit Operations in Chemical Engineering I 3
PAPR 440 Senior Seminar 1
PAPR 483 Process Control I 4
PAPR 485 Research Design 3
CHEM 430 Physical Chemistry I 3

Eighth Semester — 17 hours
PAPR 440 Seminar 1
CHEM 436 Physical Chemistry Lab 2
CHEM 437 Organic Chemistry II 4
CHEM 431 Physical Chemistry II 3
CHEM 436 Physical Chemistry Lab 1
CHEM 520 Instrumental Methods in Chemistry 3
MATH 567 Statistical Design and Analysis 4

Priority Electives are shown in italic type.
### PAPER AND PRINTING SCIENCE AND ENGINEERING 211

#### 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
- **CHEM 333** Carbohydrate and Lignin Chemistry .................................... 3
- **AREA V** General Education (ECON 201) ............................................. 3

#### Sixth Semester — 17 hours
- **PAPR 312** Unit Operations in Chemical Engineering II .......................... 3
- **PAPR 342** Coating ................................................................................. 3
- **PAPR 430** Surface and Wet End Science .............................................. 3
- **MATHE 374** Introduction to Linear Algebra and Differential Equations .... 4

#### Seventh Semester — 15 hours
- **PAPR 310** Work Experience/Co-op ....................................................... 1
- **PAPR 311** Unit Operations in Chemical Engineering I ................................
- **PAPR 440** Seminar .............................................................................. 1
- **PAPR 460** Process Engineering and Design ......................................... 4

#### Eighth Semester — 17 hours
- **PAPR 460** Process Engineering and Design ......................................... 4
- **ELECTIVE** ............................................................................................. 4
- **ELECTIVE** ............................................................................................. 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 .................................................................
- **PAPR 486** Research Design .................................................................
- **CHEM 537** Statistical Design and Analysis ........................................ 4
- **MAE 253** Statics 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.**

### PAPER ENGINEERING/ENVIRONMENTAL

#### First Semester — 17 hours
- **PAPR 100** Introduction to Pulp and Paper Manufacture ....................... 3
- **CHEM 110** General Chemistry I ............................................................ 3
- **CHEM 111** General Chemistry .............................................................. 1
- **MATH 122** Calculus I ........................................................................... 4
- **CS 106** BASIC for Engineers ................................................................. 1
- **PESN** Physical Education ...................................................................... 2
- **AREA I** General Education ................................................................. 3

#### Second Semester — 16 hours
- **PAPR 103** Printing Processes ............................................................... 2
- **CHEM 112** General Chemistry II ........................................................ 3
- **CHEM 113** General Chemistry ............................................................... 3
- **MATH 123** Calculus III .......................................................................... 4
- **IME 102** Technical Communications ................................................. 3
- **AREA II** General Education ................................................................. 3

#### Third Semester — 18 hours
- **PAPR 203** Pulp and Bleaching ............................................................. 4
- **IME 261** Engineering Statistics ............................................................. 4
- **MATH 261** Environmental Engineering ................................................. 3
- **PHYS 205** Mechanics and Heat ............................................................. 4
- **CHEM 375** Organic Chemistry I ........................................................... 3
- **CHEM 376** Organic Chemistry Lab I ..................................................... 3
- **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 312** Unit Operations in Chemical Engineering II ........................
- **PAPR 352** Recycling and Deinking ..................................................... 3
- **PAPR 430** Surface and Wet End Science ............................................ 3
- **MATH 374** Introduction to Linear Algebra and Differential Equations .... 4

**ELECTIVE** ............................................................................................. 4

**ELECTIVE** ............................................................................................. 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 486** Research Design .................................................................
- **CHEM 537** Statistical Design and Analysis ........................................ 4
- **MAE 253** Statics 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.**

### Printing

**Bachelor of Science**

Candidates for the Bachelor of Science in Printing must satisfy all of the requirements of 127 hours of either the Marketing Option 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 485 Research Design.

#### MANAGEMENT OPTION

#### First Semester — 16 hours
- **PAPR 157** Imaging Systems ................................................................. 3
- **PAPR 150** Fundamentals of Graphic Arts ........................................... 3
- **MATH 116** Finite Mathematics ............................................................. 3
- **CHEM 110** General Chemistry I .......................................................... 3
- **CHEM 111** General Chemistry I Laboratory ........................................ 1
- **IME 102** Technical Communication ................................................... 3

#### Second Semester — 15 hours
- **PAPR 100** Introduction to Pulp and Paper Manufacture ....................... 3
- **BIS 102** Introduction to Information Processing ................................ 3
- **CS 105** Introduction to Computers ..................................................... 3
- **ECON 201** Principles of Microeconomics ......................................... 3
- **MATH 216** Business Statistics .............................................................. 3
- **AREA I** General Education ................................................................. 3

#### Third Semester — 16 hours
- **PAPR 250** Lithographic Technology ................................................... 3
- **PAPR 251** Design and Electronic Publishing .................................... 3
- **MATH 200** Calculus with Applications .............................................. 4
- **IME 150** Introduction to Manufacturing ............................................. 3
- **ECON 202** Principles of Macroeconomics ......................................... 3

#### Fourth Semester — 17 hours
- **PAPR 160** Introduction to Industrial Environmental Control .............. 3
- **PAPR 215** Introduction to Ink .............................................................. 3
- **PAPR 257** Computer Graphics ............................................................. 3
- **ACTY 210** Principles of Accounting ................................................... 3
- **IME 305** Work Analysis ..................................................................... 3
- **AREA VIII** General Education ............................................................. 2

#### Fifth Semester — 16 hours
- **PAPR 359** Gravure Presswork ............................................................. 4
- **MGMT 250** Organizational Behavior ................................................... 3
- **IME 326** Operations Planning and Control ....................................... 3
- **IME 328** Quality Assurance and Control .......................................... 3
- **AREA II** General Education ............................................................... 3

#### Sixth Semester — 16 hours
- **PAPR 357** Digital Color Imaging Processes ....................................... 3
- **PAPR 358** Flexographic Presswork ..................................................... 4
- **IME 402** Supervision of Industrial Operations .................................... 3
- **AREA III** General Education ............................................................... 3
- **Approved Elective** ............................................................................ 3

#### Seventh Semester — 15 hours
- **PAPR 310** Work Experience/Coop ...................................................... 1
- **PAPR 440** Seminar ............................................................................. 4
- **PAPR 462** Print Estimating .................................................................. 4
- **PAPR 463** Finishing/Bindery .............................................................. 3
- **PAPR 485** Research Design ................................................................. 3
- **Approved Elective** ............................................................................ 3

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The above schedule is an example of one leading to graduation in eight semesters, beginning in fall. Students are strongly advised to consult a Printing advisor in the Department of Paper and Printing Science and Engineering for advice on the appropriate sequence of courses.
Eighteenth Semester — 17 hours
PAPR 440 Seminar .................. 1
PAPR 454 Advanced Lithographic Presswork ............ 3
PAPR 457 Advanced Digital Imaging .................. 3
MGMT 352 Human Resource Management .................. 3
AREA IV General Education* .................. 3
Approved Elective** .................. 3
*At least two of these courses must be at the 300-400 level.
**Elective to be selected with the approval of the Printing curriculum advisor. These may include at least two lower level courses in the following:
BIS 260 Microcomputer Business Applications .................. 3
CHEM 112/113 General Chemistry Ill/Lab .................. 3/1
CHEM 370/371 Introduction to Organic Chemistry Ill/Lab .................. 3/1
PAPR 204 Stock Preparation and Papermaking .................. 4
PAPR 314 Materials Characterization for Paper and Imaging .................. 2
PAPR 341 Converting Processes .................. 2
PAPR 486 Independent Research .................. 3
IME 142 Introduction to Graphics .................. 3
IME 246 Introduction to Computer Aided Design .................. 3
MKTG 250 Marketing Principles .................. 3
MKTG 374 Introduction to Linear Programming .................. 4

MARKETING OPTION

First Semester — 16 hours
PAPR 157 Imaging Systems .................. 3
PAPR 150 Fundamentals of Graphic Arts .................. 3
MATH 116 Finite Mathematics .................. 3
CHEM 110 General Chemistry I .................. 3
CHEM 111 General Chemistry I Laboratory .................. 1
IME 102 Technical Communication .................. 3

Second Semester — 15 hours
PAPR 100 Introduction to Pulp and Paper Manufacturing .................. 3
BIS 102 Introduction to Information Processing .................. 3
OR
CS 105 Introduction to Computers .................. 3
ECON 201 Principles of Microeconomics .................. 3
MATH 216 Business Statistics .................. 3
AREA I General Education* .................. 3

Third Semester — 16 hours
PAPR 250 Lithographic Technology .................. 3
PAPR 251 Design and Electronic Publishing .................. 3
MATH 200 Calculus with Applications .................. 4
MKTG 250 Marketing Principles .................. 3
ECON 202 Principles of Macroeconomics .................. 3

Fourth Semester — 17 hours
PAPR 160 Introduction to Industrial Environmental Control .................. 3
PAPR 215 Introduction to Ink .................. 3
PAPR 257 Computer Graphics .................. 3
ACTY 210 Principles of Accounting .................. 3
Approved Elective** .................. 3
AREA VIII General Education .................. 2

Fifteenth Semester — 16 hours
PAPR 355 Gravure Presswork .................. 4
MKTG 371 Marketing Research .................. 3
MKTG 372 Purchasing Management .................. 3
Approved Elective** .................. 3
AREA II General Education* .................. 3

Sixteenth Semester — 16 hours
PAPR 357 Digital Color Imaging Processes .................. 3
PAPR 358 Flexographic Presswork .................. 3
MKTG 374 Advertising .................. 3
Approved Elective** .................. 3

Seventeenth Semester — 15 hours
PAPR 310 Work Experience/Coop .................. 1
PAPR 440 Seminar .................. 1
PAPR 462 Print Estimating .................. 2
PAPR 463 Finishing/Bindery .................. 3
PAPR 465 Research Design .................. 3
MKTG 484 Business Logistics .................. 3

Eighteenth Semester — 17 hours
PAPR 440 Seminar .................. 1
PAPR 454 Advanced Lithographic Presswork .................. 3
PAPR 457 Advanced Digital Imaging .................. 3
MKTG 470 Industrial Marketing .................. 3
Approved Elective** .................. 3
AREA IV General Education* .................. 4

Chemical Engineering

Bachelor of Science in Engineering (Chemical)

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 College of Engineering and Applied Sciences section.
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 students in good academic standing as defined by the University will be admitted to this curriculum.

Baccalaureate Writing Requirement
Students who have chosen the Chemical Engineering major will satisfy the Baccalaureate Writing requirement by successfully completing CHEG 487 Senior Design Project.

Requirements
Candidates for the Bachelor of Science in Engineering (Chemical) 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, 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. Students must earn a "C" or better grade in all CHEG prefixed prerequisite courses. The requirement of a CHEG 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 or Ink and Paper or Inks and Imaging. One sequence must be elected and taken in its entirety. The schedules below are examples leading to graduation in eight semesters, beginning in fall.

First Semester — 17 hours
CHEG 101 Introduction to Chemical Engineering .................. 3
CHEM 110 General Chemistry I .................. 3
CHEM 111 General Chemistry I Laboratory .................. 1
MATH 122 Calculus I .................. 4
IME 102 Technical Communication .................. 3
AREA I General Education* .................. 3

Second Semester — 17 hours
CHEM 112 General Chemistry II .................. 3
CHEM 113 General Chemistry Laboratory .................. 1
PHYS 206 Mechanics and Heat Laboratory .................. 4
PHYS 206 Mechanics and Heat .................. 4
MATH 123 Calculus II .................. 4
CS 106 BASIC for Engineers .................. 1
AREA III General Education* .................. 3

Third Semester — 16 hours
PHYS 207 Electricity and Light .................. 4
PHYS 208 Electricity and Light Laboratory .................. 4
MATH 272 Vector and Multivariate Calculus .................. 4
IME 261 Engineering Statistics .................. 3
Approved Elective** .................. 4

Fourth Semester — 19 hours
CHEG 281 Environmental Engineering .................. 3
CHEG 306 Material and Energy Balance .................. 4
CHEM 222 Quantitative Analysis .................. 4
MATH 374 Introduction to Linear Algebra and Differential Equations .................. 4
ME 253 Statistics and Mechanics of Materials .................. 4
OR
Approved Elective** .................. 4
Paper and Printing Science and Engineering Courses (PAPR)

A list of General Education courses can be found in "Graduation Requirements and Academic Advising" 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 Manufacture (2–3) 3 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 or CHEG 101.

PAPR 150 Fundamentals of Graphic Arts (2–3) 3 hrs.
An introductory course describing the printing industry. Copy preparation, photo imaging by camera and desktop systems, film assembly and proofing, presswork, and bindery. A comparison of all printing methods. Lithography and screen process printing.

PAPR 157 Imaging Systems (2–3) 3 hrs.
Conversion of line and halftone image sources to digital data for output as reflection copy, proofs, film or direct to plate. Photographic media, electronic imaging systems, lenses and light, copy and data requirements, chemical and by processing methods, densitometric and sensitometric instrumentation and image analysis. 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 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 (3–3) 4 hrs.
An advanced study of the processes involved in the production of papermaking fibers. Areas covered include wood yard operations, pulping, bleaching, stock preparation, chemical recovery, and alternate fiber sources. Analysis is made using chemical, physical, and engineering principles. Lectures are augmented by laboratory exercises and field trips. Prerequisite: PAPR 100 or CHEG 101; CHEM 110/111.

PAPR 204 Stock Preparation and Papermaking (3–3) 4 hrs.
An advanced study of the processes involved in the formation, consolidation, and drying of a web of paper. Areas covered include refining, fourdrinier and multi-roller operation, pressing and drying. Internal and surface treatments of paper are 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 203.

PAPR 215 Introduction to Ink (2–3) 3 hrs.
Formulation, manufacturing, quality evaluation, and waste disposal of liquid and paste inks. Relationship between the chemical and physical properties of inks and their printing quality. Concepts of rheology and surface energy. Prerequisites: PAPR 150, CHEM 110 and CHEM 111.

PAPR 250 Lithographic Technology (2–3) 3 hrs.
Experience in basic lithographic offset principles, press operations, mechanical adjustments, simple chemical reactions, as well as the advantages and disadvantages of lithography. Multi-color processes, inks, and papers used in lithographic printing. Prerequisite: PAPR 150.

PAPR 251 Design and Electronic Publishing (2–3) 3 hrs.
Prepress preparation of text and graphics for printing. The evolution of text and graphic preparation through electronic page assembly methods. Development and compilation of various text and graphic design layouts in full page assembly with the application of typographic alternatives, design principles, and color schemes while using various electronic page assembly systems. Prerequisites: PAPR 150, BIS 102 or CS 105 or CS 106.

PAPR 257 Computer Graphics (2–3) 3 hrs.
Computer graphics from the point of view of both hardware and software. The representation, display, and manipulation of graphical objects. The relationships of displayed graphics to photographic graphics, both direct digital and conventional. Prerequisites: PAPR 157, 251.

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. This course is cross-listed with CHEG 261. Prerequisites: CHEM 110 and 111, MATH 123, PHYS 113 or 203.

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 reclaimed fibers are also studied. The laboratory consists of fiber identification and a papermaking trial. Prerequisites: PAPR 204, IME 261 or MATH 364.

Chemical Engineering Minor

A minor in Chemical Engineering may be earned by completing the following 20 semester hours of CHEG courses: CHEG 281, 306, 311, 312, 320, 330, and 410. The minor is most suitable for other engineering graduates and physics and chemistry graduates. In addition, students would complete CHEM 120 and CHEM 430 as prerequisites for CHEG 410.
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 will be used as a problem solving workshop. This course is cross-listed with CHEG 306. Prerequisites: CHEM 110 and 111, MATH 123, PHYS 205, PAPR 203 or PAPR 204.

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 (2–3) 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. This course is cross-listed with CHEG 311 Prerequisites: PAPR 306.

PAPR 312 Unit Operations in Chemical Engineering II (2–3) 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. This course is cross-listed with CHEG 312. Prerequisites: PAPR 306.

PAPR 314 Materials Characterization for Paper and Imaging (1–3) 2 hrs.
This is a lecture and laboratory class in utilizing the instruments required to measure the physical and chemical properties of inks, coatings, and paints in both the liquid state and the solid state (after application). It includes the measurement of surface energy, surface tension, contact angle and wetting, rheological properties, densitometry, colorimetry, opacity, image analysis, and microscopy. Prerequisite: PAPR 100 and PAPR 150 or 152.

PAPR 333 Carbohydrate and Lignin Chemistry (3–0) 3 hrs.
Consideration of the chemistry of wood, pulp, and pulp-based products. Included topics are cellulose, lignin, accessory carbohydrates, extractives, and spent liquor utilization. Prerequisite: PAPR 203. Corequisite: CHEM 375 and 376.

PAPR 341 Converting Processes (2–0) 2 hrs.
A lecture consideration of converting operations for paper and paperboard. Paper and paperboard properties, special manufacturing processes, and other packaging materials will be covered. Prerequisite: 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 110 and 111.

PAPR 349 Water Quality and Regulations (Lab) (0–3) 1 hr.
The physical, chemical and biological characteristics of water and wastewater treatment processes. Prerequisites: CHEM 110 and 111; Corequisite: PAPR 348.

PAPR 351 Water Quality and Microbiology (2–0) 2 hrs.
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. CPE credit may be earned in PAPR 351 by paper science or paper engineering majors."

PAPR 352 Recycling and Deinking (3–0) 3 hrs.
The recovery of waste paper and other fiber sources for use in the manufacturing of paper and board products and other commercial applications. Waste fiber collection, dispersion, contaminant separation, deinking, 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 the paper industry. Physical, physicochemical, and biological treatments are considered. Prerequisites: PAPR 306, PAPR 348, PAPR 349.

PAPR 357 Digital Color Imaging Processes (2–3) 3 hrs.
Application of various color separation and image assembly systems to the reproduction of color original common to most printing publications and processes. Color theory, color correction, color proofing, and color enhancement. Colorimetry and spectrophotometry to illustrate color measurement and control applications. Prerequisite: PAPR 257.

PAPR 358 Flexographic Presswork (2–3) 4 hrs.
Rubber and photopolymer plate manufacture, mounting and proofing, water and solvent inks, substrates, and flexographic press and converting operations. Prerequisites: PAPR 350, CHEM 110 and 111.

PAPR 359 Gravure Presswork (2–3) 4 hrs.
Cylinder manufacturing, proofing and gravure press operation. Press components, register controls, ink variations, substrate selection, doctor blades, and electrostatic assist. Prerequisites: PAPR 150, CHEM 110 and 111.

PAPR 416 Imaging Materials and Processes (3–3) 4 hrs.
A course designed to provide science and engineering majors with a basic understanding of various printing processes detail; imaging materials and processes, pre-press processes and color and imaging sciences will be some of the topics covered in the course. Prerequisites: PAPR 103, CHEM 375 and 376, CHEM 430, and MATH 272.

PAPR 430 Surface and Wet End Science (3–0) 3 hrs.
A 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 end additives such as retention aids, strength resins, defoamers and drainage aids. Prerequisites: CHEM 375 and 376; PAPR 333.

PAPR 440 Seminar 1 hr.
A seminar course using guest speakers, university staff and field trips to add depth and breadth to the background of students. Prerequisite: Junior standing.

PAPR 450 Solid Waste Treatment (2–3) 3 hrs.
The practice, technology, and economics of the treatment of solid wastes generated by municipal and industrial processes. Discussion will include treatment, disposal, in-process utilization, and conversion to useful products for solid and semi-solid wastes. Prerequisite: Junior standing.

PAPR 451 Air Pollution Control (2–3) 3 hrs.
The origins, effects, measurement and control of air pollution are examined. Pollution abatement methods are studied and applied to private, municipal and industrial sources. Prerequisites: PAPR 261 or equivalent.

PAPR 454 Advanced Lithographic Presswork (2–3) 3 hrs.
Practical problems in press setup. Plate imaging, register controls, ink variations, substrate choices, and lithographic press configurations and systems. Prerequisites: PAPR 250, CHEM 110 and 111, and MATH 216 concurrently.

PAPR 457 Advanced Digital Imaging (2–3) 3 hrs.
Advanced methods of digital image reproduction and printing of images. Computer to plate and digital engraving methods. Three dimensional interactive graphics and animation. Graphics packages are used on both personal systems and Unix workstations. Prerequisites: PAPR 357, MATH 200.

PAPR 460 Process Engineering and Design (3–3) 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 the safety and regulations standards will be used to evaluate alternative solutions. Oral and written reports of individual and team efforts. Prerequisites: PAPR 203, PAPR 204, PAPR 311; PAPR 312; PAPR 352; or permission of instructor.
PAPR 482 Print Estimating (3–3) 4 hrs.

PAPR 483 Finishing/Blindery (2–3) 3 hrs.
Analyze post-press equipment and operations to complete the printed piece. Field trips will demonstrate the scope of operations involved. Study of equipment costs and development of Basic Hourly Costs, postal rates, regulations, and procedures. Prerequisite: PAPR 462.

PAPR 484 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 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 or 312; one of the two may be taken concurrently.

PAPR 484 Process Control II (4–0) 4 hrs.
The use of instrument systems, digital computers and programable logic controllers to control pulping, papermaking and chemical recovery process. Design of control systems, principles of analog and digital systems, digital signal processing and architecture of programable 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. Student will define and analyze the problem; do a critical review of the literature, and propose a documented research program to increase understanding and knowledge about the problem. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisite: Senior standing in major.

PAPR 486 Independent Research 3 hrs.
Adds the laboratory research component to PAPR 485. Student may continue the problem defined and analyzed in PAPR 485 or select a new topic. A detailed report which includes literature review, 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.

PAPR 510 Printability Analysis (2–3) 5 hrs.
Relationships between printed substrate, ink, printing process and resulting print quality from both the theoretical and measurement standpoint, solving problems from the point of view of substrate formation and its physicochemical properties, ink characteristics, and the printing process variables. Main techniques of printability evaluation will include modern optical methods of light interaction with both printed and unprinted substrate, spectrophotometry, and image analysis. Prerequisite: PAPR 204 or 250.

Chemical Engineering Courses (CHEG)
A list of General Education courses can be found in "Graduation Requirements and Academic Advising" earlier in this catalog. Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-lab hours).

CHEG 101 Introduction to Chemical Engineering (2–3) 3 hrs.
Introduction to chemical engineering, including process operations, basic laws at the foundation of chemical engineering, units and measurements, chemical equipment and instruments used in the process industries. Emphasis will be on oral and written communication skills and career planning development. Prerequisite: High school chemistry; Corequisite: IME 102.

CHEG 261 Environmental Engineering (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. This course is cross-listed with PAPR 261. Prerequisites: CHEG 110 and 111, MATH 123, PHYS 113 or 205.

CHEG 281 Data Acquisition and Handling (0–3) 1 hr.
A laboratory consideration of the methods used to collect experimental or process data, data handling, and data presentation; methods and limitations when applying or collecting process information. Prerequisites: IME 261, knowledge of written language.

CHEG 306 Material and Energy Balance (3–3) 4 hrs.
Fundamentals of chemical engineering dealing with behavior of gases, thermophysical properties of solids, liquids and gases, thermochromy and associated problem solving. Emphasis is on material and energy balances. The laboratory session will be used as a problem solving workshop. Prerequisites: CHEM 110 and 111, MATH 123, PHYS 205, PAPR 203 or 204.

CHEG 310 Work Experience/Coop 1–2 hrs.
Full-time employment in chemical process industries that provides first-hand experience in application of chemical engineering principles. A written report at the end of the semester is required. Prerequisites: Departmental consent; junior standing.

CHEG 311 Unit Operations in Chemical Engineering I (3–3) 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. This course is cross-listed with PAPR 311. Prerequisite: CHEG 281, PAPR 306.

CHEG 312 Unit Operations in Chemical Engineering II (2–3) 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. This course is cross-listed with PAPR 312. Prerequisites: CHEG 281, PAPR 306.

CHEG 320 Chemical Engineering Thermodynamics (3–0) 3 hrs.
A lecture consideration of the fundamentals and concepts of thermodynamics and how they explain the behavior of matter in its different phases. Special emphasis on application to industrial situations. CHEM 120, CHEG 306.

CHEG 330 Mass Transfer (2–3) 3 hrs.
Fundamentals of diffusion mass balances; diffusion in solids, liquids, and gases. Convective mass transfer; simultaneous heat and mass transfer. Component separation in continuous processes; gas absorption and desorption; liquid-liquid extraction and distillation. Prerequisites: CHEG 311 or 312; Corequisites: CHEG 311 or 312.

CHEG 381 Computer Modeling and Simulation I (0–3) 1 hr.
A laboratory class covering usage and application of computational fluid mechanics packages. CHEG 261; Corequisite: CHEG 311.

CHEG 382 Computer Modeling and Simulation II (0–3) 1 hr.
A laboratory class covering usage and application of process simulation packages; module setup, data inputting, and optimization techniques. Prerequisite: CHEG 381.

CHEG 410 Chemical Reaction Engineering 3 hrs.
Chemical kinetics and equilibria; reaction rate expressions from mechanisms and experimental data; design and analysis of homogeneous flow and batch reactors; heterogeneous reactor design; solid catalyzed reactions. Prerequisites: CHEG 430 and CHEG 320; Corequisite: CHEG 330.

CHEG 420 Separation Processes (2–3) 3 hrs.

CHEG 450 Plant Economics and Project Design 3 hrs.
Process synthesis and operability characteristics; dynamics of chemical engineering industries; economics of process evaluation; optimization; design and selection of process evaluation; optimization in design and selection of process and/or equipment alternatives; bases for cost estimation. Prerequisites: CHEG 330, 381; Corequisites: CHEG 410 or 420.

CHEG 483 Instrumentation and Process Control (1–3–3) 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. This course is cross-listed with PAPR 483. Prerequisites: PAPR 311 or 312; one of the two may be taken concurrently.

CHEG 487 Senior Design Project
3 hrs.
Application of chemical engineering to the solution of a complex, open-ended research problem selected in consultation with faculty. The project will involve feasibility analysis, design, and optimization of chemical processes. Emphasis will be on working in small design groups, submission of written thesis, and oral presentation. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: CHEG 382, 450.

CHEG 495 Topics in Chemical Engineering
1–3 hrs.
A specialized course dealing with a specific area in chemical engineering not included in other course offerings. May be repeated for credit with a different topic up to six hours. Prerequisite: Permission of instructor.

CHEG 499 Independent Studies
1–3 hrs.
A program of independent study in an area arranged in consultation with the instructor. One to three hours 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, 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 History; and 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 elementary education; and Bachelor of Arts 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 houses the Bachelor of Fine Arts Music Theatre Performance degree, shared with Music and Dance. 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 appreciation curricular and co-curricular activities, such as general art and art history courses, dance, musical ensembles, and theatre productions.

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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 elementary education; and Bachelor of Arts 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 houses the Bachelor of Fine Arts Music Theatre Performance degree, shared with Music and Dance. Students are encouraged to inquire about curricular combinations not listed specifically in the catalog.

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Art
Charles Stroh, Chair
Dina Bangdel
Barbara Brotherton
John M. Carney
Cat Crotchett
Richard dePeaux
Edward Harkness
Tricia Hennessey
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 Solomon
Vince Torano
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 processes 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 we 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 their 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.

Transfer Credit
Transfer credit may be used to fulfill no more than half the number of credit hours required for the student’s 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 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 art elective category or be used as electives you may need to complete the minimum number of hours required 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.

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.

Students who major in Art History will satisfy the Baccalaureate Writing Requirement by successfully completing ART 327 Writing About Art History.

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 play a vital role in our Graphic Design Program, and our Design Center is fully equipped for exclusive use of Graphic Design students.

EXHIBITION REQUIREMENT

Each Bachelor of Fine Arts candidate must present a graduating exhibition as stated in Art 480—497 in the B.F.A. degree requirements. The B.F.A. candidate is to arrange such an exhibition in consultation with their B.F.A. 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 occasionally are 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 between 15 and 20 students.

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 and Metalsmithing, Painting, 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 History, 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. The department also offers two minors: Art and Art History.

Art Major — Bachelor of Fine Arts

85 hours

This degree is designed for qualified students who intend to become professional artists or pursue graduate study in art. Art majors must make application to a departmental committee for admission to B.F.A. candidacy in a specific area of emphasis after completing 30 hours in art and one semester residency in the department. It also is necessary to be at or above the 300-level in the area to which they are applying.

Areas of emphasis: ceramics, jewelry and metalsmithing, painting, photography, printmaking, and sculpture.

Teaching students must complete the requirements of one of the studio areas of emphasis in addition to the certification requirements of the College of Education and the art education sequence in the Art Department: ART 252, 352, 452, and 552.

The requirements of the art 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** — 15
  - Select any five (5) courses from the following:
  - **FOUNDATION COURSES**
    - ART 101 Foundation Drawing 3
    - ART 102 Foundation 2D Design 3
  - **2D COURSES**
    - ART 210 Life Drawing 3
    - ART 240 Painting I 3
    - ART 241 Intaglio and Relief 3
    - ART 242 Watercolor Painting 3
    - ART 243 Photography 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 additional Art History courses at the 300- or 400-level, or at the 500-level with permission of instructor 6

- **BACCALAUREATE WRITING REQUIREMENT** — 3
  - ART 325 Writing About Art 3

- **GRADUATION PRESENTATION** — 3
  - ART 491 Graduation Presentation 3
  - ART 493 Graduation Presentation and Seminar—Painting 3
  - ART 494 Graduation Presentation and Seminar—Photography 3
  - ART 496 Graduation Presentation and Seminar—Metalsmithing 3
  - ART 498 Graduation Presentation and Seminar—Ceramics 3

Graphic Design Major — Bachelor of Fine Arts

85 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.

Application requires a portfolio review, personal interview, submission of an unofficial transcript, and completion of application forms. Reviews are held only in the winter semester for admission into the following fall semester. Students must have completed or be enrolled in 15 hours of the Basic Studies courses and 3 hours of Art History.

Students' 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 must be demonstrated with work in life drawing, painting, photography, printmaking, jewelry and metalsmithing, ceramics, and sculpture. 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 STUDIES REQUIREMENT** — 15
  - ART 101 Foundation Drawing OR
  - ART 210 Life Drawing 3
  - ART 102 Foundation 2D Design OR
  - ART 240 Painting I 3
  - ART 248 Photography 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

- **STUDIO EMPhASIS** — 21
  - Areas include: Ceramics, Jewelry and Metalsmithing, Painting, 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. Three (3) hours of non-Western Art History may be applied to the elective requirement.

- **GRADUATION PRESENTATION** — 3
  - Select one from:
    - ART 490 Graduation Presentation 3
    - ART 491 Graduation Presentation and Seminar—Painting 3
    - ART 493 Graduation Presentation and Seminar—Photography 3
    - ART 494 Graduation Presentation and Seminar—Photography 3
    - ART 496 Graduation Presentation and Seminar—Ceramics 3
Select any five (5) courses from the following:

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ART 238</td>
<td>Jewelry and Metalsmithing</td>
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<tr>
<td>ART 241</td>
<td>Intaglio and Relief</td>
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<tr>
<td>ART 102</td>
<td>Foundation 2D Design</td>
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<tr>
<td>ART 242</td>
<td>Watercolor Painting</td>
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<td>ART 200</td>
<td>Typography I</td>
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<td>ART 260</td>
<td>Graphic Design I</td>
<td>3</td>
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<td>ART 261</td>
<td>Graphic Design II: Graphic Aesthetics</td>
<td>3</td>
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<tr>
<td>ART 350</td>
<td>Typography II</td>
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<td>Typography III</td>
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<td>ART 360</td>
<td>Graphic Design III: Visual Systems</td>
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<td>ART 371</td>
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<tr>
<td>ART 460</td>
<td>Graphic Design V: Advanced Problems</td>
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<tr>
<td>ART 461</td>
<td>Graphic Design VI: Senior Projects</td>
<td>4</td>
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<tr>
<td>ART 499</td>
<td>Senior Thesis</td>
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ART 241 Intaglio and Relief ............... 3
ART 242 Watercolor Painting .................. 3
ART 243 Lithography ......................... 3
ART 245 Graphic Design (Non BFA) ............ 3

GRAPHIC DESIGN COURSES ..................... 43

ART 250 Color for Graphic Design ............ 3
ART 251 Typography I ................. 3
ART 280 Graphic Design .................. 3
ART 261 Graphic Design II: Graphic Aesthetics | 3
ART 350 Typography II ..................... 3
ART 351 Typography III ................... 3
ART 360 Graphic Design III: Visual Systems | 3
ART 361 Graphic Design II: Design Applications |            
ART 371 Special Topics ................... 3
ART 460 Graphic Design V: Advanced Problems | 3
ART 461 Graphic Design VI: Senior Projects | 4
ART 499 Senior Thesis ................... 1

PHOTOGRAPHY COURSE ...................... 3
ART 348 Photography ..................... 3

BACALAUREATE WRITING REQUIREMENT .......... 3
ART 325 Writing About Art .................. 3

ART HISTORY COURSES ..................... 12
ART 220 History of Art .................. 3
ART 221 History of Art .................. 3

Two additional Art History courses at the 300- or 400-level, or at the 500-level with permission of instructor .......... 6

ART ELECTIVES ................................ 9
Select from Art Studio courses.

40 credit hours

The Art History degree provides instruction in Art History and art criticism and is dedicated to a multi-cultural perspective. Course work is offered in Asian, African, Native American, and Western Art ranging from prehistoric to contemporary. The faculty combines expertise to ensure that students are broadly educated in a variety of art historical methods, including a traditional formalist approach, as well as more recent post-modern and post-colonial theories. The program, while housed in the Art Department, is interdisciplinary in nature and requires or encourages complementary course work in History, Anthropology, Languages, and other areas. Students receive a variety of classroom-related experiences, as well as opportunities for internships and study abroad.

54 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:

BASIC STUDIES REQUIREMENT .................. 15
Select any five (5) courses from the following:

FOUNDED COURSES
ART 101 Foundation Drawing ............... 3
ART 102 Foundation 2D Design ............ 3
ART 103 Theory of Art ................... 3

2D COURSES
ART 210 Life Drawing ..................... 3
ART 240 Painting I ...................... 3
ART 241 Intaglio and Relief ............ 3
ART 242 Graphic Design .................. 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 additional Art History courses at the 300- or 400-level, or at the 500-level with permission of instructor .......... 6

BACALAUREATE WRITING REQUIREMENT .......... 3
ART 325 Writing About Art .................. 3

ART ELECTIVES ................................ 24
Art major studio credits. Electives and required art courses must be determined in consultation with a faculty advisor within the studio area of emphasis. Three (3) hours of non-Western Art History may be applied to the elective requirement.

Art History Major — Bachelor of Arts

40 credit hours

The Art History degree provides instruction in Art History and art criticism and is dedicated to a multi-cultural perspective. Course work is offered in Asian, African, Native American, and Western Art ranging from prehistoric to contemporary. The faculty combines expertise to ensure that students are broadly educated in a variety of art historical methods, including a traditional formalist approach, as well as more recent post-modern and post-colonial theories. The program, while housed in the Art Department, is interdisciplinary in nature and requires or encourages complementary course work in History, Anthropology, Languages, and other areas. Students receive a variety of classroom-related experiences, as well as opportunities for internships and study abroad.

200-LEVEL REQUIREMENT .................. 9
ART 220 History of Art .................. 3
ART 221 History of Art .................. 3
and either
ART 222 Art of Africa, Oceania, and the Americas ............ 3
ART 223 Introduction to Asian Art History .................. 3

300-LEVEL REQUIREMENT .................. 12

BACALAUREATE WRITING REQUIREMENT .......... 3
ART 327 Writing About Art History ........ 3

CHOICE ONE (1) FROM AREA ONE: ............ 3
ART 321 Topics in Art History (with an Ancient to Baroque topic) ............ 3
ART 381 Greek and Roman Art ............ 3
ART 385 Renaissance Art ............ 3
ART 386 Baroque Art ............ 3

ART 327 Writing About Art History ........ 3

CHOICE ONE (1) FROM AREA TWO: ............ 3
ART 321 Topics in Art History (with a 19th-Century to Modern topic) ............ 3
ART 388 19th-Century European and American Art ............ 3
ART 389 European and American Art 1900-1945 ............ 3
ART 390 20th-Century Art 1945-Present ............ 3
ART 391 Women in Art ............ 3
ART 392 20th-Century Design History ............ 3
HIST 315 Popular Art and Architecture in America ............ 3

CHOICE ONE (1) FROM AREA THREE: ............ 3
ART 321 Topics in Art History (with a 19th-Century to Modern topic) ............ 3
ART 363 Native American Art ............ 3
ART 364 African Art ............ 3
ART 365 Chinese Art ............ 3
ART 366 Japanese Art ............ 3
ART 367 Art of India ............ 3

400- AND 500-LEVEL REQUIREMENT ........ 10
REQUIRED COURSES
ART 499 Senior Thesis ............ 1

ART 527 Art History Methods ............ 3

CHOICE ONE (1) .................. 3
ART 435 Art of the Book ............ 3
ART 436 Contemporary/Alternative Art ............ 3
ART 437 History of Photography ............ 3
ART 466 Buddhist Art ............ 3
HIST 468 Russian Art and Art Patronage ............ 3

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 241 Intaglio and Relief ............ 3

250-LEVEL REQUIREMENT .................. 10
ART 250 Color for Graphic Design ............ 3
ART 251 Typography I ............ 3
ART 252 Period Interiors I ............ 3
ART 252 Period Interiors II ............ 3
ART 327 Writing About Art History ............ 3

ELECTIVES
ART 520 Independent Study in Art History ............ 2-3
ART 529 Art History Internship ............ 1

ART HISTORY REQUIREMENT ............ 8
Eight hours of one foreign language are required. French and German are recommended as research languages; however, Spanish, Italian, Chinese, or Japanese, or other languages approved by the Art History faculty can also be applied to the requirement. Students may test out of this requirement by placement in the 200-level or above on a Foreign Language Proficiency Examination. The foreign language requirement credits are counted under Proficiency in the General Education requirements.

FOREIGN LANGUAGE REQUIREMENT ........ 8

ART HISTORY 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 prepared 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 241 Intaglio and Relief ............ 3
ART HISTORY REQUIREMENT ........................ 9
ART 220 History of Art ................................. 3
ART 221 History of Art ................................. 3
One additional Art History course at the
300- or 400-level, or at the 500-level with
permission of instructor ................................. 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. Three (3)
credits of non-Western Art History may
be applied to the elective requirement.

COLLEGE OF EDUCATION COURSES .......... 21
ED 250 Human Development .......................... 3
ED 205 K-12 Content Area Literacy .................. 3
ED 206 School and Society .............................. 2
ED 410 Seminar in Education .......................... 2
ED 475 Intern Teaching .................................. 10
*Art teaching courses (252, 352, 452, 552)
must be taken in sequence and may not
be taken concurrently. Therefore, Art Teaching
majors are recommended to enroll in Art 252 in the fall
semester of the sophomore year and continue
taking one art education course, in sequence,
in each subsequent semester. This 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.

BASIC STUDIES REQUIREMENT ............... 12
Select four (4) courses from the following:

FOUNDATION COURSES
ART 101 Foundation Drawing ......................... 3
ART 102 Foundation 2D Design ......................... 3
ART 103 Theory of Art ................................ 3

2D COURSES
ART 210 Life Drawing ................................ 3
ART 240 Painting I .................................. 3
ART 241 Intaglio and 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 ELECTIVES .................................. 12
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 16 credit hours are distributed as follows:

REQUIRED CORE COURSES
ART 220 History of Art ................................ 3
ART 221 History of Art ................................ 3

CHOOSE ONE NON-WESTERN ART HISTORY ELECTIVE FROM AMONG THE FOLLOWING; ONE COURSE MUST BE AT THE 400- OR 500-LEVEL .......... 9
ART 321 Topics in Art History: Africa, Oceania, and the Americas .................................. 3
ART 323 Introduction to Asian Art .................... 3
ART 321 Topics in Art History (with a non-Western topic) .................................. 3
ART 363 Native American Art .......................... 3
ART 364 African Art .................................. 3
ART 365 Topics in Native American and African Art .............. 3
ART 366 Japanese Art .................................. 3
ART 367 Arts of India .................................. 3

CHOOSE THREE ART HISTORY ELECTIVES FROM AMONG THE FOLLOWING; ONE COURSE MUST BE AT THE 400- OR 500-LEVEL .......... 12
ART 321 Topics in Art History: Africa, Oceania, and the Americas .................................. 3
ART 323 Introduction to Asian Art .................... 3
ART 321 Topics in Art History (with a non-Western topic) .................................. 3
ART 363 Native American Art .......................... 3
ART 364 African Art .................................. 3
ART 365 Topics in Native American and African Art .............. 3
ART 366 Japanese Art .................................. 3
ART 367 Arts of India .................................. 3

ART 103 Theory of Art ................................. 3
A lecture course introducing the philosophy of art with understanding of the aesthetic values
that are reflected from key movements of art in
painting, sculpture and architecture, in
comparison to contemporary art. Prerequisite:
Art majors and minors only.

ART 120 Introduction to Art ......................... 3
A topical introduction to the visual arts:
painting, architecture, sculpture and the crafts.
Discussions and slide presentations on such
themes as the meaning of modern art, art as
cultural and sociological expression, as
symbol, as play and as form. This course will enable
the non-art student to develop an art
vocabulary and gain insights into our human
quest for creative expression.

ART 130 Studio Experience—(3-0) .......... 3
A course designed for the non-art student as
an enriching experience in three-dimensional
media to include clay, wood, metal, and other
sculptural material. This course 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. Fee.

ART 148 Direct Encounter with the Arts $(35 fee) .......... 4
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
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
courses 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, nor Art majors
or minors.

ART 200 The Creative Process Through Art .......... 3
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
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 fundamentals 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. Prerequisite: ART or ATE major and minors only.

**ART 220 History of Art 3 hrs.**
An historical survey of art from the Renaissance through the contemporary period.

**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 processes, 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 sculptural 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 sterling 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 oil 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 printing 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 painting medium. Prerequisite: ART or ATE major and minors only.

**ART 243 Lithography 3 hrs.**
A basic 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 meter, lenses, b/w films, processing and printing. Emphasis is placed upon perceptive imagery and development of 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 Studies 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 to computer processing, several software 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 Studies 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 exploration of formal values and problem solving. Visual systems of pictorial and symbolic form are explored through organic and geometric drawing exercises. Computer technology will be investigated. Prerequisites: ART 250, ART 260.

**ART 305 Inter-Related Arts Processes: Art, Dance, and Music**
3 hrs.
Art, dance, and music will be dealt with as the exclusive 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 1/2 of the class meetings. Prerequisite: ART 210.

**ART 321 Topics in Art History: Variable Topics**
3 hrs.
Investigation of changing topics in art history in classes or seminar sessions at an undergraduate level. Course topics are variable. Prerequisites: ART 220 or 221 for all Art Department majors. Repeatable for credit under a different topic.

**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 (syntax, compositional structure, editing format, etc.) and critical evaluation of artistic issues (analysis of the visual experience, research and development of a thesis). Each student will write a series of essays which will form the basis for class discussions. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisite: Junior or senior level Art major only.

**ART 327 Writing About Art History**
3 hrs.
Development of the ability to think, verbalize, and write about art history, art criticism and aesthetics. Instructor will stress research techniques, critical thinking; correct grammar; syntax and spelling; and professional presentation. Writing exercises will include, but are not limited to, a research paper, book reviews, and a conference abstract and paper. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: ART 220, ART 221, and Art History major.

**ART 330 Ceramics**
3 hrs.
Continuation of ART 230 with opportunity for concentration in the medium. Some experimentation in glazing. Prerequisite: ART 230.

**ART 331 Sculpture**
3 hrs.
Development of individual sculptural direction in all media. Advanced welding, molding and casting techniques are among the media explored. Prerequisite: ART 231 or consent of instructor.

**ART 338 Jewelry and Metalsmithing**
3 hrs.
Intermediate level metalsmithing work. Continued skill development in jewelry design, stone setting, and solder fabrication. Basic lapidary work 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 syntheses 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 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-student should begin to discover and apply methods 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 the analysis of style, subject matter, social, political, and cultural contexts.

**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 250, 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 prospective elementary art teachers 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.
Exploration 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 various displays for use in graphic design and their application to communication problems. Functions as a transitional phase from theoretical 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 theoretical to the applied design problem. The evolution of design process is explored and developed. Emphasis will be placed on visual design of arts and systems and their applications. Computer technology will be investigated. Prerequisites: ART 350, ART 360.

**ART 363 Native American Art**
3 hrs.
An exploration of the variety and vitality of the arts of American Indian people of North America living north of the Rio Grande from prehistoric times to the present, placing these arts within the framework of the historical and cultural contexts in which they are made.

**ART 364 African Art**
3 hrs.
An exploration of the variety and vitality of the arts of American Indian people of North America living north of the Rio Grande from prehistoric times to the present, placing these arts within the framework of the historical and cultural contexts in which they are made.

**ART 365 Chinese Art**
3 hrs.
Historical investigation of the major traditions of Chinese painting. Emphasis will be given to the analysis of style, subject matter, techniques, and aesthetics as well as the social, political, and cultural contexts.

**ART 366 Japanese Art**
3 hrs.
Historical investigation of the major traditions of Japanese painting. Emphasis will be given to the analysis of style, subject matter, techniques, and aesthetics as well as the social, political, and cultural contexts.

**ART 367 Arts of India**
3 hrs.
Exploration of the visual culture of India, from the Indus Valley Civilization until the advent of the British Raj in India in the seventeenth century. Fundamental to this course will be the meaning and symbolic content of the works of art, specifically in relation to the major religious traditions of India, namely Hinduism, Buddhism, and Islam.

**ART 371 Special Topics**
3 hrs.
Topics offered could be any of the following: package design, exhibit design, sign/symbol design, interactive electronic photography, type as image, applied color, visual translation, and any additional topic of interest. Prerequisites: ART 350, ART 360.
ART 381 Greek and Roman Art
3 hrs.
Discussion of Greek and Roman art from 3000 BCE to 400 CE. Material covered will include Cycladic, Minoan, and Mycenaean as well as the many stylistic divisions of the Greek and Roman periods. Prerequisite: ART 220.

ART 383 Medieval Art
3 hrs.
Presentation of art and architecture from the decline of the Roman Empire through the Gothic Period. Special attention will be paid to the intersection between Medieval religious traditions and the visual arts. Prerequisite: ART 220.

ART 385 Renaissance Art
3 hrs.
Presentation of Renaissance art from the thirteenth through the sixteenth centuries, including the pre-Renaissance, Renaissance, and Mannerist styles. Special attention will be paid to the intersection between contemporary religious and political traditions and the visual arts. The class will focus on the Italian tradition, but will include examples from the Northern Renaissance. Prerequisite: ART 221.

ART 386 Baroque Art
3 hrs.
Presentation of European and colonial art of the late sixteenth, seventeenth, and early eighteenth centuries. The social and political context of the art will be examined in addition to traditional methods of art criticism, formal analysis, and connoisseurship. Prerequisite: ART 221.

ART 388 Nineteenth Century European and American Art
3 hrs.
Major developments, such as Neo-Classicism, Romanticism, Realism, Impressionism, and Post-Impressionism are examined in Europe and America. Recent approaches to the study of nineteenth-century art will be examined. Prerequisite: ART 221.

ART 389 European and American Art 1900–1945
3 hrs.
Emphasis is placed upon the roots of contemporary trends and the contributions of individuals to new modes of presentation in Europe and America. Major developments, including Fauvism, Cubism, Expressionism, and Surrealism are discussed using both traditional and current methods of analysis. Prerequisite: ART 221.

ART 390 Twentieth-Century Art: 1945 to Present
3 hrs.
Major trends in art since World War II are discussed. Emphasis is placed upon contemporary methods of art theory and criticism. Prerequisite: ART 221.

ART 391 Women in Art
3 hrs.
Historical survey of selected women painters, sculptors, architects, designers, and craftspersons. Investigation of the individual and group artistic contributions of these women in the context of their historical setting. Particular emphasis will be placed on women artists' roles in society and the arts community as they evolved in the last century. Prerequisite: ART 220 or 221.

ART 392 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 435 Art of the Book
3 hrs.
Discussion of the art of book illustration from medieval to modern times. The class will examine various approaches to layout and design, as well as different theories of illustration and narration. Prerequisites: 220 and 221.

ART 436 Contemporary/Alternative Art
3 hrs.
Examination of how painting and sculpture in the 20th century began to give way to new forms of artistic expression. Media to be considered will include recent video, computer, performance, and installation art. The work will be approached in relationship to earlier 20th-century sources such as Dada, Surrealism, and Fluxus. Prerequisite: 221.

ART 437 History of Photography
3 hrs.
Survey of photography from its early years to the present with emphasis on its aesthetic, historical, technical, and social contexts. Prerequisite: 221.

ART 452 Preparation for Art Teaching (Secondary)
3 hrs.
This course is designed to provide the art education student with the professional knowledge and practice for teaching in middle and high schools. It focuses on developing teaching strategies that include writing outcome statements, developing appropriate curriculum and activity materials, developing assessment techniques, and developing classroom management techniques and professional classroom methods. The course deals with teaching and understanding techniques for Discipline Based Art Education. Practicum field work is required as part of this course. Prerequisites: ART 252, 352, and Art Teaching 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 topic research and design solutions to complex problems as a culmination of studies in graphic design. Emphasis will be on research, design process, methodology and innovation. Computer technology will be utilized. Prerequisite: ART 460.

ART 466 Buddhist Art
3 hrs.
This course is an examination of the major Buddhist traditions in Asia, focusing on the visual arts of India, Nepal, Tibet, and Japan. Particular attention will be given to Buddhist iconography from an historical viewpoint, emphasizing the relationship of the arts and religious practices. The course will also explore the mutual exchanges and influences exerted by Buddhism throughout Asia as well as the distinctive religious expressions within each region. Prerequisite: Art 223, or Art 365, or Art 366, or Art 367.

ART 480 Graduation Presentation and Seminar—Painting
3 hrs.
Investigation and evaluation of contemporary topics and trends in painting. Students will be exposed to how painters 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 painting 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 and Metalsmithing
3 hrs.
Investigation and evaluation of contemporary topics and trends in jewelry and 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 and metalsmithing to include slide documentation and oral examination or written thesis. Evaluation by a departmental reviewing committee. Prerequisites: Senior standing and BFA candidacy.

ART 496 Graduation Presentation and Seminar—Ceramics 3 hrs.
Investigation and evaluation of contemporary topics and trends in ceramics. Students will be exposed to how ceramists 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 ceramics to include slide documentation and oral examination or written thesis. Evaluation by a departmental reviewing committee. Prerequisites: Senior standing and BFA candidacy.

ART 499 Senior Thesis 1 hr.
Capstone course required for Art History majors in which the student revises a research paper written in an upper division course in order to produce a paper of publication quality. Art History majors only; registration requires approval by supervising faculty member.

ART 500 Independent Studies 1–6 hrs.
An opportunity for qualified undergraduates to elect an area of special interest and pursue it in depth. Prerequisite: Permission of department. Repeatable for credit.

ART 510 Drawing Workshop 1–6 hrs.
Continuation of ART 310. Prerequisite: ART 310. Repeatable for credit.

ART 520 Independent Study in Art History 2–3 hrs.
Problems in Art History from ancient times to the present, selected by the individual student in consultation with the instructor. Prerequisites: ART 220, ART 221, and an ART 500-level course in the area of interest; permission of department. Repeatable for credit.

ART 521 Topics in Art History: Variable Topics 3 hrs.
Investigation of changing topics in art history in class or seminar sessions by advanced students. Course title varies from term to term. Repeatable for credit under a different title. Prerequisites: Art History major or minor with junior status of higher; MFA candidates and other undergraduate and graduate students with permission of instructor.

ART 522 Topics in Medieval and Renaissance Art 3 hrs.
Investigation of changing topics in Medieval and Renaissance art history in seminar sessions. Advanced theory and methods are stressed. Research papers are required. Course has variable topics. Prerequisites: Art History major or minor with junior status of higher; MFA candidates and other undergraduate and graduate students with permission of instructor.

ART 523 Topics in Modern Art 3 hrs.
Investigation of changing topics in modern art in seminar sessions. Advanced theory and methods are stressed. Research papers are required. Course has variable topics. Prerequisites: Art History major or minor with junior status of higher; MFA candidates and other undergraduate and graduate students with permission of instructor.

ART 524 Topics in Native American and African Art 3 hrs.
Investigation of changing topics in Native American and African art in seminar sessions. Advanced theory and methods are stressed. Research papers are required. Course has variable topics. Prerequisites: Student must be an Art History major or minor with junior status higher; MFA candidates and other undergraduate and graduate students with permission of instructor.

ART 525 Topics in Asian Art 3 hrs.
Investigation of changing topics in Asian art in seminar sessions. Advanced theory and methods are stressed. Research papers are required. Course has variable topics. Prerequisites: Art History majors or minors with junior status or higher; MFA candidates and other undergraduate and graduate students with permission of instructor.

ART 527 Art History Methods 3 hrs.
Intensive study of the methods, literature, and research techniques used in art historical inquiry and writing. Prerequisite: Art History major or minor with junior status or higher; MFA candidates and other undergraduate and graduate students with permission of instructor.

ART 529 Art History Internship 1 hr.
Designed to provide Art History majors with professional knowledge and skills in the following areas: gallery, museum, archival, visual resources library work, arts advocacy, and arts administration. Students are supervised by an Art History faculty member and a supervisor in the organization where the student is placed. Art History majors and minors only; registration requires approval by supervising faculty member.

ART 530 Ceramics Workshop 1–6 hrs.
Advanced work in ceramics on an independent basis. Prerequisite: ART 330. Repeatable for credit.

ART 531 Sculpture Workshop 1–6 hrs.
Continuation of ART 331. The advanced student explores the expressive possibilities of his or her own individual sculptural direction, with bronze and aluminum casting related techniques. Prerequisite: ART 331. Repeatable for credit.

ART 535 Multi-Media Workshop 1–6 hrs.
Various forms of art that deviate from conventional media, such as light, kinetic, and performance art. The student is expected to have a solid background in one of the traditional art forms, such as ceramics, painting, sculpture, printmaking, drawing, graphic design or metal. Permission of instructor is required. Repeatable for credit.

ART 536 Jewelry and Metalsmithing Workshop 1–6 hrs.
Advanced work in jewelry design and metalsmithing. Students collaborate with the instructor to plan a suitable and particular direction for study. Prerequisite: ART 338. Repeatable for credit.

ART 540 Painting Workshop 1–6 hrs.
Continuation of ART 340. Prerequisites: ART 340. Repeatable for credit

ART 541 Printmaking Workshop 1–6 hrs.
An advanced workshop for experienced printmaking students; all printmaking media available; emphasis on development of personal concepts and refinement of methods appropriate to individual needs through research. Prerequisite: Any ART 300 level printmaking course. Repeatable for credit.

ART 542 Watercolor Workshop 1–6 hrs.
Continuation of advanced watercolor techniques with emphasis on experimentation. Prerequisite: ART 342. Repeatable for credit.

ART 544 Hand Papermaking 1–6 hrs.
A continuation of ART 244 and ART 344. Prerequisite: ART 344.

ART 548 Photography 1–6 hrs.
Professional development through research in advanced projects. Prerequisite: ART 348. Repeatable for credit.

ART 552 Preparation for Art Teaching 3 hrs.
A course dealing with: the current social problems and issues which affect teaching and learning in the visual arts at all levels of the public school: the creative person, product, process, and press (environment); phenomena of perceptual learning; the actual construction of an operant art curriculum for the elementary, middle, and high school programs. Prerequisites: ART 452 and art major status.

ART 553 Independent Studies in Art Education 1–6 hrs.
An arranged elective course in which the student investigates and researches a problem, a project, or trends in art education. (Not to be taken in place of required art education courses.) Prerequisites: ART 252, ART 352, ART 452, ART 552 and permission of the art education chairman. This course is open to graduate and non-degree level students.

ART 560 Arts Education for the Elementary Teacher 3 hrs.
A studio course for the elementary classroom teacher to provide experiences in qualitative elementary art and integrated arts programming in the elementary public school. Repeatable for credit.

ART 570 Intern I 3 hrs. Fall, Winter Design practicum in Design Center. Involves an introduction to problem-solving for clients from the community and university. Focus is on the design process from concept to completion and involves client contact, budget preparation, electronic pre-press production and interface with printers and the printing industry. Prerequisites: ART 351, ART 361.

ART 571 Intern II 3–6 hrs. Winter Design practicum in Design Center. Involves problem solving for clients from the community and university. Focus is on the design process from concept to completion and involves design team experience, client contact, budget preparation, electronic pre-press production and interface with printers and the printing industry. Credits are available due to the fact that larger, more intense projects are sometimes given and the credits are determined by the depth of the project. Prerequisites: ART 450, ART 580.
The Department of Dance offers three programs in dance: Bachelor of Fine Arts in Dance (30 hours); and a Dance Minor (18 hours). The programs are designed for students who wish to pursue a career in dance or related fields. Students interested in pursuing the Bachelor of Fine Arts program may petition for entrance after completing at least one semester of ballet, jazz, and modern dance. Prospective students must submit two letters of recommendation, one of which must be from a dance teacher. Awards consist of taking class in ballet, jazz, and modern dance styles. Piano or percussion accompaniment is provided. Jazz courses support technique concepts used in modern and contemporary dance styles. Recorded and/or live accompaniment is used in jazz courses.

Courses for General Students

Introductory dance courses are offered for general students. Dance technique courses are open to general students without audition requirements. Course titles include: DANC 101, 102, 103, 104, 125, 181, and 225. A fee is required for each student enrolled in these courses. DANC 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 1996. A $10 fee is required for each student to provide funding for guest artists.

Admission

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 meet with the advisor during his/her junior year to secure a Graduation Audit Statement before registration for the next semester. The dance academic advisor is available to counsel students on selection of appropriate majors/minors, selection of General Education courses, and other University requirements. Matters which are beyond his/her authority will be referred to offices, on- or off-campus, qualified to assist. Graduation requirements must be completed as stipulated in the Undergraduate Catalog. At the time the student is admitted, requirements cannot be added during the student's enrollment, but the student may take advantage of coursework 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 Barteneff 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 COURSE PROGRESSION

It 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 automatically progress to the next level. Faculty determine a student's ability to move to the next level just prior to Registration for the coming semester.

CLASS FEES FOR MAJOR TECHNIQUE COURSES

A fee is required from each student enrolled in DANC 110, 120, 125, 130, 210, 220, 225, 230, 310, 320, 330, 425, and 440. A majority of the fee is used to provide a musical accompanist. The remainder is used to pay the fees and related expenses to provide such special events as classes, production, choreography, and lectures by guest artists.

Scholarships

Scholarships, awards, and assistantships are available for new and current students. Awards 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 New Student 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 the catalog or contact the Department of Dance.

ANNUAL MEETINGS

Department 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 information regarding 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 as the department meeting. A winter department meeting is held in January to inform students of 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, University 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 2.0 may not audition for formal dance 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.

Programs

Dance Major — Bachelor of Fine Arts

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 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 course work and dance-related activities. Any student discontinued from the program may reapply for the BFA after a minimum of one additional semester at WMU.

By 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. Since the BFA in Dance is a credit-hour intensive curriculum, the BFA student must complete DANC 145 Experiencing Dance in both the dance major and in Area I of the General Education Distribution Program. DANC 196 Conditioning for Dance, in combination with DANC 295 Introduction to Dance Science and Kinesthetics, meets the Area VIII Health and Well-being General Education requirement for dance majors.

BACALAUREATE WRITING REQUIREMENT

Students who have chosen the Dance major will satisfy the baccalaureate-level writing requirement by completing DANC 345 Twentieth Century American Dance.

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 460, 465). 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 310, 320, 330. DANCE 125, 225, and 295 may be used to complete the Technique/Performance requirement.

REQUIRED COURSES IN CHOREOGRAPHY—10 total hours

DANC 180 Choreography I (Prereq: consent of advisor) ............................................................... 2
DANC 161 Dance Improvisation ....................................................................................................... 2
DANC 280 Choreography II (Prereq: 180, 181) .............................................................................. 2
DANC 380 Choreography III (Prereq: 280) ....................................................................................... 2
DANC 480 Graduating Presentation (Prereq: 380) ......................................................................... 3

REQUIRED COURSES IN THEORY—29 total hours

HISTORY ........................................................................................................................................... 9
DANC 145 Experiencing Dance (also counts in General Education Area I) ................................. 3
DANC 245 Ballet History (Prereq: 145) ............................................................................................ 3
DANC 245 Twentieth Century American Dance (Prereq: 145) (Dance majors use this course to meet the University Baccalaureate-Level Writing Requirement) ............................ 3

MUSIC ............................................................................................................................................... 4
DANC 185 Music Fundamentals for Dancers .................................................................................... 2
DANC 285 Music Styles and Forms for Dancers (Prereq: 185) ......................................................... 2

PRODUCTION AND MANAGEMENT ......................................................................................... 4
DANC 389 Lighting and Staging for Dance (Prereq: Approved application required) .................. 2
DANC 489 Dance Management (Prereq: Approved application required) .................................. 2

DANCE SCIENCE/ANALYSIS ...................................................................................................... 8
DANC 195 Introduction to Barrentiâ€™s Fundamentals ................................................................. 1
DANC 196 Condition for Dancers ................................................................................................. 2
DANC 295 Introduction to Dance Science and Kinesiology .......................................................... 3
DANC 296 Laban Movement Analysis (Prereq: Sophomore standing) ........................................ 2

PEDAGOGY ................................................................................................................................. 2
DANC 440 Teaching Dance Technique (Prereq: Consent of advisor) ........................................... 2

CAPSTONE EXPERIENCE .......................................................................................................... 2
DANC 400 Practicum (Prereq: Approved application required) .................................................... 1
DANC 445 Senior Seminar (Prereq: Senior standing) ................................................................. 1

(DANC 480 Graduating Presentation is also considered a capstone experience in choreography, production, and management for the BFA student.)

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 is required to 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 ................................................................................................. 3
ART 140 Studio Experience (2-D) .................................................................................................. 3
ART 148 ..........................................
DANC 148 ..........................................
MUS 148 ..........................................
THEA 148 Direct Encounter with the Arts ..................................................................................... 4
ART 220 History of Art .................................................................................................................. 3
ART 221 History of Art .................................................................................................................. 3
BIOS 115 Principles of Biology ....................................................................................................... 4
BIOS 211 Human Anatomy (Prereq: BIOS 114) .............................................................................. 4
ED 230 The Nature of Creativity .................................................................................................... 3
ENGL 150 Thought and Writing: Variable topics ............................................................................ 4
ENGL 110 Literary Interpretation .................................................................................................... 4
ENGL 150 Literature and Other Arts ............................................................................................... 4
ENGL 935 Principles of Writing ..................................................................................................... 3
FREN 101 French I ........................................................................................................................ 4
FREN 101 Basic French II (Prereq: 100 or equivalent) ................................................................. 4
HIST 315 Art History ..................................................................................................................... 3
MGMT 210 Small Business Management ....................................................................................... 3
MUS 150 Music Appreciation: American Music ............................................................................ 4
MUS 155 Music Appreciation: Pop/Jazz ........................................................................................ 4
MUS 350 American Music ............................................................................................................. 4
MUS 352 Non-Western Music ........................................................................................................ 4
MUS 450 Music Appreciation: The Symphony .......................................................................... 3
PHIL 200 Introduction to Philosophy ............................................................................................. 4
PHIL 312 Philosophy of Art ............................................................................................................ 4
REL 311 Myth and Ritual ................................................................................................................ 4
THEA 100 Introduction to Theatre .................................................................................................. 4
THEA 125 Introduction to African-American Theatre ................................................................... 3
THEA 141 Improvisation .............................................................................................................. 3
THEA 142 Acting I .......................................................................................................................... 3

Dance Major—Bachelor of Arts

53 hours

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. DANC 196 Conditioning for Dance, in combination with DANC 295 Introduction to Dance Science and Kinesiology, meets the Area VIII Health and Well-being General Education requirement for dance majors.

BACCALAUREATE WRITING REQUIREMENT
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 of liberal arts courses. One course each must be selected from approved General Education courses in Art, Music, and Theatre. The remaining credit hours may be chosen 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 IN TECHNIQUE AND PERFORMANCE—18 total hours
BA students must enroll in at least one major technique course (DANC 110, 120, 130, 210, 220, 230, 310, 320, 330) each semester. During his/her program, the student must elect at least one course in each of the following areas: ballet technique, jazz technique, modern technique, and performance (DANC 465, 466), and one 2-credit hour course in partner technique. The student must complete at least one semester of one of the following: DANC 310, 320, 330. DANC 125, 225, and 425 may be used to complete the Technique/Performance requirement.

REQUIRED COURSES IN DANCE STUDIES
(Choreography and Theory)—35 total hours
DANCE SCIENCE/ANALYSIS
DANC 195 Introduction to Barojeff Fundamentals
DANC 196 Conditioning for Dancers
DANC 295 Introduction to Dance Science and Kinesiology

PEDAGOGY
DANC 440 Teaching Dance Technique (Prereq: Consent of advisor)

THEORY ELECTIVES
Select from:
DANC 296 Laban Movement Analysis (Prereq: Sophomore standing)
DANC 325 Special Studies in Dance Theory
DANC 380 Choreography III (Prereq: 280)
DANC 385 History of Dance (Prereq: Notation (Prereq: 110, 130, 185))
DANC 489 Dance Management (Prereq: Approved application required)
DANC 400 Practicum (Prereq: Approved application required)
DANC 445 Senior Seminar (Prereq: Senior standing)

Dance Minor
18 hours
REQUIRED COURSES IN TECHNIQUE—6 total hours
Two credit hours in ballet selected from:
DANC 101 Beginning Ballet
DANC 110 Ballet Technique I
DANC 210 Ballet Technique II
DANC 225 Special Studies: Men’s Ballet
DANC 310 Ballet Technique III
DANC 425 Special Studies: Pointe, Partnering

Two credit hours in jazz selected from:
DANC 120 Jazz Technique I
DANC 220 Jazz Technique II
DANC 320 Jazz Technique III

Two credit hours in modern selected from:
DANC 103 Beginning Modern
DANC 130 Modern Technique I
DANC 230 Modern Technique II
DANC 330 Modern Technique III

REQUIRED COURSES IN THEORETICAL—3 total hours
DANC 145 Introduction to Dance Improvisation
DANC 181 Dance Improvisation

CHOREOGRAPHY/THEORY ELECTIVES—2 total hours
A minimum of two hours to be elected from the following courses, in consultation with the dance academic advisor:
DANC 180 Choreography I (Prereq: consent of advisor)
DANC 185 Music Fundamentals for Dance
DANC 195 Introduction to Barojeff Fundamentals
DANC 196 Conditioning for Dancers
DANC 245 Ballet History (Prereq: DANC 145)
DANC 295 Introduction to Dance Science and Kinesiology
DANC 296 Introduction to Laban Analysis
DANC 325 Special Studies in Dance Theory
DANC 345 Twentieth Century American Dance

ELECTIVES—6 total hours
Additional electives from any technique or theory courses for which the student has met the prerequisites. In order to ensure that the dance minor has experienced the rigors of intensive dance training, the student must complete one of the following—DANC 110, 120, 125, 130, 210, 220, 230, 310, 320, 330, 425—if one of these courses has not been elected under Required Courses in Technique listed above.

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. Rhythmical 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 developing 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, rhythmic awareness, basic 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 125 Special Studies in Introductory Dance Technique
1–6 hrs.
A study of areas in introductory dance technique not included in regularly scheduled courses. Examples of possible topics include: African-American Dance, Music Theatre Dance Styles, Dance Technique Skill Building, and World Dance Forms. Repeatable for credit up to 6 hours.
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, and the application of kinesiological principles. Students will continue in DANC 130 until advanced to DANC 220 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 all levels: musical, visual and verbal. 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 response papers 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 solo 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 notation, clef, scales, key signatures, intervals and triads. The rhythm work begins with reading of simple and compound meters and progresses through complex syncopations and polyrhythmic exercises. 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 abstracts in DANC. Prerequisite: Dance majors and minors only.

DANC 195 Introduction to Barteneff Fundamentals
1 hr.
The course introduces Irmgard Barteneff’s theories of functional movement. Through practice students will explore major Fundamentals concepts such as body connections, sequencing, movement initiation, mobility/stability and spatial intent. Students will also learn the “Basic Six,” a series of movement sequences which are distillations of Barteneff’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. This course, in combination with DANC 295, meets the Area VIII Health and Well-being General Education requirement for dance majors.

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 lyrical 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 225 Special Studies in Intermediate Dance Technique
1–6 hrs.
A study of areas in intermediate dance technique not included in regularly scheduled courses. Examples of possible topics include: Men’s Ballet, Repertoire, Intermediate Tap, and Contact Improvisation. Repeatable for credit up to 6 hours. Prerequisite: Consent of instructor.

DANC 230 Modern Technique II
2 hrs.
A development of modern technique at the intermediate level. Emphasis is on quick study skills and movement which has contrasting dynamic qualities, varying rhythmic patterns and spatial complexity. 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 not used in group choreography. Prerequisite: 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 analytical concepts, conditioning principles and injury prevention, with special attention given to the application of these principles to class, rehearsal, choreography and individual anomalies. This course, in combination with DANC 196, meets the Area VIII Health and Well-being General Education requirement for dance majors.

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 technique class, rehearsal, choreography and individual anomalies. This course, in combination with DANC 196, meets the Area VIII Health and Well-being General Education requirement for dance majors.

DANC 310 Ballet Technique III
2 hrs.
Ballet technique for the advanced/pre-professional student in the classical idioms. Emphasis is placed on complex movement sequences, ensemble awareness, 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 regularly scheduled courses. Examples of possible topics include: Men’s Ballet, Repertoire, Intermediate Tap, and Contact Improvisation. Repeatable for credit up to 6 hours. Prerequisite: Consent of instructor.

DANC 330 Modern Technique III
2 hrs.
A development of ballet 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 335 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; costume: 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 336 Modern Technique III
2 hrs.
Technique for the advanced/pre-professional student in the modern idioms. Emphasis is placed on the ability to quickly analyze and skillfully reproduce complex movement.
DANCE 229

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 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; the 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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 195.

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 boards. Students will have hands-on experience in producing dance concerts through crew assignments completed outside of class, including hanging crew, running crew, 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 dance. Repeatable for credit up to 4 hours. Prerequisite: Approved application required.

DANC 425 Advanced Technique 1–6 hrs.
A study of areas in advanced dance technique not included in regularly scheduled courses. Examples of possible topics include: Pointe and Variation, Partnering, Advanced Tap, and Senior Technique. Repeatable for credit up to 8 hours. Prerequisite: Consent of instructor.

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 choreographic project accompanied by a portfolio and an oral examination. Prior to registration the student must complete an application, select a faculty advisory committee, and secure 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 solo requirement and approved application.

DANC 489 Dance Management 2 hrs.
Course covers front-of-house management and publicly, 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 theatre 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.
Programs in Music

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, jazz 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 degrees afford certification to teach in the elementary classroom and/or to teach as a music specialist. 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.

Those students seeking a music minor must secure a minor slip from the advisor in the School of Music in order that the declaration of the minor be official. Official declaration of the music minor must be made prior to registration for the final eight hours of music coursework which will apply to that minor.

Admission

Admission to Western Michigan University is granted only upon application to 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 the 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 auditions.

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 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 three 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 credit hours not acceptable to music curriculum requirements, toward General Education electives or free electives.

Three areas—applied music, music therapy, 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 requirements for the major (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 continue standing as a major in music performance, composition, jazz studies, music history, or music theory, the student must earn a minimum grade point specific professional area of music. 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 complete the Music 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

Advising: 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 these 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 course work, all students must satisfy additional requirements in recital attendance and recital performance.

The requirement(s) for recital performance are as follows:

1. Bachelor of Music candidates with a major in music performance must present a Senior Recital which is approved by and acceptable to the faculty of the respective performance area.
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 performances 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 Junior and/or 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 taken by 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 from the student’s choice or (2) receive credit for the course(s) in which competency is demonstrated by paying an examination fee 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 stipends at the time of their audition for 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 the two 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.

BACCALEAUREATE WRITING REQUIREMENT

Students who have chosen any music major will satisfy the Baccalaureate Writing Requirement by successfully completing MUS 352 Non-Western Music.

Bachelor of Music CORE REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
<th>Music Convocation (1 semester)</th>
<th>0.0</th>
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<tr>
<td></td>
<td></td>
<td>Applied Music 200, 300 (see Electives below)</td>
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</tr>
<tr>
<td>Basic Music 160, 161, 260, 261</td>
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<td></td>
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<tr>
<td>Aural Comprehension 162, 163, 259, 265</td>
<td>4.0</td>
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<tr>
<td>History or Theory Elective (see Electives below)</td>
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<tr>
<td>Music History and Literature 170, 270, 271</td>
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<td></td>
<td></td>
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<tr>
<td>Performance Elective (see Electives below)</td>
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<td></td>
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<tr>
<td>Keyboard Accompaniment</td>
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<tr>
<td>Conducting 215</td>
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<td>General Education Electives</td>
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<tr>
<td>Free Electives</td>
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<tr>
<td>Music Clearance (verification of completion of music performance and attendance requirements)</td>
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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 300 (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 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. 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 one 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 certificate.

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 of MUS 100 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 majors must elect a vocal ensemble and Keyboard/Music Education—Instrumental majors must elect a instrumental ensemble.)

2. The remaining four semester hours of performance electives may be selected from the following: MUS 107, 108, 109, 109, 110, 111, 112, 113, 118, 119, 119, 210, 211, 212, 218, 317, 517.

Please note: All keyboard majors are required to elect one semester of MUS 190 Accompanying (theory/history elective). 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, College Musicum.

Theory electives may be selected from the following: MUS 263, 360, 555, 558, 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

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 3.0 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 examination which should be attempted not later than the Sophomore Hearing.

### Music Education and Elementary Education/Music
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 completed 35 hours of course work, completed the music core in theory/history/aural comprehension/conducting with a GPA of 2.5 or better, have an overall GPA of 3.25 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.

### 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 major area of concentration the music advisor will outline the course work 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) 17 hrs.

- General Music Methods 336 3
- Choral Techniques 339 2
- Methods Elective I 3
  - Select one from the following: Choral Methods (340), Instrumental Methods I (344), String Methods (345)
- Teaching and Learning in Music 348 3
- Conducting 330 2
- Instrument elective 1
  - Select one from the following:
    - Fundamentals of Guitar (126); Instruments of the Band and Orchestra (279); Instruments of the Classroom (280).
- Methods Elective II 2
  - Select from the following: Music for the Special Student (385), Technology in Music Education (386)
- Second Instrument 4
  - Piano, Keyboard, Musicianship 220, 221, 320, and/or pass the exam administered by the Keyboard and Professional Education 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 study are required, with one semester at 200 level voice.
- College of Education Courses 21 Human Development 250 3
  - K-12 Content Literacy 305 3
  - School and Society 395 3
  - Seminar in Intern Teaching 410 2
- Intern Teaching 475 10
- Before the student will be recommended for intern teaching, he/she 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) 3
- Methods Elective I 3
  - 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) 3
- 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 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—Violin, Viola, Cello—Violin, Viola (129); Vocal Techniques for Music Educators (117); Music 130, 133, 142, 143, 144, 145.
- 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/or 121) as a deficiency.
- College of Education Courses 21 Human Development 250 3
  - K-12 Content Literacy 305 3
  - School and Society 395 3
  - Seminar in Intern Teaching 410 2
- Intern Teaching 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 109 (see "Exceptions To Core Requirements").

### Music Therapy Major
Core requirements (minus exceptions)

- Courses in Music Therapy 281, 289, 290, 380, 381, 383, 473, 474, 498, 500 42 22
  - * Keyboard Musicianship 220, 221, 320, 332 4
- Fundamentals of Guitar 126 1
- Voice Class 117 1
- Instruments of the Band and Orchestra 279 1
- Instruments of the Music Classroom 280 2
- Professional Electives: select from 123, 129, 129, 130, 132, 142, 143, 144, 145, 336, 366, 555, 558, Applied Music 300, 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 any Keyboard Musicianship requirements except MUS 322.

The student must achieve a 3.0 grade point average in the therapy 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) 6
- Counterpoint 560 2
- Music Electives 5
- Senior Recital (required for Music Clearance) 0

### Music Performance: Keyboard 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
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 "E lecting 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
Opera Workshop .......................................................... 2
Keyboard Musicianship 220, 221, 320, 321 ........................................... 4
Foreign Languages .......................................................... 8
Vocal Pedagogy 590 ........................................................... 2
Diction (Choose from 233, 234) .................................................. 2
Music electives ................................................................. 2
Senior Recital (required for Music Clearance) ....................................... 0

In addition to the 8 hrs. of foreign languages above, the music-performance-vocal major must include two semesters of one foreign language in completing General Education requirements. The language must be selected from the list of approved General Education Proficiency 4 courses.

Music Theory

Composition 262 ............................................................... 2
Introduction to Musicology 570-571 .................................................. 6
Seminar in Music Theory 565 (2 semesters) .................................... 4
Music History/Literature Elective (see Electives above) ....................... 2
Counterpoint 560-561 .......................................................... 2
Orchestration 567-568 ............................................................ 4
Professional Electives (choose from Composition 263, Seminar in Electronic Music Composition 584, Seminar in Music Composition 362, Musical Acoustics 566, Style Analysis 360, Jazz Arranging 555, Jazz Improvisation 558) ....... 8
All Bachelor of Music—Music Theory candidates must pass a piano proficiency examination as outlined below.

Composition

Composition 262–263 .......................................................... 4
Musical Acoustics 566 ............................................................ 3
Seminar in Music Composition 362 .................................................. 8
Seminar in Electronic Music Composition 584 ................................. 8
Counterpoint 560-561 .......................................................... 2
Applied Music 100 (piano, string instrument, voice) — selection based on individual student's needs and instructor availability .................................................. 6
Orchestration 567, 568 ............................................................ 4

The composition student must have previous composition experience before being admitted to a composition major. This experience may be acquired by transferring approved credit in composition from another institution or by successful completion of Composition 262-263. All Bachelor of Music—Composition candidates are required to present a Senior Recital consisting of thirty minutes of original compositions which are an outgrowth of the candidate's course work and which have been approved by the composition faculty.

All Bachelor of Music—Composition candidates must pass a piano proficiency examination as outlined below. It is recommended that the student also consider electing ART 120, ENGL 150, and THEA 100.

ADDITIONAL REQUIREMENTS FOR COMPOSITION AND MUSIC THEORY MAJORS

Keyboard Requirements

All composition and theory majors must demonstrate keyboard competency as a graduation requirement or for admission to candidacy for a graduate degree. Competency examinations will be from the keyboard area and from the area of the student's major.

The student should be prepared to present "readings" of a wide range of literature with reasonable accuracy and musical integrity rather than attempting a performance level at the entrance." Sight-reading ability is also expected.

Functional skills related to the student's major shall be examined as follows:

Other Requirements

1. Ability to harmonize at sight: Level: Oxford Folks Song Sight-singing Series—Book III.
2. Play harmonized ascending and descending major and minor scales—all keys.
3. Ability to demonstrate in context the following:
   • All diatonic triads and seventh chords, including all inversions.
   • Chromatic chords including the following: secondary dominants, borrowed chords, augmented sixth chords, dominant dominant seventh chords, the Neapolitan sixth chord, diminished seventh chords, and half-diminished seventh chords.

Music History

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 567/568, Medieval Music 585, Renaissance Music 586)) ........................................... 4

All Bachelor of Music—Music History candidates must demonstrate to a level of competency equal to that of MUS 320 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 ........................................... 2
Jazz Ensembles 119 or 213 .......................................................... 2
Jazz Combo 218 ................................................................. 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
Counterpoint 560-561 .............................................................. 2
Electronic Media 594 .............................................................. 2
Professional Electives (choose from Piano 100, Composition 260/263, Conducting 330/331, Technology in Music and Music Education 386, Counterpoint 561, Seminar in Composition 564, Orchestration 567/568, Musical Acoustics 569) .................................................. 3

All Bachelor of Music—Jazz Studies candidates are required to present a senior recital.

Bachelor of Arts

124 total hours

1. General Education Electives .................................................. 37
2. A major in music:
   Music Convocation 101 (6 semesters) .................................. 0
   Applied Music 200 (must pass sophomore hearing requirement) .... 8
   Basic Music 160–161, 260–261 .............................................. 12
   Aural Comprehension 162, 163, 259 ..................................... 26
   Keyboard Fundamentals 120–121 .......................................... 2
   Music History/Literature 170, 270, 271 ................................... 8
   Performance Electives (major ensemble) .................................. 4
   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 Theatre Performance

See description under the Theatre section of this undergraduate catalog.

Bachelor of Science Elementary Education—Music

See description under the College of Education section of this undergraduate catalog.

Music Minor

24 hours

Minors must take the following basic courses:
Fundamentals of Music 159 .......................................................... 2
Basic Music 160 ................................................................. 3
Aural Comprehension 162 .......................................................... 1

Minors must choose one of the following two groups:
   Applied Music 100 ............................................................ 2
   *Performance Electives ......................................................... 2
   (Select from 107, 108, 110, 111, 112, 113) (See description under the Theatre section of this undergraduate catalog.

Music Appreciation: Live Music 150 .................................................. 4
American Music 350 ............................................................ 4

*Personal auditions required (pending space availability).

Electives (10 to 14 hours); minors select from:
   Keyboard Musicianship 120, 121, 220, 221, 320, 321, 322; Voice Class 122, 123; Music Appreciation 150, 151, 350, 352, 450; Basic Music 161, 260, 261, electives; Aural Comprehension 160, 359, 559; Conducting 215, 330, 331; Composition 262, 263, 362,
Music Courses (MUS)
A list of approved General Education courses can be found in "Graduation Requirements and Academic Advising" 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 develops general musicianship and provides training in choral singing. Performances are presented on campus and in the community. Membership by audition.

MUS 109 Marching Band
1 hr.
The University Marching Band is the major performing ensemble for Fall football activities. Positions are open to all students who play wind or percussion instruments. Music Education: Instrumental majors who play a wind or percussion instrument are required to take this course during two Fall semesters. Membership is 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 orchestral experience. Many line 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 Show 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 affords students the opportunity to develop performance skills in contemporary and traditional big band jazz. Student compositions and arrangements are encouraged and are a regular part of Lab Band Concerts. The Ensemble performs regularly on campus and in the surrounding community. Membership is 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 quartets, 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 quartets, 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 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.
The University Chamber Singers is an advanced choral ensemble which affords students the opportunity to perform outstanding literature in contemporary and traditional choral literature. 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.

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 50-minute lesson; four credit hours, two 50-minute lessons. 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. ($7)
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 music 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 in 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 the 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 prepared to progress into other piano courses required for music majors/minors. Prerequisite: MUS 102 or instructor consent.

MUS 115 Voice Technique 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 through 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 primary 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 in an acceptable manner and to demonstrate a knowledge of 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 125 Guitar Class II 2 hrs.
This class is intended for the student who has completed Guitar Class I or 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. Instructive guidance 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 working knowledge of percussion instruments, including methods and materials, care and maintenance, and the function of the percussion section in a band or orchestra. For music majors only.

MUS 133 Clarinet Class 1 hr.
Fundamentals of clarinet pedagogy and performance. For music majors only.

MUS 141 Music in Special Education 3 hrs. ($10 fee)
Designed for teachers of exceptional children. Study of methods and materials for singing, rhythmic, and creative activities in classes for emotionally, mentally and physically handicapped. The student learns functional use of piano and informal instruments. Values of musical activities for all exceptionalities are emphasized. Substitutes for MUS 240 for Special Education majors.

MUS 142 Oboe/Bassoon Class 1 hr.
Fundamentals of oboe and bassoon pedagogy and performance. Prerequisite: Music majors only.

MUS 143 Trumpet/Horn Class 1 hr.
Fundamentals of trumpet and horn pedagogy and performance. Prerequisite: Music majors only.

MUS 144 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 149 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.
MUS 150 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 a 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, reception, and 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, various 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 improvising accompanying 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 phonic 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 234 French/German Diction 1 hr.
A phonic 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 259 Aural Comprehension IV 1 hr.
A continuation of MUS 259. This course develops dictation, error detection, sight-reading, performance, improvisation, andaural analysis techniques 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. Prerequisite: MUS 279.

MUS 280 Instruments of the Music Classroom 1 hr.
Students will survey the instruments commonly used in the music classroom. All will learn the proper techniques for playing and teaching autoharp, ukulele, 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's populations, offer instruction in social-recreational instruments, allow for a more in-depth 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 times to allow for more individualized instruction. Exams will be of a written, playing, and/or presentational format. Prerequisite: MUS 196 and MUS 281, or both may be taken concurrently.

MUS 300 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.), allow for a more in-depth study of appropriate music materials and activities and allow for experience in designing and implementing music therapy treatment procedures for individuals and groups. Exams will be of a written, playing, and/or presentational format. Prerequisite: MUS 126 and MUS 281, or both may be taken concurrently.

MUS 320 Advanced Keyboard Musicianship 1 hr.
Course emphasis is on the development of 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 improvising accompaniments, and improvisation using blues progression 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, ostinati, use of lead-sheet symbols, playing by ear, functional keyboard harmony, and sight-reading of melodies while improving accompaniments, and improvisation using blues progression and scales. Prerequisite: MUS 320 with a grade of "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 used with students acting as conductor-teachers and playing secondary instruments. Literature appropriate to various levels of junior and senior high school bands and orchestras will serve as materials for conducting with students performing on major instruments. Prerequisite: MUS 215 with a grade of "C" or better.

MUS 336 General Music Methods 3 hrs.
A study and survey of sequential musical experiences in general music classes in grades K-8. The course will include education objectives, philosophical concepts, instructional methods and materials and various innovative approaches used in the general music class. Administration and implementation of the class will be examined. The course is specifically designed to acquaint the student with various teaching techniques. Each student will have an opportunity to participate in general music classes in area schools one-half day a week. Prerequisite: Acceptance into Music Education curriculum.

MUS 339 Choral Techniques 2 hrs.
A course which develops the principles of vocal pedagogy, diction, and improvisation as they apply to choral settings. Study will include the development of the child's and adolescent's voice, selecting and arranging appropriate music for those voices, the problem of vocal abuse, and the rationales behind group vocal warm-up practices. Prerequisite: MUS 330 or concurrent.

MUS 340 Choral Methods 3 hrs.
Extensive involvement with actual teaching of choral music in public schools is a central part of this course. Various philosophies of music education, music reading programs, and choral music education will be discussed. Students will focus on the development of aesthetic behaviors and performance objectives for choral ensembles. Administrative duties needed to implement and maintain a choral program will be identified. Advanced techniques for producing musicals and madrigal dinners, and the principles involved with developing show/ jazz choirs will be covered. Job seeking and professional growth will be discussed. Prerequisite: MUS 339 or MUS 344 with a "C" or better.

MUS 344 Instrumental Methods I 3 hrs.
Students will apply various learning theories, behaviorist techniques, and cognitive learning skills to the instrumental music lesson. Students will participate in designing a beginning instrumental music program and a system for initiating goals for program development. Administrative skills needed to implement and maintain an instrumental program will be developed. Various philosophies of music education and curriculum development will be discussed. Field experiences in the schools will constitute some of the assignments in this course. Prerequisite: Acceptance into Music Education curriculum.

MUS 345 String Methods 2 hrs.
Extensive involvement with actual teaching of strings in public schools is a central part of this course. The course presents the theoretical, pedagogical, and practical aspects of string instruction in the elementary, middle, and senior high schools. Administrative duties needed to maintain string programs will be examined. Job seeking and professional growth will also be discussed. Prerequisite: MUS 344 with a "C" or better.

MUS 347 Instrumental Methods II 3 hrs.
Advanced study of the materials and methods needed for successful teaching of instrumental music in the schools. 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 ensemble 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 3 hrs.
This course is designed to teach students to write outcome statements, 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
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. Prerequisite: MUS 281 or concurrent.

MUS 387 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 different student. Methods for providing successful music experiences will be discussed. The course will provide 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. Prerequisite: MUS 281.

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 (top) 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. Prerequisite: PSY 100 or CS 502 or consent of instructor.

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 voicings, scoring practices, calligraphy and contemporary trends within the medium. Prerequisite: MUS 281 or concurrent.

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...
MUS 559 Jazz Improvisation II 2 hrs.
A study and directed application of advanced techniques of jazz improvisation including chord extensions, 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. ($50 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 and 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 essentials of a particular style. Prerequisite: MUS 558 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. Periodic assignments 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 Americas from about 1910 to the present day.

MUS 588 Music Cultures of the World 3 hrs.
This topics course is designed to provide students with an intensive study of the musical traditions of a single cultural-geographic area. Attention will focus on the characteristics of instruments and instrumental ensembles, vocal traditions, sound structures, and theoretical traditions as well as the historical, political, and socio-demographic factors that shape the area's performing traditions. May be repeated for credit with different topics. Prerequisite: Consent of instructor for non-music majors.

MUS 589 Topics in Ethnomusicology 3 hrs.
This topics course examines various methods, problems, and issues in ethnomusicological writing and research. Topics will vary and be announced each semester. The approach taken in the course reflects current practice in the field of ethnomusicology, drawing upon theoretical writings in a variety of disciplines including ethnomusicology, musicology, anthropology, theater, cultural studies, and women's studies. May be repeated for credit with different topics. Prerequisite: Consent of instructor for non-music majors.

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 predominantly 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 theory 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 consent.

MUS 597 Projects in Music Education
1–4 hrs.
A program of independent study to provide the unusually qualified music 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 Bernhard
Rachel Briley
James Daniels
Pat Daniels
C. J. Gianakaris
Timothy Hanson
Joan Herrington
John Jansen
Matthew A. Knewton
Tom Lowry
Gwen Nagle
Paul Reinhardt
Greg D. Reinhart
Denise Sandt
Lyda Stillwell
Van 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 stress the interdependency of academic and production experiences, the importance of a broad theatre background, and the mastery of theatre fundamentals in preparation for the more advanced theatre training offered in graduate schools or professional theatre internship/apprentice 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 Studio 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 regularly enrolled students in good academic standing (2.0 g.p.a. or above) 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 curriculum 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, and 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/Application Application from the Department of Theatre. 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 curriculum 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

The 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. Music Theatre Performance and Theatre Education Majors should meet with their respective advisors.

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.

Students transferring into the Performance Program will be assessed at the time of their audition and will be placed into the program at the level of study deemed appropriate by the Performance faculty.

Programs
The Department of Theatre offers three majors—Theatre, Theatre Education, and Music Theatre Performance—and one minor—Theatre.

BACCALAUREATE WRITING REQUIREMENT
Theatre students should take THEA 370 Theatre History I to complete the Baccalaureate Writing Requirement. Theatre Education majors may take THEA 370 or the designated course in their second major to complete the 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.

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 a concentration in Design and Technical Production.

REQUIRED COURSES
THEA 120 Stagecraft I .................. 3
THEA 141 Improvisation .................. 3
THEA 142 Acting I .................. 3
THEA 170 Script Analysis .................. 3
THEA 232 Scenic Design .................. 3
THEA 250 Theatre Practice .................. 6
THEA 331 Costume Design .................. 3
THEA 332 Lighting and Sound Design .................. 3
THEA 351 Directing I .................. 3
THEA 370 Theatre History I .................. 3
THEA 371 Theatre History II .................. 3
THEA 470 Development of Theatre Art .................. 3

Required Courses for PERFORMANCE Concentration (THP)
THEA 241 Voice and Movement .................. 3
THEA 245 Acting II .................. 3
REQUIRED COURSES FOR DESIGN AND TECHNICAL PRODUCTION (THD)

THEA 120 Stagecraft I ........................................... 3
THEA 141 Improvisation .............................................. 3
THEA 142 Acting I .................................................. 3
THEA 170 Script Analysis ........................................... 3
THEA 290 Theatre Practicum ....................................... 3
THEA 370 Theatre History I ......................................... 3
THEA 371 Theatre History II ....................................... 3
and one (1) of the following:
THEA 232 Scenic Design ........................................... 3
THEA 331 Costume Design .......................................... 3
THEA 332 Lighting and Sound Design ........................ 3
A grade of "C" or better is required in all courses.

SUGGESTED COURSE OF STUDY FOR PERFORMANCE MAJORS (THI)

First Year—Fall
THEA 120, 141, 170, 290

First Year—Winter
THEA 142, 290

Second Year—Fall
THEA 241, ENGL 252 (General Education; prerequisite to THEA 370), THEA 290
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.
(Note: THEA 232, 331, and 332 should be taken between second year winter semester and fourth year winter semester.)

Third Year—Fall
THEA 290, 342, 351, 370

Third Year—Winter
THEA 290, 344, 371

Fourth Year—Fall/Winter
THEA 470; choose two from THEA 352, 441, 443

SUGGESTED COURSE OF STUDY FOR DESIGN AND TECHNICAL PRODUCTION MAJORS (THI)

First Year—Fall
THEA *120, 131 or 132 (as offered), 141, 170, 290

First Year—Winter
THEA 142, 290

(*Courses may be taken either semester)

Second Year—Fall
THEA 131 or 132 (as offered), 290

Second Year—Winter
THEA 220 (as offered), 232 or 331 or 332, 290, ENGL 252 (General Education; prerequisite to THEA 370)
All students following this course of study are reviewed by the Design and Technical Production faculty and staff at the end of the second year. Satisfactory review is necessary for the student to elect upper-level courses.

Third Year—Fall
THEA 222 or 331 or 332, 290, 370, 431 or 432 (as offered)

Third Year—Winter
THEA 222 or 331 or 332, 290, 370, 431 or 432 (as offered)

Fourth Year—Fall
THEA *351, 431 or 432 (as offered), 470, elective (see list below)
(*THEA 351 may be taken third or fourth year)

Fourth Year—Winter
THEA 400

SUGGESTED COURSE OF STUDY FOR THEATRE EDUCATION MAJORS (THI)

First Year—Fall
THEA *120, 141, 170, 290

First Year—Winter
THEA 142, 290

(*These courses may be taken either semester)

Second Year—Fall
THEA 143, 232, 290

Second Year—Winter
THEA 244 (as offered), 331
All students following this course of study are reviewed by the Director of Theatre Education at the end of the second year. Satisfactory review is necessary for the student to elect upper-level Theatre courses.

Third Year—Fall
THEA 351

Third Year—Winter
THEA 244 (as offered), 332, 352, 471

Fourth Year—Fall/Winter
THEA 564

Fifth Year—Fall
Student Teaching

Music Theatre Performance
Bachelor of Fine Arts
83 credit hours

ADMISSION

Admission to the program is by prepared audition before the Dance, Music and Theatre faculty. Additional information is available by contacting the curriculum advisor. Continuation in the program is based upon periodic reviews. Moreover, 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 one year probationary period in the program to reach this proficiency level in dance and/or music.

REQUIRED COURSES IN DANCE . . . . .21 hrs.
DANC 104 Beginning Tap ............................................ 2
DANC 110 Ballet Technique I ..................................... 2
DANC 120 Jazz Technique I ....................................... 2
DANC 425 Special Studies in Dance Technique: Music Theatre Dance ............................................ 1
DANC 495 Performance Workshop (Prereq: 395); MTP majors only .................................................. 2
DANC 496 Performance in Musical Theatre (Prereq: MTP majors only) ................................................ 6

Technique classes at Level I or above ................................ 6

REQUIRED COURSES IN MUSIC . . . . . .23 hrs.
MUS 115 Voice Technique I ........................................... 2
MUS 116 Voice Technique II .......................................... 2
MUS 120 Keyboard Fundamentals ................................... 1
MUS 121 Keyboard Fundamentals (Prereq: MUS 120) ........... 1
MUS 160 Basic Music (Prereq: MUS 159) .......................... 3
MUS 162 Aural Comprehension I (Prereq: MUS 159) .......... 1
MUS 163 Aural Comprehension II (Prereq: 162, "C" or better) .... 1
MUS 199 Applied Voice 4 (Prereqs. 2 hrs. ea.) (Prereq: MUS 120, MUS 160) ................................................. 8
MUS 220 Keyboard Musicianship (Prereq: MUS 121, "C" or 3 or better) .................................................. 1

THEATRE 241

THEA 342 Acting III .................................................. 3
THEA 344 Period Styles of Acting ................................. 3
THEA 352 Directing II ................................................ 3
THEA 441 Acting Studio ............................................... 3
THEA 443 Acting for the Camera .................................... 3

A grade of "C" or better is required in all courses.

SUGGESTED COURSE OF STUDY FOR PERFORMING ARTS MAJORS (THI)

First Year—Fall
THEA 120, 141, 170, 290

First Year—Winter
THEA 120, 141, 170, 290

(*These courses may be taken either semester)
MUS 395 Performance Development and Technique 3 hrs.

REQUIRED COURSES IN THEATRE 32 hrs.

THEA 141 Improvisation 3 hrs.
THEA 142 Acting I 3 hrs.
THEA 230 Stage Make-up 3 hrs.
THEA 241 Voice and Movement I 3 hrs.
THEA 245 Acting II 3 hrs.
THEA 272 Music Theatre History Script Analysis I 3 hrs.
THEA 290 Theatre Practicum 2 hrs.
THEA 342 Acting III 3 hrs.
THEA 344 Period Styles of Acting 3 hrs.
THEA 351 Directing I (Prereq: Junior standing) 3 hrs.
THEA 372 Music Theatre History Script Analysis II 3 hrs.

ELECTIVES 7 hrs.
Seven hours from courses in the Department of Dance, the School of Music, and the Department of Theatre, with the consent of the Director of Music Theatre Performance.

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.

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.

Theatre Courses (THEA)
A list of approved General Education courses can be found in “Guidance and Academic Advising” earlier in this catalog.

THEA 100 Introduction to Theatre 3 hrs.
Considers 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 a African-American perspective examining the activities and development 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; the 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 131 Drafting and Color Media 3 hrs.
A methods course for beginning students in lighting, costume, scenic design, and technical production providing instruction and practice in the special techniques of drafting for the theatre and in the use of various color media for design renderings and scale models.

THEA 132 Period Styles of Design 3 hrs.
A survey of historical periods and design styles as they are applied to the theatre. The study will include an examination of architecture, costumes, furniture, interiors, lighting, ornament and stage scenery.

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. Prerequisite: THEA 141.

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 textbooks. Cross listed with DANCE 148, MUS 148 and ART 148. May be taken only once for credit by 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 230 Stage Makeup 3 hrs.
Study and practice of the basic principles and techniques of stage makeup.

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 models, and including further development of skills in drafting for the theatre. Prerequisites: THEA 120 and 170.

THEA 241 Voice and Movement 3 hrs.
Development and training of the actor's vocal and physical instrument for theatrical performance. Prerequisite: THEA 245.

THEA 244 Theatre in Education 3 hrs.
This class gives students the opportunity to explore the field of Theatre in Education from a performance/production perspective. During the first half of the class, students will work through structured improvisation to create an interactive performance program designed as an instructional strategy to supplement a specified public school curriculum content area. The performance program will then tour to public school audiences. Prerequisites: THEA 141 and 142.

THEA 245 Acting II 3 hrs.
This course integrates theories and practices of improvisation, Acting I, and Voice and Movement in the process of role study and development. Prerequisites: THEA 141 and 142.

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. Various specific script studies will be analyzed within their historical context.

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). (Lab fee required.)

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. Prerequisites: THEA 120 and 170.

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 and 170.

THEA 342 Acting III 3 hrs.
The application of role study and analysis to character development in the preparation and performance of scenes from either full-length plays. Prerequisite: THEA 241 and 245.

THEA 344 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 342.

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, and junior standing.

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 directorial 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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. Prerequisite: 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 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 131, 132, and one of the following: THEA 232 or 331 or 332.

THEA 432 Computer-Aided Theatre Design
3 hrs.
An introduction to the application of computer hardware and software to design for the theatre, including instruction and practice in CAD, color imaging, and 3-D modeling. Lab fee required for printing materials. Prerequisites: THEA 131, 132, and one of the following: THEA 232 or 331 or 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 the major. Prerequisites: THEA 342 and 344.

THEA 443 Acting for the Camera
3 hrs.
The study and practice of principles of acting as applied to film and television. Prerequisites: THEA 342 and 344.
COLLEGE OF HEALTH AND HUMAN SERVICES

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 or Nursing; Bachelor of Arts or Science in Speech Pathology and Audiology; Bachelor of Social Work; Bachelor of Arts in Travel Instruction; Master of Science in Medicine for Physician Assistant; Master of Arts in Rehabilitation Teaching and in Orientation and Mobility; Master of Arts in Speech Pathology and Audiology; Master of Science in Occupational Therapy; 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 at the graduate level. Alcohol and Drug Abuse at the graduate level, Gerontology at the undergraduate and graduate levels, and a concentration in Health Care Administration at the graduate level.

Mission
The College of Health and Human Services at Western Michigan University has as its mission the education and training of health and human services professionals of the highest quality. The college strives to prepare professionals who will provide leadership in effective professional practice, education, and research through their knowledge, ethical sensitivity, dedication to service, commitment to lifelong learning, and respect for the whole person.

To achieve this primary mission, the college promotes and produces research to enhance the knowledge base and practice of its constituent professional programs and forms collaborative service partnerships within the communities it serves.

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.

BLIND REHABILITATION

William R. Wiener, Chair
David Guth
Robert O. LaDuke
Dale Latulippe
Helen Lee
James Leja
Richard Long
Paul Ponchillia
Susan Ponchillia
Annette Skellenger
Marvin Weessies

The Department of Blind Rehabilitation offers graduate-level, professional education programs in orientation and mobility and in rehabilitation teaching and a baccalaureate-level, professional program in travel instruction. In addition, the department provides direct services to students on campus who have severe visual impairments and, in cooperation with the Michigan Commission for the Blind, provides training to visually impaired individuals within the community. Part of the department's function also is to conduct workshops for professionals working in the field, provide consulting services, and initiate pertinent research. Through federal grants the department is able to offer assistance with tuition and provide stipends to qualified students who enter graduate study in either of the graduate-level specialties and to undergraduate students who enter the baccalaureate-level Travel Instruction program.

Travel Instruction Major

ADMISSION REQUIREMENTS
The program will admit ten qualified students each year based on the following selection criteria:
1. Admission to WMU
2. Appropriate volunteer experience with persons who have disabilities
3. A minimum grade point average of 3.0 (on a 4.0 scale)
4. Completed program application supported by letters of recommendation
5. Personal or telephone interview

PROGRAM REQUIREMENTS
This curriculum, leading to a Bachelor of Arts degree, will be 122 credit hours in length. Built into the Travel Instruction major will be the competencies necessary to prepare direct service instructors to assist persons with disabilities in meeting their travel needs. In addition to the major, students will be required to complete a 20-hour interdisciplinary minor. Admitted students will be expected to satisfy all other University requirements for graduation.

In addition to didactic courses, students will be expected to complete a practicum and a 40-hour per week internship for one semester. Students who choose this major and interdisciplinary minor will satisfy the baccalaureate-level writing requirement by
BLIND REHABILITATION 245

Blind Rehabilitation Courses (BLRH)

BLRH 300 Application of Travel Instruction for Persons with Cognitive Impairments 2 hrs.

This course is intended to provide an understanding of the specific needs relating to travel for individuals who are cognitively impaired. The focus is on how to best serve the population, how to design an appropriate individualized travel instruction program, and how to effectively implement such a program. Prerequisite: Admission to Travel Instruction program.

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 field of 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 blinded rehabilitation and would like to further explore their interest. An overview of visual impairment will be provided with both theoretical and practical components.

BLRH 302 Ambulatory, Communication, and Information Aids for Travel 2 hrs.

This course will provide knowledge of ambulatory, communication, and information devices that assist independent travel for persons with disabilities. It will provide information about and practice with the use of different types of canes, walkers, wheelchairs, stairlifts, communication boards, and information such as GPS (global positioning system), Internet maps, talking maps, talking signs, and geographic information systems.

Prerequisite: Admission to Travel Instruction program.

BLRH 394 Foundations of Travel Instruction 3 hrs.

This course is designed to provide the theoretical underpinnings for the evaluation and provision of travel instruction for persons with disabilities. It examines the development of services, the sensory motor requirements, individual development, concepts relating to travel, analysis of the built environment, the systems of transportation available to persons with disabilities, and the professional information needs of community services. Prerequisite: Admission to Travel Instruction program.

BLRH 395 Methods of Independent Travel for People with Disabilities 3 hrs.

This course is the heart of travel instruction. The knowledge provided prepares the practitioner to assess, teach, and monitor travel instruction for persons with disabilities other than blindness. Content in this area is taught through a combination of didactic lecture and experiential practice in the use of equipment and procedures. Prerequisite: Admission to Travel Instruction program.

BLRH 396 Practicum in Independent Travel 2 hrs.

This course will provide students the opportunity to observe travel instruction at an agency or school and to teach travel instruction to a consumer under the direction of an experienced supervisor. It is the purpose of the practicum to prepare students for more extensive training and responsibilities that will take place in BLRH 412 Internship in Travel Instruction. In addition to weekly clinical hours, students will attend a weekly lecture class. Graded on a Credit/No Credit basis. Prerequisites: Completion of the following BLRH courses with a grade of "C" or better: BLRH 300, 302, 394, 395, 501, and 577.

BLRH 401 Small "N" Research Design 3 hrs.

This course explores standard group research design, single subject, and small number design. The emphasis is placed upon preparing students with a working knowledge of an experimental methodology for demonstrating control in social/behavioral research where more traditional experimental control group paradigms are not feasible or desirable. The approach is based on an experimental methodology for demonstrating control with single or small numbers of subjects which includes design, internal replication, measurement, reliability, and visual or statistical analysis.

BLRH 412 Internship in Independent Travel 4 hrs.

Students will be provided with the opportunity to observe travel instruction at an agency or school and to teach travel instruction to consumers who are cognitively impaired and to consumers who are physically impaired. Prerequisites: Completion, with a grade of "C" or better, of BLRH 396 Practicum in Travel Instruction.

Open to Upperclass 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 focuses on 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 current issues.

BLRH 584 Computer Technology in Rehabilitation 3 hrs.

This course is designed to introduce the student to computer technology as it relates 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 Psychosocial 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 hrs.

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/or major disabilities; and other select disabilities. Emphasis is placed upon cumulative effects of coexisting 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 591 Braile and Other Tactual Communication Systems 2 hrs.

Provides students with a basic knowledge of the braile literary code—reading and writing, and an overview of other communication methods available to the visually impaired.

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 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 the use of Fundamental Electronic Travel Aids and Overview of Major Electronic Devices. Prerequisite: BLRH 595.
COMMUNITY HEALTH SERVICES

Thomas Holmes
Eunice Johnson
James Kendrick
Janet Pisaneschi
C. Dennis Simpson
Molly Vass
Edo Weits

The School of Community Health Services promotes and provides effective high quality educational opportunities and experiences for a variety of health and human service-related professions, disciplines, and specialty areas.

The major goal of the school is to be responsive and supportive to emerging health and human service areas. As such, the school encompasses educational programs targeted to meet the significant unmet health and human service needs of the society, at developing health and human service professions and disciplines, and at emerging health and human service specialty and research areas.

The school endeavors to accomplish this mission and goal by promoting the visibility, demonstration, expansion, and evaluation of professional educational programs for the benefit of citizens, students, and community organizations and agencies. The school recognizes the common developmental problems and opportunities of emerging professions, disciplines, and specialty areas and therefore encourages interdisciplinary cooperation and collaboration in research, demonstration, and educational activities.

Alcohol and Drug Abuse Program

Advisor:
Jan Dekker, Advisor for Graduate Certificate Program
Room B-329, Ellsworth Hall

Jeanine Bartholomew, Advisor for Undergraduate Minor
Room B-121, Henry Hall

Western Michigan University’s Specialty Program in Alcohol and Drug Abuse (SPADA) provides professional education for all those who are interested in the substance abuse field. Multidisciplinary in nature, SPADA provides a balanced orientation to theory and practice, considers a breadth of contemporary issues, and emphasizes a variety of methods for dealing with the problems of substance abuse.

SPADA offers a graduate certificate in alcohol and drug abuse which can be earned as an independent certificate or can be used to supplement graduate education in related fields such as biological sciences, counseling psychology, occupational therapy, psychology, public administration, social work, and sociology, as well as other related disciplines. Specifically, the graduate certificate may be earned in one of three ways: as a post-baccalaureate certificate, in conjunction with a graduate degree, or to complement an earned graduate degree.

Graduates of SPADA are prepared to serve the profession in ways which address the personal, social and economic costs of the use and abuse of psychoactive substances. Further details regarding this graduate program are available in The Graduate College Catalog.

SUBSTANCE ABUSE SERVICES MINOR

The minor in Substance Abuse Services is meant to supplement formal training in other fields such as education, psychology, sociology, social work, occupational therapy, and others. The six courses which comprise the 18-hour minor are ADA 320 Legal and Illegal Drugs; ADA 325 Substance Abuse Diagnosis and Treatment Planning; ADA 326 Substance Abuse Treatment Process; CECP 483 Treating Diverse Clients in Employee Assistance Programs; PSY 492 Individual Group and Family Treatment; and SWRK 420 Ethical Issues in Employee Assistance.

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 other 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 is examined 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 is 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, casefinding, detoxification, inpatient treatment, residential treatment, therapeutic communities, day care, intensive outpatient treatment, outpatient treatment, and aftercare are presented both in theory and practice areas. 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 assessment methods to enhance the treatment of women substance abusers.

ADA 530 Criminal 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 clinic and work settings.

ADA 537 Constructive Confrontation and Referral in Substance Abuse Services
3 hrs.
This course provides students with knowledge of intervention strategies for active substance abusers. Emphasis is placed on strategic constructive confrontation techniques and effective referral processes.

ADA 540 Current Issues in Alcohol and Drug Abuse
1 hr.
This course, taught in seminar, reviews basic and applied research advances in prevention and treatment of substance abuse. Emphasis is on bridging research advances to practice areas. The focus of the course is research published in the previous year.

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 an 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 program requirements and 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 consultation of the advisor. Prerequisite: Consent of instructor and program advisor.

Community Health Services Courses (CHS)

CHS 530 Seminar in Community Health Services
1–4 hrs.
This course focuses on emerging issues relevant to the certification programs in the School of Community Health Services.

CHS 598 Readings in Community Health Services
1–4 hrs.
This course is arranged on an individual basis to provide students an opportunity to pursue independently the study of inter-disciplinary areas of interest. Prerequisite: Consent of instructor.

Employee Assistance Program Courses (EAP)

EAP 220 Introduction to EAPs: EAP Structure and Process in the Work Setting
3 hrs.
This course 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.

COMMUNITY HEALTH SERVICES

EAP 319 EAP Administration
3 hrs.
This course is designed to provide an overview of the operational responsibilities within the various programs models. 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. Prerequisite: SCH 220.

EAP 470 EAP Field Placement I
6 hrs.
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. 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. The field placement is undertaken only after the successful completion of EAP Field Placement I. 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. Prerequisite: EAP 470.

Gerontology Program

Jan Dekker, Advisor for Graduate Certificate Program
Room B-329 Ellsworth Hall
Jeanine Bartholomew, Advisor for coordinate major and undergraduate minor
B-121 Henry Hall

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 the 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 increasing an understanding of the older portion of our population and to provide trained personnel to work with older persons.
### Gerontology Courses (GRN)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GRN 490</td>
<td>Field Education in Gerontology</td>
<td>1-4 hrs</td>
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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 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.

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GRN 521</td>
<td>Women and Aging</td>
<td>3 hrs</td>
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<tr>
<td>GRN 525</td>
<td>Religion and Aging</td>
<td>3 hrs</td>
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<tr>
<td>GRN 530</td>
<td>Special Topics in Gerontology</td>
<td>1-4 hrs</td>
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<tr>
<td>GRN 543</td>
<td>Survey of Geriatric Medicine</td>
<td>3 hrs</td>
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<tr>
<td>GRN 544</td>
<td>Aging and Mental Health</td>
<td>3 hrs</td>
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<td>GRN 545</td>
<td>Alcohol, Drugs and Aging</td>
<td>3 hrs</td>
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<tr>
<td>GRN 547</td>
<td>Alzheimer's Disease and Other Dementias</td>
<td>3 hrs</td>
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<tr>
<td>GRN 598</td>
<td>Readings in Gerontology (with permission)</td>
<td>1-4 hrs</td>
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<tr>
<td>HHS 569</td>
<td>AIDS/HIV: Perspective on an Epidemic</td>
<td>3 hrs</td>
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<tr>
<td>PEGR 572</td>
<td>Recreation for the Aging</td>
<td>2 hrs</td>
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<tr>
<td>PHIL 534</td>
<td>Moral and Philosophical Foundations of Health Care</td>
<td>3 hrs</td>
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<tr>
<td>SWRK 572</td>
<td>Community Agency Resources</td>
<td>2 hrs</td>
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<tr>
<td>SOC 122</td>
<td>Death, Dying and Bereavement</td>
<td>3 hrs</td>
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<tr>
<td>SOC 373</td>
<td>Sociology of Health and Illness</td>
<td>3 hrs</td>
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<tr>
<td>SOC 552</td>
<td>Sociology of Aging</td>
<td>3 hrs</td>
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<tr>
<td>SPPA 552</td>
<td>Communication Problems of the Aged</td>
<td>3 hrs</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 one 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.
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 will learn how policies and practices can be set up 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 mental 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 theories to be covered. 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 and 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/HIV: Perspective on an Epidemic
3 hrs.
This course is intended to provide a historical perspective of 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 596 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 100 Choices in Living
3 hrs.
The course will focus on the relationship between inner states, social responsibilities and optimal human functioning. Students will be educated in current theories and techniques of 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 360 Issues, Practices, and Ethics in Holistic Health Care
3 hrs.
This course is a general survey of holistic issues, practices, and ethics. Students will complete an assessment of the values and attitudes which underpin their current health practice; examine values, attitudes, issues, and ethics about the current health and health care models. They will explore and critically evaluate the variety of holistic health care services and their applications. Students will be expected to incorporate new information and skills into their personal and professional lives. The format for the course will be a combination of lecture, experiential activities, and audio/video presentation. Attendance and active participation are essential to meaningful learning in this course.

HOL 370 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 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.

**NURSING**

Bernardine M. Lacey, Director
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The Western Michigan University Bronson 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, sciences, and the discipline of nursing. The program emphasizes the development of skills, knowledge, and competencies essential for the scope of clinical judgment that distinguishes the practice of a professional nurse. Concepts of patterning, holism, caring, service to vulnerable groups, and partnership are emphasized.

**ACCREDITATION:** The Western Michigan University Bronson School of Nursing is accredited by the National League for Nursing Accrediting Commission, 61 Broadway, New York, New York 10006, phone: 1-800-669-9656. Graduates of the program will be able to sit for the NCLEX-RN. NLNAC is also a resource for information regarding tuition, fees, and the length of the program.

**ADMISSION TO PRENURSING CURRICULUM**

The WMU applications of high school students who indicate nursing as their field of interest and who satisfy the minimum admission considerations for the Prenursing Curriculum will be forwarded to the Bronson School of Nursing. A final selection will be made by the Bronson School of Nursing. These students will be admitted to the Prenursing Curriculum and will begin the program of studies in the fall semester of the freshman year. Current WMU students, transfer students, and second degree students may be admitted to the Prenursing curriculum on a room available basis. Interested students should make an appointment with the Bronson School of Nursing student advisor for application requirements.

**The Undergraduate Professional Program**

This program, with two curriculum tracks, leads to the completion of a Bachelor of Science degree with a major in nursing.

A **Prelicensure Track** is offered for individuals who do not hold a Registered Nurse license. Sixty-three credits of the 127 credit-hour curriculum will consist of liberal arts and science courses, 52 credits of nursing courses, and 12 credits of courses in an area of concentration which enables the student to pursue a personal area of interest that augments the professional studies.

A second track, the **RN Progression Track**, has been specifically designed for Registered Nurses. In this track, the curriculum will consist of 35–42 credits in liberal arts and science courses, 23 credits in nursing, and 12 credits in an area of concentration. The RN Progression Track includes 50–57 articulated credits for prior learning.

**PRELICENSURE TRACK**

**Admission Requirements**

Prelicensure students must complete the following 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOS 191</td>
<td>Introduction to Human Biology and Anatomy</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>CHEM 151</td>
<td>152 Chemistry for Health Professionals I</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>CHEM 153</td>
<td>154 Chemistry for Health Professionals II</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>NUR 102</td>
<td>Introduction to the Profession of Nursing</td>
<td>2 hrs.</td>
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<tr>
<td>PSY 100</td>
<td>General Psychology</td>
<td>3 hrs.</td>
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<tr>
<td>SOC 200</td>
<td>Principles of Sociology</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Fine Arts (Area I General Education)</td>
<td>3 hrs.</td>
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<tr>
<td>College-level writing/Proficiency</td>
<td>1/3/4 hrs.</td>
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<tr>
<td>U.S. Cultures and Issues (Area III General Education)</td>
<td>3 hrs.</td>
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<tr>
<td>Mathematics (Proficiency 3)</td>
<td>3 hrs.</td>
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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.

**Curriculum Requirements—127 credit hours**

The sequencing of the Professional Nursing curriculum is critical. Students must complete designated course 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 pass satisfactorily 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, return 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 Bronson School of Nursing Student Affairs Committee can do so through the University’s General Academic Procedure.

**Supporting Courses—63 hours**

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<tbody>
<tr>
<td>BIOS 191</td>
<td>Introduction to Human Biology and Anatomy</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>BIOS 232</td>
<td>Microbiology and Infectious Diseases</td>
<td>4 hrs.</td>
</tr>
</tbody>
</table>
The nursing curriculum will satisfy the requirements that students might pursue include women's studies, philosophy, biological sciences, and mathematics. Approved computer usage course may not be allowed to count this course as part of the curriculum or selected to meet general education area requirements. Courses required in the nursing curriculum must be counted toward an area of concentration. Nine of the credit hours must be selected from the 200-level. One-hundred-level courses may 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. Examples of academic minors that students might pursue include women's studies, philosophy, biological sciences, and mathematics.

Concentration or Academic Minor—minimum of 12 hours

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 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 their own 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.)

The second 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. Examples of academic minors that students might pursue include women's studies, philosophy, biological sciences, and sociology.

Whether students elect to complete an area of concentration or a minor, it must be done with the approval of the nursing advisor.

Nursing—52 hours

NUR 101 Introduction to the Profession of Nursing............. 2
NUR 202 Nurses' Role in Primary 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

Baccalaureate Level Writing Requirement

Students enrolled in the Prenursing Track of the nursing curriculum will satisfy the Baccalaureate Level Writing Requirement by successfully completing NUR 307: Nurses' Role in Facilitating Self-Care II.

RN PROGRESSION TRACK

Admission Requirements

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. Furthermore, 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.
Humanities (Area II General Education) . . . . 3 hrs.
Approved computer usage course . . . . 3 hrs.
SOC 200 Principles of Sociology . . . . 3 hrs.
Mathematics (Proficiency 3) . . . . 3 hrs.
College-level writing (Proficiency 1) . . . . 3/4 hrs.

While enrolled in the last six credit hours of the eighteen hours of prerequisite course work, students must schedule an appointment with the nursing advisor. At this time, academic progress in the program of study will be reviewed and the decision will be made to grant or deny admission to the professional nursing curriculum. Admission to this Professional Nursing curriculum is determined by the successful completion of all prerequisite course work. Availability of space in nursing courses may affect the student's rate of completion of the nursing sequence as the courses will be filled on a first come, first served basis.

During the meeting with the academic advisor, the student will be asked to present the following:

1. A current Michigan Registered Nurse license
2. Proof of employment as a Registered Nurse for a minimum of six months
3. current cardiopulmonary resuscitation certification
4. Immunization records

Academic Credit Transferred from Associate Degree or Diploma Program

Registered Nurse students who are admitted to the RN Progression Track of the nursing curriculum will satisfy the requirements through the completion of NUR 308 Nurses' Role in Facilitating Self-Care (RN).

Baccalaureate Level Writing Requirement

Students enrolled in the Registered Nurse Progression Track of the nursing curriculum will satisfy this requirement through the completion of NUR 308 Nurses' Role in 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 Preunursing curriculum.

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 the nursing process, health assessment, and patient care. Nursing practice will involve groups and individuals across the life span who are experiencing common health problems. Prerequisite: Admission to the Preunursing curriculum.

NUR 308 Nurses' Role in Facilitating Self-Care (RN)............. 8 hrs.

A continuation of NUR 202, concepts of health and illness will be reviewed. Students will learn to implement the nursing process, health assessment, and clinical experience. Prerequisite: Completion of NUR 202 with a grade of "C" or better.
The major foci of this course, in addition to primary health care, will include: a review of nursing process, healthy communication, and self-development. The new concepts of partnership, caring, holism, and health and illness will be introduced. The laboratory component will include health assessment and interviewing techniques for health and wellness screening. 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, multiculturalism, and family and 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 the 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 and Urban Development (HUD) housing units, group homes and half-way houses, and senior centers. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum (i.e., prelicensure track). Prerequisites: Completion of NUR 306 with a grade of "C" or better; PHIL 334 Biomedical Ethics.

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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student’s curriculum (i.e., RN progression track). Prerequisites: RN licensure and completion of NUR 204 with a grade of "C" or better; PHIL 334 Biomedical Ethics.

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. Clinical experiences will be provided in planned parenthood, government and private community-based health care agencies, the University health center, and mental health hospitals. 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. Prerequisites: Completion of NUR 410 with a grade of "C" or better; HHS 461 Informatics, Corequisite: MATH 366 Introduction to Statistics.

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 and leadership 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. Prerequisites: RN licensure and completion of NUR 306 with a grade of "C" or better; HHS 461 Informatics. Corequisite: MATH 366 Introduction to Statistics.

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.

The Undergraduate Professional Program

Bachelor of Science

ACREDITATION
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 20, Bethesda, MD 20824-1220. AOTA’s phone number is (301) 652-AOTA. Graduates of the program will be able to sit for the national certification exam 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 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. 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 simple to complex pattern. This design maximizes the development of clinical reasoning skills. Students may be admitted to the University in the pre-occupational therapy curriculum, although this admission does not guarantee admission to the professional curriculum. 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 126 semester hours with 55 semester hours of professional course work in the occupational therapy curriculum.

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
designated for students considering occupational therapy as a professional choice.

Minimum criteria for admission consideration to the professional program includes:
1. Admission to Western Michigan University and completion of University general education requirements.
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 hrs.
   • Basic Course in Biological Science (Human Related) . . . . 3 hrs.
   • Normal Human Growth and Development Covering the Life Span (OT 225) . . . . 3 hrs.
   • English Composition I . . . . 3 hrs.
   • Human Anatomy with Lab . . . . 3-4 hrs.
   • Human Physiology with Lab . . . . 3-4 hrs.
   • Abnormal Psychology . . . . 3 hrs.
   • U.S. Cultures or Other Cultures (Gen. Ed. III or IV) . . . . 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 CHEM 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 BIS 102 at WMU . . . . 3 hrs.
   • Orientation to Occupational Therapy (equivalent to OT 202 at WMU) . . . . 2 hrs.
6. If a pre-occupational therapy student is not admitted into the professional curriculum, the required prerequisites will apply toward the University general education requirements, intellectual skills, and/or elective credit towards graduation.
7. 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.
8. Documentation of a minimum of 3 hours of contact with a registered occupational therapist. 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. Each experience must be at least 3 hours.
9. 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).
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 processes to express their views on matters of program curriculum.

CUMULUS REQUIREMENTS FOR THE BACHELOR OF SCIENCE

Minimum hours required for this curriculum .................................................. 128

1. General Education .......................................................... 37
2. General or Introductory Psychology .................................................. 3 hrs.
3. U.S. Cultures or Other Cultures (Gen. Ed. III or IV) .................................. 3 hrs.
4. Behavioral Sciences (sociology, anthropology, psychology) .................................. 3 hrs.
5. Basic course in Biological Science (Human related) .................................. 3 hrs.
7. English Composition .......................................................... 3 hrs.
8. Abnormal Psychology .......................................................... 3 hrs.
9. Human Anatomy with lab .................................................. 3-4 hrs.
10. Human Physiology with lab .................................................. 3-4 hrs.
11. General Chemistry with a lab equivalent to CHEM 103 at WMU . . . . 3-4 hrs.
12. General/elementary Physics with a lab equivalent to PHYS 109 at WMU . . . . 3-5 hrs.
14. Introductory Computer Science equivalent to CS 105 or BIS 102 at WMU . . . . 3 hrs.
15. Orientation to Occupational Therapy (equivalent to OT 202 at WMU) . . . . 2 hrs.
16. Satisfactory completion of all Intellectual Skills Requirements

Professional Curriculum .......................................................... 55

OT 370 OT Process .......................................................... 4 hrs.
OT 372 Applied Neurology .......................................................... 4 hrs.
OT 373 Applied Kinesiology .......................................................... 4 hrs.
OT 374 Disabling Conditions .......................................................... 4 hrs.
OT 380 Introduction to Assessment: OT Process, Psychometrics, Theory .......................................................... 2 hrs.
OT 381 Occupational Therapy Practice I (Birth to 18 years) .................................. 6 hrs.
OT 382 Occupational Therapy Practice II (19 years to Geriatric) .................................. 6 hrs.
OT 471 Research in Occupational Therapy .......................................................... 2 hrs.
OT 472 Occupational Analysis and Adaptation .......................................................... 3 hrs.
OT 473 Assistive Technology in Occupational Therapy .......................................................... 2 hrs.
OT 475 Occupational Therapy Practicum I .......................................................... 3 hrs.
OT 480 Occupational Therapy Management .......................................................... 3 hrs.
OT 481 Occupational Therapy in Work Settings .......................................................... 2 hrs.
OT 482 Occupational Therapy Practicum II .......................................................... 3 hrs.
OT 483 Capstone Experience in Occupational Therapy .......................................................... 1 hr.
OT 490 OT Fieldwork I .......................................................... 3 hrs.
OT 491 OT Fieldwork II .......................................................... 3 hrs.

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.

Professional Program Course Tracks

The Occupational Therapy Department has in operation a course tracking system designed to assure each student of a consistent and appropriate professional OT courses. Any variation from this plan must be approved by the department.

First Semester
OT 370, OT 372, OT 373, OT 374
Second Semester
OT 380, OT 381, OT 382
Third Semester
OT 471, OT 472, OT 473, OT 475
Fourth Semester
OT 480, OT 481, OT 482, OT 483

Remediation and Continuation Policy

1. Students will complete all required departmental courses and all required prerequisites with a grade of "C" or better. Subsequent courses cannot be taken until prerequisites are completed successfully.
2. Students can repeat only one required prerequisite or 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 placed on departmental probation following the grade lower than "C".
4. Students who do not successfully complete departmental probation will not be permitted to continue in the program.
5. A second grade below a "C" will result in termination from the program. The student may appeal this decision following the procedures outlined in the Student Rights and Responsibilities section of this catalog.
6. 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.

Baccalaureate Writing Requirement

Students who have chosen the Occupational Therapy major will satisfy the Baccalaureate Writing Requirement by successfully completing OT 483 Capstone Experience in Occupational Therapy, 1 credit hour.

Field Work

Students are required to complete successfully two, three-month fieldwork experiences. One is scheduled in a medical model (usually a hospital setting) and the other in a community agency (e.g., a day treatment program or school). To attain competency for practice and for eligibility for the NBCOT examination, students must successfully complete both experiences in settings that focus on the same area of disability.

To be eligible for fieldwork, students must have a cumulative grade point average of 2.00 or above, with no grades less than "C" in required and prerequisite courses.

Fieldwork is graded on a scale similar to academic course work. The grades are evaluated by a clinical supervisor who assesses areas of performance, judgment, and attitude. Each of the three areas must be passed at minimum competency for entry level practice. To ensure continuity of application of academic concepts, all fieldwork must be completed within 24 months following completion of academic preparation. An optional third fieldwork experience, of variable duration, may be scheduled pending
Therapy program; corequisites: OT 370, 373, 374.

OT 373 Applied Kinesiology 4 hrs. This course examines the physical and physiological aspects of human movement and the interaction of physical and environmental influences on sensorimotor functioning. Students learn objective methods of measuring joint range of motion and muscle strength. This course applies principles of physics and kinesiology to basic and complex activities of daily living. Principles of orthotic and prosthetic designs are introduced. Prerequisite: Admission to the professional Occupational Therapy program; corequisites: OT 370, 372, 374.

OT 374 Disabling Conditions 4 hours This course will introduce issues in health and illness, as well as pathologic processes and their impact on the total individual. Selected conditions related to the following pathologic processes will be examined: developmental, traumatic, degenerative, infectious, neoplastic, immunologic, metabolic, psychiatric, and circulatory/respiratory. Prerequisite: Admission to the professional Occupational Therapy program; corequisites: OT 370, 372, 373.

OT 380 Introduction to Assessment: OT Process, Psychometrics, Theory 2 hrs. This course provides investigation of occupational therapy theory and its relationship to development of assessment tools. The student will discover the process by which assessments are developed, the evolution of assessments over time, and necessary revisions in standardization. The student will develop the ability to analyze an assessment using statistical information such as validity and reliability. Computer-based assessments, standardized tests, functional and informal assessments will be critiqued and applied to professional practice. Sensorimotor, cognitive, psychosocial, and environmental assessments will be applied to a variety of client groups. Prerequisites: OT 370, 372, 373, and 374; corequisites: OT 381 and 382.

OT 381 Occupational Therapy Practice I (Birth to 18 Years) 6 hrs. Using a problem-based learning approach, students will define and apply the occupational therapy process to health maintenance and rehabilitation. Students will consider the interrelationship between occupational therapy performance components, occupational performance areas, and performance contexts. Emphasis on birth to age 18. Graded on a Credit/No Credit basis. Prerequisites: OT 370, 372, 373, and 374; corequisites: OT 380 and 382.

OT 382 Occupational Therapy Practice II (19 Years to Geriatrics) 6 hrs. Using a problem-based learning approach, students will define and apply the occupational therapy process to health maintenance and rehabilitation. Students will consider the interrelationship between occupational therapy performance components, occupational performance areas, and performance contexts. Emphasis on mid-life and older adults. Graded on a Credit/No Credit basis. Prerequisites: OT 370, 372, 373, and 374; corequisites: OT 380 and 381.

OT 385 Independent Study in Occupational Therapy 2–4 hrs. Designed to allow outstanding students to work independently under faculty supervision. Consent of department chair.

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 471 Research in Occupational Therapy 2 hrs. This course examines methodologies of research useful to occupational therapy. Critically analyzes research literature of the profession, and makes research based clinical decisions. Prerequisites: OT 380, 381, and 382; corequisites: OT 475, 472, and 473.

OT 472 Occupational Analysis and Adaptation 3 hrs. This course provides students with experience in activity analysis and adaptation. Breaking down activities into subtasks for individuals with disabilities and then creating or providing adaptations or accommodations is a primary role. In addition, this course introduces students to basic technology related to adaptation for mobility, communication, splinting, vocation, and leisure. Prerequisites: OT 380, 381, and 382; corequisites: OT 475, 471, and 473.

OT 473 Assistive Technology in Occupational Therapy 2 hrs. This course offers an examination of the role of the occupational therapist in the provision of technology as aids to activities of daily living. The student learns to design, evaluate, and select assistive technology that is effective and safe, to assist in self-care, work, and play/leisure performance. Prerequisites: OT 380, 381, and 382; corequisites: OT 475, 471, and 472.

OT 475 Occupational Therapy Practicum I 3 hrs. This course is designed for students to administer and interpret occupational therapy evaluations of clients in community based services. Treatment recommendations will be made considering the interrelationships between occupational therapy performance components, occupational performance areas, and performance contexts. Prerequisites: OT 380, 381, and 382; corequisites: OT 471, 472, and 473.

OT 480 Occupational Therapy Management 3 hrs. This course introduces the student to the health care delivery system from an administrative and management perspective. The student will learn about different delivery models and how these relate to the management process. Prerequisites: OT 475, 471, 472, 473, and senior status; corequisites: OT 481, 482, and 483.

OT 481 Occupational Therapy in Work Settings 2 hrs. This course introduces students to occupational therapy evaluation and treatment in the work setting. Students will understand, through lecture and lab experiences, how to analyze job tasks (job site analysis), how to evaluate individual capabilities for various jobs (functional capacity evaluations), and write job descriptions using ADA (Americans with Disabilities Act) standards (essential and nonessential job functions). Prerequisites: OT 475, 471, 472, and 473; corequisites: OT 480, 482, and 483.

OT 482 Occupational Therapy Practicum II 3 hrs. This course is designed to provide in depth clinical experience in order to develop skills in the utilization of assessment, the development of treatment plans, the implementation of treatment, and the evaluation of the patient's
progress related to the treatment plan. This course requires extensive writing. 
Prerequisites: OT 475, 471, 472, and 473; corequisites: OT 480, 481, and 483.

OT 483 Capstone Experience in Occupational Therapy
1 hr.
This course will result in demonstration of integration of knowledge and technical competencies required for occupational therapy clinical practice. Students will prepare a portfolio of professional skills and knowledge and present a project incorporating implementation of the occupational therapy process. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. Prerequisites: OT 475, 471, 472, and 473; corequisites: OT 480, 481, and 482.

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 and prerequisite courses.

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: Completion of all academic course work required for graduation.

OT 492 Fieldwork Level II
2-3 hrs.
An optional three-month affiliation in hospitals or agencies providing the student experience in designated areas 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 475 or concurrent; or OTR, 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

James Van Rhee, Chair
Stephen Bartholomew
Sherri Busboom
William H. Fenn
Barbara Grinwis

The Department admitted its last undergraduate class of students in 1997. Beginning in 1998, the curriculum became a master's degree program, offering the Master of Science in Medicine. Please see the 1998-2000 Graduate Catalog for more information.

SOCIAL WORK

Tracey Mabrey, Interim Director
Donald Cooney
James Henry
Peter Judd
Frederick MacDonald
Gary Mathews
Karen Neuman
John Nielsen
Edward Pawlak
Linda Reeser
Kenneth E. Reid
Susan Weigert
Robert Wertkin
Celia Williamson
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. Further information about the graduate program, designed to educate students for interpersonal practice and policy, planning, and administration positions in the field of social welfare, may be found in the Graduate Catalog.

The Undergraduate Professional Program

Bachelor of Social Work

Minimum Hours Required for Graduation: 122

The undergraduate professional program is designed to prepare 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. Students enrolled in the undergraduate social work curriculum are required to complete a major consisting of 32 hours and a 22-24 hour interdisciplinary minor. A social work minor consisting of a minimum of 15 hours is offered for students in other curricula.

In addition, the School of Social Work participates in a University gerontology minor. Social work students should consult their curriculum advisor for program planning for the gerontology minor.

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 22-24 hours is required to fulfill the program requirements. In addition, a student may choose a second regular curriculum minor from another department. Further questions concerning the social work major or minor may be directed to the School of Social Work.

ADMISSION REQUIREMENTS

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.

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. It is recommended that SWRK 210 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 possible because there are limited seats available for the major each year. This admission process is competitive.

**CURRICULUM REQUIREMENTS**

Baccalaureate Writing Requirement

Students who have chosen the Social Work major will satisfy the Baccalaureate Writing Requirement by successfully completing ENGL 305 Practiced Writing.

**General Education Requirements...37 hrs.**

**Requirements for the Social Work Major...32 hrs.**

SWRK 210 Social Work Services and Professional Roles. 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 professional, acquaints students with contemporary social work roles and fields of practice, and examines the profession’s responsibilities in the delivery of social work services to minority and majority groups in the public and private sectors. Prerequisite: Sophomore status or consent of instructor.

SWRK 300 Social Welfare as a Social Institution

This course analyzes social welfare as a phenomenon that has contributed 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.

SWRK 350 Human Behavior and the Social Environment

Human growth and behavior are studied across the life span and as social/cultural phenomena that are conditioned by economic, historical, political, geographic, and racial/ethnic diversity. Thus, human development and behavior are inseparable from the social context which affect and are affected by them and which condition their meanings. This course also examines the complex interplay between social, cultural, biological, and psychological systems and pays close attention to diversity in the human experience and to the factors and settings that create diversity. Prerequisites: 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 organizations 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 three practice courses. Students are prepared for the beginning phase of the helping process and develop interview, listening, relationship building, and assessment skills. The problem solving model is presented with an emphasis on systems theory and the ecological perspective. Students learn about generalist social work practice and problems in working with individuals, families, and groups, including how to obtain, organize, and assess information. Students proceed to determine priorities for contracting and goal setting in preparation for the intervention phase. Students study the practice implications of gender, race, and other aspects of diversity. Prerequisites: SWRK 300, SWRK 390.

SWRK 401 Social Work Practice: Policy Analysis and Organizational Context 3 hrs.

This course analyzes social welfare as a phenomenon that has contributed 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.

SWRK 402 Social Work Practice: Intervention and Evaluation 3 hrs.

This course analyzes social welfare as a phenomenon that has contributed 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.

SWRK 403 Social Work Practice: Contextual Practice 3 hrs.

This course analyzes social welfare as a phenomenon that has contributed 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 analyzes social welfare as a phenomenon that has contributed 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.

SWRK 405 Social Work Practice: Professional Roles 3 hrs.

This course analyzes social welfare as a phenomenon that has contributed 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.

**Electives...24-26 hrs.**

Students are encouraged to elect additional courses in any area of their specific interest. Particularly recommended in preparation for social work practice are: anthropology, communications, economics, history, philosophy, political science, psychology, sociology, or women's studies. The following social work courses are also available as electives for the students.

SWRK 406 Problem Solving in Gerontology 3 hrs.

SWRK 512 Social Policy and Service Delivery in Selected Problem Areas 3 hrs.

SWRK 513 Social Work with Communities 3 hrs.

SWRK 514 Social Workers and Social Movements 3 hrs.

SWRK 515 Community Organization in Urban Areas 3 hrs.

SWRK 516 Social Service in the Schools 3 hrs.

SWRK 517 Teaching Apprenticeship in Selected Social Work Curriculum Areas 1, 1-4 hrs.

SWRK 518 Readings in Social Work 1, 1-4 hrs.

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. A student must receive a "C" or higher in each required social work course to remain in the major. A student may repeat one required social work course to raise his/her grade up to the minimum grade of "C". "D" meets minimum requirements for credit.

2. The student must maintain an overall average of 2.0 in the interdisciplinary minor. Transfer students note that courses transferring into the major are accepted with no grade (so an "A" at a two-year college can’t be used to balance a lower grade in a course at WMU).

The school may refuse to permit a student to continue in the curriculum if at any time it is deemed 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.

**REQUIREMENTS**

**Social Work Minor...15 credit hours**

SWRK 210 Social Work Services and Professional Roles 3 hrs.

SWRK 300 Social Welfare as a Social Institution 3 hrs.

Three of the following social work courses: 350, 351, 433, 464, any 500 level social work course.

**Social Work Courses (SWRK)**

A list of approved General Education courses can be found in "Graduation Requirements and Academic Advising" earlier in this catalog.
acceptance in the BSW program and consent of the undergraduate advisor.

SWRK 401 Social Work Practice: Intervention and Evaluation
3 hrs.
This is the second of three practice courses. Students learn practice theories and intervention strategies for use with individuals, families, and groups, and focus on problems related to violence, substance abuse, and crisis. Emphasizing the generalist intervention model, students learn social work roles, including advocate, facilitator, case manager, and broker. Methods of practice evaluation are presented, including single-subject design. Students study the practice implications of gender, race, and other aspects of diversity. Prerequisites: SWRK 400 and concurrent enrollment in SWRK 410.

SWRK 402 Social Work Practice: Policy Analysis and Organizational Context
3 hrs.
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 pays 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 service delivery. Prerequisites: Senior status, SWRK 401, concurrent enrollment in SWRK 411.

SWRK 410 Field Experience and Seminar I
4 hrs.
This is the first of two field practice courses that entails two hundred (200) hours in a human service agency. Students apply knowledge and develop skills in conducting interviews, problem identification, data collection, problem assessment, and goal formulation with client systems in the context of social work values. Students integrate self-awareness and appreciation of diversity into professional practice. Students develop a working knowledge of the agency’s functions, structure, processes, and its service provider role within the community. Graded on a Credit/No Credit basis. Prerequisites: Senior status, Social Work Major status, consent of Director of Field Education, completion of SWRK 400, and concurrent enrollment in SWRK 401. Completed application is due at least 15 weeks prior to the semester of field education.

SWRK 411 Field Experience and Seminar II
4 hrs.
This is the second of two practicum courses that entails two hundred (200) hours in a human service agency. Students further integrate and apply social work knowledge, skills, and values in their field practicums, including the problem-solving process, interviewing, use of self, and understanding of diversity. Graded on a Credit/No Credit basis. Prerequisites: Completion of SWRK 401 and 410, consent of the Director of Field Education, and concurrent enrollment in SWRK 402.

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 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 560 Social Work with Communities
3 hrs.
This course involves an examination of major theoretical and conceptual tenets of community practice from a social work perspective. It also involves a practical integration of theoretical and conceptual knowledge of community practice through assignments which will focus on communities that are available through field placements or other arrangements. Students will examine the contributions communities make to the functioning of individuals, families, groups, and organizations, as well as how individuals, families, groups, and organizations contribute to the functioning of communities. Students will integrate into an understanding of community practice social work’s historical and contemporary emphasis on “empowerment” and the person-environment interface (i.e., interaction among biological, cultural, social, psychological, political, and economic aspects of human development and functioning). Prerequisite: Undergraduate senior status.

SWRK 561 Social Workers and Social Movements
3 hrs.
This course aims at helping social workers understand how social movements operate and how they can effectively and uniquely contribute to the just goals of social movements. The course addresses the rich heritage of social movements’ accomplishments in American history; the theories exploring how social movements begin, endure, and effectively influence society; and how social movements have impacted critical issues in our nation’s history. Students will learn elements of strategy to mobilize successful nonviolent social movements. The unique and specific contributions social workers make to social movements are explored.

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 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 and the necessary adaptations in the changes taking place in the educational scene are examined and evaluated. Problem solving approaches are given special attention within the structure and organization of the schools and their relationships with the surrounding community. The specific contributions of a school social worker as a helping person to students, their families, and school staff by various methods are explored. Prerequisite: Consent of instructor.

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, or 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.
SPEECH PATHOLOGY AND AUDIOLOGY

John M. Hanley, Chair
Harold L. Bate
Jan Bedrosian
Susan K. Boersma
Michael J. Clark
Yvette Hyter
Gary D. Lawson
Candis Warner
Adjunct Faculty
Nickola W. Nelson
Cindy Beachler
John Tecca
Karen S. Seelig
William L. Locke
Adelia VanMeter
Communication is the most complex aspect of human behavior. Impairments in the process of communication—speech, language, and hearing—leave myriad 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, habilitative, 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.

Speech Pathology and Audiology Curriculum

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 department 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.

Further information regarding requirements and procedures for admission to the departmental major may be obtained by contacting the department directly.

Transfer Students
It is recommended that transfer students enroll at Western at the beginning of the first semester of the sophomore year. Those who enroll at a later stage may find that an additional period of study will be required to complete the undergraduate curriculum.

Speech Pathology and Audiology Major
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 course work 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 speech-language hearing 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.

Teacher Certification Track
Students who seek careers as speech-language pathologists in the public schools in Michigan (or in other states which require teacher certification for such employment) must (in addition to earning a master’s degree in speech-language pathology) arrange to complete a professional education minor which is required for the Provisional Teaching Certificate. Two options for earning teaching certification are offered. The majority of students are encouraged to complete a minor in elementary education which leads to recommendation for the Elementary Provisional Teaching Certificate. Other students or post baccalaureate practicing Speech-Language Pathologists may earn Secondary Provisional Teaching Certification by completing a 20 hour minor in an approved teaching area as well as required professional education coursework. Specific requirements and approval for these minors are obtained from the Education Advising and Admissions Office, 2504 Sangren Hall. Students must obtain an approved minor signed by an approved education advisor. Practicing Speech-Language Pathologists are to seek advisement through the Teaching Certification Office, 2104 Sangren Hall.

Completion of the foregoing requirements, together with completion of the curricular requirements described below, and completion of the master’s degree program in speech pathology and audiology (with major emphasis in speech pathology, and including a graduate level six credit hour school internship in speech-language pathology) will result in recommendation of the student for the appropriate level of Provisional Teaching Certification. Simultaneously, the master’s degree recipient in this track is approved for employment in Michigan as a “Teacher of the Speech and Language Impaired” and typically also will have completed the academic and practicum experiences required for employment in other clinical settings as well. Although Michigan does not require Teacher Certification for audiologists employed in the public schools, other states may require such certification. A graduate emphasis in audiology does not satisfy Teacher Certification requirements.

Non-Teacher Certification Track
Students who seek careers in settings other than the schools (for example, in hospitals, community agencies, and rehabilitation centers) or who are preparing for doctoral study are not required to complete the requirements for teaching certification outlined above. Students in this case are required to complete an academic minor in an area such as social work, computer science, physics, psychology, geontology or another related discipline. Assistance in selecting an appropriate minor is available through the departmental undergraduate advisor.

Completion of the curricular requirements described below, together with the completion of a master’s degree program in speech pathology and audiology, typically satisfies all academic and practicum requirements of the American Speech-Language Hearing Association for a Certificate of Clinical Competence in the emphasis area (speech and language pathology or audiology) pursued in graduate school.

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 course work. 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 401, both of which are 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 “Graduation Requirements and Academic Advising” 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, linguistic, physiological, and psychosocial bases of human communication and the ways in which it may be disordered. The impact of scientific investigation, technology, education, economics, health and rehabilitation on communication disorders will be addressed. Individual and societal variables related to communication and its disorders, the challenges of medical and technological advancements, and the quantitative tools used in assessment and rehabilitation will be stressed.

Speech Pathology and Audiology Courses

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, habilitative, 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.

Speech Pathology and Audiology Curriculum

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 department 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.

Further information regarding requirements and procedures for admission to the departmental major may be obtained by contacting the department directly.

Transfer Students
It is recommended that transfer students enroll at Western at the beginning of the first
SPEECH PATHOLOGY AND AUDIOLOGY

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. Prerequisites: Consent of instructor or SPPA 203; SPPA 204; PHYS 107 and 108; MATH 114 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. Prerequisites: SPPA 203; SPPA 204; PHYS 107 and 108; MATH 114 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 353 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. This course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. 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 are: instrumentation in audiology, manual communication, electrophysiologic audiology, computer applications to speech pathology and audiology, augmentative communication, and contemporary professional issues.
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 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; conferences, 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 adult, part-time, and evening students are served by the Division's central offices located in Ellsworth Hall. The Office of Administrative Services provides admission and registration assistance, as well as academic advising to General University Studies students.

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.

Self-Instructional courses are available when students cannot participate in on-campus or off-campus courses. The Department of Distance Education offers over 100 undergraduate credit courses using a variety of media. Courses are developed by University 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, college, or department in which the student is studying. Information may be obtained by calling (616) 387-4195.

Conferences and Seminars
The Office of Conferences and Seminars 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 offices are located in Ellsworth Hall on Western's main campus in Kalamazoo. Regional centers and regional sites are located as follows:

- Battle Creek (Kendall) Regional Center
  50 W. Jackson
  Battle Creek, MI 49017
  (616) 965-5380
- Grand Rapids Regional Center
  2333 East Belkline, S.E.
  Grand Rapids, MI 49546-5936
  (616) 771-0470
- Holland Regional Site at Hope College
  B-05 100 8th St.
  Holland, MI 49422-9000
  (616) 392-1143
- Lansing Regional Center
  300 N. Washington Square, Suite 200
  Lansing, MI 48933-1204
  (517) 372-8114

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, correspondence, and distance learning methods. The department is continually developing new programming to deliver courses to students at a distance using the latest technologies.

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 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 course work 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 curriculum 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 providing they meet program requirements. Those applying for admission into the curriculum are expected to complete a written statement outlining educational goals as well as the proposed course of study.

Once the student has outlined a proposed course of study, the student is required to review the course selections with a faculty member of advisor in the department(s) offering a majority of the proposed courses. The department members will advise the student regarding the course selections. Once a department has provided guidance, the STC advisor oversees the ongoing student progress.
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 program 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 status (56 hours), who are in good academic 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 term starts 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.

To apply for admission, the student must:
1. Complete an admission application for a degree program and submit with the application fee ($25.00) to the WMU Office of Admissions and Orientation.
2. Request official transcripts to be sent to the WMU Office of Admissions and Orientation from all previously attended post-secondary institutions.
3. Submit evidence of meeting any additional admission requirement for a GUS program described below.

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 60 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 the WMU residency requirement.
2. Completion of a planned area of concentration with 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. Complete the General Education requirement for a minimum of 37 semester hours of credit. This work can include credits earned in the planned area of concentration.
4. Completion of the University's Computer Usage, Intellectual Skills, and Baccalaureate-level Writing requirements.

Program Areas

American Studies

Gerry Schma, 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 be well received. 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:
   - Anthropology, Philosophy, Religion
   - Art, Music, Theatre
   - English
   - History
   - Economics, Social Work, Sociology
   - Political Science

2. An additional 9 hours in one of the four fields chosen above, thus bringing the total hours in that field to 15 hours.
3. An additional 3 hours in an advisor-approved course.
4. Up to 8 hours of individual study in American culture. Students may fulfill this requirement in a variety of ways: community workshops, travel projects, craft work, community service, political campaigns, and/or individual study involving independent research. Students may arrange credit for this requirement by registering for 2 to 8 hours in independent study in any of the participating departments. Written advisor approval is necessary before students may be allowed to register for the independent study.

Applied Liberal Studies

Gerry Schma, 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 training, lack the formal education qualifications necessary for such advancement.

The requirements for this 45-hour concentration are as follows:

1. Complete 60 hours of academic work from an accredited four-year, degree-granting institution. At least 30 hours of credit must be taken from Western Michigan University.
2. Complete 45 semester hours of credit in applied liberal studies. These must include a minimum of three courses each from any three of the topic areas that follow. The remaining hours may be taken from any of these areas:
   - A. Community concerns
   - B. Communication skills
   - C. Environmental concerns
   - D. Human relations
   - E. International concerns
   - F. Technical skills
3. Complete the University's General Education Requirements (37 hours).
4. Complete the University's Computer Usage, Intellectual Skills, and Baccalaureate Writing requirements.

Applied Professional Studies

Michele M. Moe, Advisor

This program, which leads to a Bachelor of Arts degree, may lead to opportunities in supervision, administration or group leadership in the public and private sectors.

Requirements

1. Complete 60 hours of academic work from an accredited four-year, degree-granting institution. At least 30 hours of credit must be taken from Western Michigan University.
2. Complete the following core courses (15 hours), with a minimum grade of "C" in each course:
   - ACTY 210 Principles of Accounting
   - ACTY 211 Principles of Accounting
   - COM 320 Introduction to Public Speaking
   - MKTG 350 Marketing Principles
3. Complete a minimum of 30 semester hours of credit from four of the six "Applied Professional Leadership Studies" concentration blocks. The 30 hours are to be completed as follows:
   A. A minimum of nine semester hours in at least three of the six topic areas.
   1. Quantitative Studies
   2. Communication Skills
   3. Analytical Studies
   4. Environmental Concerns
   5. Human Relations Skills
   6. International Concerns
   B. Additional course work from any of the above, to bring the total from these areas to 45 hours.
   3. Complete the University's General Education Requirements (37 hours).
   4. Complete the University's Computer Literacy, Intellectual Skills, and Baccalaureate Writing requirements.

CONCENTRATIONS

Analytical Studies

The complex problems of today's world require a variety of approaches, as well as skill in analyzing those problems and making decisions. The curricula are designed to develop flexibility in approaching problems, and skill in analysis.

CS 111 Computer Science I
ECON 107 Economic Writing
ED 230 The Nature of Creativity
IME 305 Work Analysis
PHIL 310 Moral Philosophy in the U.S.
REL 311 Myth and Ritual
REL 334 Religion in Modern Society

Communication Skills

Effective communication is increasingly viewed as the basis of cooperative human interaction. Businesses and public and governmental agencies have come to value the communication effectiveness of those in leadership positions. Courses in this bloc are designed to improve communication skills.

BIS 340 Principles of Business Communications
COM 104 Public Speaking
COM 170 Interpersonal Communication
COM 200 Introduction to Communication Theory
COM 482 Communication Processes in the Organization
ENGL 105 Thought and Writing
ENGL 305 Practical Writing in the U.S.
LANG 105 The Nature of Language
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 block are designed to improve the leader’s knowledge of these environmental issues.

BICS 105 Environmental Biology 3
BAS 320 Ecology and The Black Community 3
ECON 319 Environmental Economics 3
ENVS 350 Environmental Problem Solving 3
FCL 380 Legal Environment 3
GEOG 100 World Economics and Man 4
GEOG 205 Human Geography 3
HIST 204 Business History 3
PHIL 313 Philosophy of Law 4
PHIL 314 Philosophy and Public Affairs 4
PSCI 306 Environmental Politics 3

Human Relations Skills
Developing effective relations between individuals and groups is an important activity of today’s leader. Courses in this block 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.

BAS 300 Black Experience: From the African Beginnings to 1865 3
BAS 301 Black Experience: 1865 to present 3
COM 332 Group Problem Solving 3
COM 432 Group Communication 3
ED 250 Human Development and Learning 3
IME 402 Supervision of Industrial Organizations 3
PHIL 201 Introduction to Ethics 4
PSY 100 General Psychology 3
SOC 100 American Society 3

International Concerns
Those in positions of authority in public and private organizations are becoming increasingly cognizant of the “global village” — economic, social, and political interdependencies of the states of nations. It is vitally important, therefore, to become more knowledgeable of some of the principal features in the global market. Courses in this block will sharpen one’s ability to think critically about international affairs.

ANTH 120 Peoples of the World 3
ECON 380 International Economics 3
GEOG 361 Population: The Crowding World 3
GEOG 383 Western and Southern Europe 3
GEOG 386 Sub-Saharan Africa Man, Environments, Resources 3
GEOG 389 Monsoon Asia 3
PSCI 250 International Relations 4
PSCI 350 American Foreign Policy 4

Quantitative Studies
Leaders must be equipped with the tools and techniques necessary to solve a variety of problems which they will meet in their work and their daily lives. Courses in this block are designed to provide such tools and techniques. (One statistics course is required.)

BIS 102 Introduction to Information Processing 3
CS 105 Introduction to Computers 3
ECON 400 Managerial Economics 3
MATH 116 Finite Mathematics with Applications 3
MATH 200 Calculus with Applications 4

One of the following statistics courses is required:

MATH 216 Business Statistics 3
MATH 366 Introduction to Statistics 4
PSY 300 Statistics for the Behavioral Science 3

Health Studies
Gerry Schma, Advisor
This program is intended for allied health professionals including registered nurses (R.N.), registered dental assistants (R.D.A.), dental hygienists, radiology technologists, respiratory therapists, histotechnologists, cytotechnologists, certified medical assistants, paramedics, and medical laboratory technicians. DFI who have achieved licensure or registry in their health profession and who wish to earn a Science degree. Areas of concentration in health studies require a minimum of 45 semester hours and represent the student’s opportunity to further develop individual objectives. A major feature of the Health Studies program is that it is highly individualized and may be, to a large extent, self-directed. An advisor will assist the student in selecting appropriate courses and in preparing a program of study to accomplish the student’s educational goals.

Employability Skills 3

Occupational Education Studies
Natalie Morton, Advisor
This Bachelor of Science program is designed for those who wish to become a certified teacher in an occupational subject area. The program leads to a state of Michigan Secondary Provisional Certificate with a vocational endorsement. The program appears to individuals desiring to teach occupational subjects in comprehensive high schools, trade academies, area career and technical centers, and community colleges. The Certification Office within the College of Education processes all recommendations for certification and advises students seeking additional teaching endorsements.

Admission Requirements
In addition to the regular General University Studies admission requirements, applicants to this program must also meet the following prerequisites required for all degree candidates recommended for teaching certification by the College of Education at the time of application:

1. Complete ED 250 Human Development or an approved course with a grade of "C" or better;
2. Possess a cumulative grade point average of 2.5 or higher; and,
3. Achieve passing scores of the Michigan Test for Teacher Certification (MTTC)—Basic Skills Section.

When admission has been granted, the Office of Admission will prepare and sign a credit verification which will enable the advisor to prepare a program outline prior to the first registration.

Program Requirements for Occupational Education Studies
1. Complete a teachable major. A minimum of 30 hours in an occupational course sequence planned in collaboration with a community college and in conjunction with a university advisor in one of the following Michigan Department of Education vocational education teaching endorsement areas of vocational business services, vocational distributive education, vocational home economics, or vocational-technical under the State Plan for Career and Technical Education in Michigan.
2. Complete a teachable minor: A minimum of 20 hours in a teaching minor sequence for Secondary Education - Curriculum approved by a university advisor.
3. Complete work experience: A minimum of 4,000 hours of recent and relevant work experience required in the teachable major.
4. Complete the following 21 hours of Professional Education Courses:
   - ED 305 K-12 Content Area Literacy 3
   - CTE 305 Career and Technical Education Employment Skills 3
   - CTE 342 Curriculum Development in CTE 3
   - CTE 344 Teaching Methods in CTE 3
   - CTE 348 Student Assessment and Management 3
   - CTE 510 Special Populations in CTE 3
   - CTE 512 Principles of Career and Technical Education 3
5. Complete the following 12 hours internship and seminar courses:
   - CTE Seminar/Teaching 2
   - CTE Intern/Teaching in CTE 10

Social Science Studies
Gerry Schma, 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 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 studies concentration are as follows:

1. A minimum of 12 semester hours of credit selected from the following: ANTH 250 Principles of Cultural Anthropology; ECON 201 Principles of Microeconomics; HIST 210 American History to 1877 or HIST 211 American History since 1877; GEOG 205 Human Geography; PSCI 100 Introduction to Political Science; PSY 150 Introduction to Human Behavior; SWRK 210 Social Work Services and Professional Roles; SOC 200 Principles of Sociology or SOC 300 Sociological Theory.

2. At least 33 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—chosen from a number of departments, disciplinary—chosen from a single social science discipline, or applied—chosen 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 technology, 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 must take additional professional courses.
The Graduate College offers a wide variety of programs leading to the master's, specialist, and doctoral degrees.

The Master of Arts is awarded in numerous programs in the following general categories within the College of Education: Career and Technical Education, Counseling Psychology, Counselor Education, Education and Professional Development, Educational Leadership, Family and Consumer Sciences, Physical Education, and Special Education.

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.

The University also offers the Master of Science in Accountancy, Applied Mathematics, Biological Sciences, Biostatistics, Business, Computational Mathematics, Computer Science, Construction Management, Earth Science, Engineering (Computer, Electrical, Industrial, and Mechanical), Engineering Management, Geology, Manufacturing Engineering, Materials Science and Engineering, Medicine, Occupational Therapy, Operations Research, Paper and Imaging Science and Engineering, and Statistics, as well as the Master of Business Administration, Master of Development Administration, Master of Fine Arts (in Art and in Creative Writing), Master of Music, Master of Public Administration, and Master of Social Work. In addition, dual Master of Arts programs (leading to two master's degrees) are available in Counselor Education/Rehabilitation Teaching and in Special Education/Orientation and Mobility.

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 in Special Education.

Please refer to The Graduate College Catalog, 1998–2000 for further information on these programs, as well as on admission and graduation requirements.
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 Executive Director, 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 study abroad programs and scholarships, faculty and student exchanges, field courses and seminars overseas, and study tours. It manages the recruitment of international 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 abroad programs, financial aid, 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.

**International Student Services Office**

For more information, see the section on “Admissions” and the section on “University and Student Services.”

**Career English Language Center for International Students**

For more information, see the section on “Admissions” and the section on “University and Student Services.”

**Diether H. Haenicke Center for International and Area Studies**

For more information and description of the programs of study, see the College of Arts and Sciences section of this catalog which includes the “Diether H. Haenicke Center for International and Area Studies.”

**Institution-to-Institution Linkages**

The Office of International Affairs negotiates and manages 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 the 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, nearly 2,000 students have passed through this innovative program. Similar "twinning programs” have been established in Hong Kong, India, and Sri Lanka.

**CURRENT LINKAGE PARTNERS**

**Africa**
- Addis Ababa University, Ethiopia
- Obafemi Awolowo University, Ille-Ife, Nigeria

**Americas**
- Autonomous University of Queretaro, Queretaro, Mexico
- Autonomous University of Guadalajara, Guadalajara, Mexico

**Asia**
- Beijing Language and Culture University, Beijing, People’s Republic of China
- 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
- Xi’an 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
- Rajagiri International School for Education and Research, Kochi, India
- School for International Training, Jakarta, Indonesia
- Aoyama Gakuin Women’s Junior College, Tokyo, Japan
- National Kaohsiung Normal University, Kaohsiung, Taiwan, Republic of China
- Christ College, Bangalore, India
- Hindustan College, Madras India
- Rajagiri International School for Education and Research, Kochi, India
- School for International Training, Jakarta, Indonesia
- Aoyama Gakuin Women’s Junior College, Tokyo, Japan
- Daito Bunka University, Tokyo, Japan
- Japan Aviation Academy, Yamanashi and Chibuse, Japan
- Josai University, Sakado, Saitama, Japan
- Josai International University, Togane, Chiba, Japan
- Keio University, Tokyo, Japan
- Nagoya Gakuin University, Seto, Aichi, Japan
- Nihon University, Tokyo, Japan
• Otaru University of Commerce, Otaru, Hokkaido, Japan
• Rikkyo University, Tokyo, Japan
• St. Margaret's College, Tokyo, Japan
• Takaoka College of Law, Toyama, Japan
• Sooyeungryong Women’s University, Seoul, Republic of Korea
• Sunway College, Kuala Lumpur, Malaysia
• Trinity College, Kandy, Sri Lanka
• Ho Chi Minh City University of Science and Technology, Ho Chi Minh City, Vietnam

Europe
• Inter-University Centre, Dubrovnik, Croatia
• University of Franche - Comté, Besançon, France
• Sibelius Academy, Helsinki, Finland
• Fachhochschule Kiel, Kiel, Germany
• Free University of Berlin, Berlin, Germany
• University of Bonn, Bonn, Germany
• University of Paderborn, Paderborn, Germany
• University of Passau, Passau, Germany
• University of Tubingen, Tubingen, Germany
• University of Latvia, Riga, Latvia
• Haarlem Business School, Haarlem, The Netherlands
• Norwegian School of Management, Oslo, Norway
• Saratov State University, Saratov, Russia
• Institute of Spectroscopy, Russian Academy of Sciences, Moscow, Russia
• University of Burgos, Burgos, Spain
• Vaganova Ballet Academy, St. Petersburg, Russia
• University of Leicester, Leicester, United Kingdom

Middle East
• The American University in Cairo, Cairo, Egypt
• Suez Canal University, Ismailia, Egypt
• Tel Aviv University, Ramat Aviv, Israel

Asia

China
Beijing Language and Culture University, in the capital city of Beijing, is the site of WMU's study abroad program in the People's Republic of China. BLCU, formerly known as the Beijing Language Institute, is the national center for teaching Chinese as a second language. Participants enroll in intensive Chinese language and culture courses, and can select classes in the humanities and business. Students also have the opportunity to set up an internship in Beijing. At least second-year college-level Chinese proficiency is required. Fall semester.

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 16 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 in Japanese business, technology, management, Japanese politics and government, and communication and contemporary media. A limited number of $5000 scholarships are provided by the Michigan Japan Foundation.

Keio University Student Exchange Program offers one scholarship for two semesters of study in Tokyo at one of Japan's top private universities. This competitive scholarship covers tuition, room, and board.

The Japan Adventure/Japan Horizon Programs in Otsu, Shiga Prefecture, and Sakaike, 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 speakers in Japan as in a cruise ship or in a tourist complex ashore. This is an ideal program for beginning students of Japanese.

Daito Bunka University Student Exchange Program offers the opportunity to study Japanese language, literature, law, economics, and international relations in a cruise ship or in a tourist complex ashore. This is an ideal program for beginning students of Japanese.

Josi International Student Exchange Program offers the opportunity to study Japanese language and culture, humanities, management, and information sciences in Tanabe, Chiba near Tokyo. This is a reciprocal 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, and board 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. Applicant must be a student in the Haworth 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 and culture 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 WMU study abroad programs with WMU “sister schools”. Living expenses in Japan and airfare between U.S. and Japan are covered.

Ryoji Koie Art Scholarships enable two WMU students to study in Japan under the noted ceramist Professor Ryoji Koie. Travel and some living expenses 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, and taught in English, including business, communications, computer science, pre-engineering sciences, and general education. Instruction in Malaysian language is also available. 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, and Political Science, as well as in Asian studies. Applicants must be a student in the Haworth 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.

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, economics, business, computer science,
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 which offers a full curriculum including Australian studies, advanced manufacturing and materials, arts, business, communications, economics, education, English, the environment, 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 are the focus of this summer term field course following in the tracks of the Boswell Grand Tour: The Netherlands, France, Austrian studies, advanced manufacturing and materials, arts, business, communications, economics, education, English, the environment, geography, health, law, mathematics, politics, natural sciences, and social sciences. One and two semester programs.

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. Sponsored by the Midwest Consortium for Study Abroad (MCSA).

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 Union (EU). Courses focus on the development of the European Union, with offerings in business, history, international relations and the European Union, 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 option. 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 bi-annually in odd-numbered years, is WMU's most prestigious summer 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

Université de France-Comte, in the city of Besançon 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 of 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.

Université 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

The University of Bonn, in the historic Rhineland city of Bonn, is one of WMU's study abroad program in Germany. Bonn was the capital of the Federal Republic of Germany from 1949 until recently, and its location provides easy access to the rest of Europe. Participants enroll in intensive German language and culture classes, and if qualified may also select regular university courses. Completion of one to two semesters of college-level German is required. Winter semester.

Free University of Berlin Exchange Program offers the opportunity to study for an academic year in the capital city of Germany. One or 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 with particular strengths in engineering and science. This is a reciprocal exchange program in which participants pay tuition, fees, and housing expenses to their home university and switch places.

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. This is a reciprocal exchange program in which participants pay tuition, fees, and housing expenses to their home university and switch places.

University of Tübingen Exchange Program offers the opportunity to study for an academic year in this famous medieval university and city in Swabia. This is a reciprocal exchange program in which participants pay tuition, fees, and housing expenses to their home university and switch places.

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 Italian 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. 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.

RUSSIA

Saratov State University, in the city of Saratov, on the lower Volga River in south-central Russia, is the site of WMU's study abroad program in Russia. Participants study Russian language courses and may choose a disciplinary course in the university. Fall semester.

SPAIN

The University of Burgos, in the historic city of Burgos, located halfway between Madrid and the French border, is the site of WMU's study abroad program in Spain. The cradle of Castilla, the city and province of Burgos preserve countless castles, cathedrals, and palaces that provide evidence of Burgos' glorious past. Participants will study intensive Spanish language and culture courses, and may select regular university courses in the arts, business, economics, humanities or social sciences. Business students also have the opportunity to set up an internship in Burgos. At least second-year college-level Spanish proficiency is required. Fall semester.

University of Alicante offers Spanish (beginning), history, art history, international business, sociology; participants take 3 courses in Spanish language, and 2 other courses taught in English. Program sponsored by C.I.E.E.

University of Seville and Universidad Internacional Menendez y Pelayo offer course options in: 1) advanced Spanish language and liberal arts, 2) business and advanced Spanish, and 3) a science sorority. Semester or academic year options. Program sponsored by C.I.E.E.

SWEDEN

Vaxjo University Student Exchange Program offers the opportunity to study in Sweden's "international" university situated in Stockholm. Participants enroll in an integrated English-language program which includes...
programs in business, comparative politics, international economics, and Scandinavian culture. Intensive language courses 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. 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 Sociology (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 and management, and Spanish language (3 levels). One or two semester programs.

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 rain forests, 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 short-term 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.

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 international educational 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 that are 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 BUSINESS SEMINARS
Field courses in international business sponsored by the Haworth College of Business are offered in cooperation with universities, foreign and U.S.-based firms, and government agencies abroad. Locations vary from year to year; previous sites include Brussels, Belgium; Prague, Czech Republic; Hong Kong and Shanghai, China; and Queretaro, Mexico.

INTERNATIONAL MUSIC SEMINARS
Strings, piano, Alexander 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, sponsored by the School of Social Work, are offered in cooperation with universities and social services agencies abroad. Locations vary from year to year; past sites include England, Germany, 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, Scotland, 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 80,000 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 courses they take 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, prearranging, 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 serious plans for foreign language study in their freshman year if they would like to study in a country in which English is not the primary language, or participate in WMU-sponsored study abroad programs in China, France, Germany, Mexico, Russia, or Spain.

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 do not start learning 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 selected 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 needing 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 that enables U.S. students to work abroad legally on a temporary basis in Britain, Canada, Costa Rica, France, Germany, Ireland, Israel, Italy, and New Zealand. Information is also available about International Workcamps and other opportunities for voluntary service abroad.
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 (IIE). 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 30 alumni/alumnae 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 Australia and 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 300 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, consulates, and consultants on 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, NAFSA, the Association of International Educators, and the European Association for International Education.

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.
STUDENT RIGHTS AND RESPONSIBILITIES

Student Rights

BASIC RIGHTS
1. Students have the right to free inquiry, expression, and association.
2. Students should be free from discrimination and harassment based on race, sex, sexual orientation, age, color, national origin, religion, disability, marital status, or family status.
3. Students should be secure in their persons, living quarters, papers, and effects.
4. Students are protected against improper disclosure as provided for in the Family and Education Rights and Privacy Act of 1974.
5. Students have the right to access their personal records and other University files as provided for under the Michigan Free Press Law and the Freedom of Information Act.
6. Students are free to participate in the governance of the University through membership in appropriately designated University and college committees.

ACADEMIC RIGHTS
1. Student performance will be evaluated solely on academic criteria.
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, but they are responsible for learning the content of any course of study for which they are enrolled.
4. Students will be fully informed by the faculty about course requirements, evaluation procedures, and the academic criteria to be used in each class. This information will be provided at the beginning of the semester or sufficiently in advance of actual evaluation.

Student Academic Conduct

The following policies and procedures shall apply to all matters of student academic conduct.

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.

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 counterfeiting information for use in any academic exercise or University record.

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.
3. Students have the right to access their personal records and other University files as provided for under the Michigan Free Press Law and the Freedom of Information Act.

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 from instructors of all classes for which the student submits the work.

Clarification

Examples of multiple submission include submitting the same paper for credit in more than one course without all faculty members' permission; making revisions in a credit paper or report (including oral presentations) and submitting it again as if it were new work.

PLAGIARISM

Definition
Plagiarism is intentionally, knowingly, or carelessly presenting the work of another as one's own (i.e., without proper acknowledgment 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.

Clarification

1. Direct Quotation: Every direct quotation must be identified by quotation marks or appropriate indentation and must be properly acknowledged in the text by citation or in a footnote or endnote.
2. Paraphrase: Prompt acknowledgment is required when material from another source is paraphrased or summarized, in whole or in part, in one's own words. To acknowledge a paraphrase properly, one might state: "To paraphrase Locke's comment, ..." and then conclude with a footnote or endnote identifying the exact reference.
3. Borrowed facts: Information gained in reading or research which is not common knowledge must be acknowledged.
4. Common knowledge: Common knowledge includes generally known facts such as the names of leaders of prominent nations, basic scientific laws, etc. Materials which add only to a general understanding of the subject may be acknowledged in the bibliography and need not be footnoted or endnoted.
5. Footnotes, endnotes, and in-text citations: One footnote, endnote, or in-text citation is usually enough to acknowledge indebtedness when a number of connected sentences are drawn from one source. When direct quotations are used, however; quotation marks must be inserted and acknowledgment made. Similarly, when a passage is paraphrased, acknowledgment is required.

Faculty members are responsible for identifying any specific style/format requirement for the course. Examples include but are not limited to American Psychological Association (APA) style and Modern Languages Association (MLA) style.
Academic computer misuse is the use of software to perform work which the instructor has told the student to do without the assistance of software.

Conduct in Research
Research and creative activities occur in a variety of settings at the University, including classes, seminars, discussions, research projects, or service projects. Research and creative activities rest on a foundation of mutual trust. Misconduct in research and creative activities, e.g., the protection of human subjects, the welfare of laboratory animals and biosafety. Allegations in these areas may be brought by Human Subjects Institutional Review Board, the Institutional Animal Care and Use Committee, and the Institutional Biosafety Committee.

Charges of Violations of Academic Honesty and Conduct in Research
Western Michigan University's academic honesty and conduct policies have been created and defined by members of its academic community, recommended by its faculty senate, and adopted by its board of trustees. The University believes necessary to support these policies are managed and facilitated by the Office of Student Judicial Affairs (OSJA). If you have questions about the forms, process, your role in the process, or anything else related to academic honesty, please call the Office of Student Judicial Affairs at 387-2160. These policies take effect August 30, 1999, and supersede previous catalog sections entitled "Academic Policy and Status," "Academic Conduct: Violation: Consequences and Appeals," "Academic Grade Appeals Procedure," and "General Academic Appeals Procedure." This section applies to cases in which a student is to be charged with a violation of the Academic Honesty Policy, including the policy on Academic Honesty and the policy on Conduct in Research.

1. Charging a student with a violation: An Academic Integrity Charge Form is filled out by the instructor for the purpose of charging the student. After the instructor completes the form, the instructor sends it (or may fax it) to the OSJA. A staff member in that office will then contact the student and schedule a meeting between the student and the OSJA. An OSJA staff member will also notify the Registrar of the pending case, and will institute a "disciplinary hold" preventing the student from dropping, adding, or registering in classes.

2. If the student admits the charge: If the student admits responsibility to the OSJA, the OSJA will assist the instructor in setting up the hearing and will notify the student of its time, date, and location.

3. If the student wants to appeal a finding of responsibility after a hearing with the instructor: If the student admits responsibility resulting from a hearing with the instructor to an Academic Integrity Committee, the instructor may impose an academic penalty up to failure of the course in which the student is enrolled. A decision by the instructor regarding a grade penalty cannot be appealed by the student once the student has been found responsible and has exhausted all available appeals. Also, once the student has been found responsible and has exhausted all available appeals, that student’s continued attendance in the relevant class depends on the penalty imposed by the instructor or the OSJA. If the student determines to fail the student in the course, the student is not permitted to continue attending class. After the finding of responsibility, the OSJA may impose additional penalties ranging from reprimand to dismissal from the University.

4. If a finding of "not responsible" has been made: A finding of "not responsible" occurs when a student admits responsibility to the OSJA, the instructor so decides, or an Academic Integrity Committee so decides by majority vote. When that finding has occurred, the instructor may impose an academic penalty up to failure of the course in which the student is enrolled. A decision by the instructor regarding a grade penalty cannot be appealed by the student once the student has been found responsible and has exhausted all available appeals. Also, once the student has been found responsible and has exhausted all available appeals, that student’s continued attendance in the relevant class depends on the penalty imposed by the instructor or the OSJA. The student may appeal a finding of not responsible to the Academic Integrity Committee so decides by majority vote. When that finding has occurred, the instructor may impose an academic penalty up to failure of the course in which the student is enrolled. A decision by the instructor regarding a grade penalty cannot be appealed by the student once the student has been found responsible and has exhausted all available appeals. Also, once the student has been found responsible and has exhausted all available appeals, that student’s continued attendance in the relevant class depends on the penalty imposed by the instructor or the OSJA. If the student determines to fail the student in the course, the student is not permitted to continue attending class. After the finding of responsibility, the OSJA may impose additional penalties ranging from reprimand to dismissal from the University.

5. While a case is pending: A case is considered pending until one of two events occurs: (1) the student admits responsibility or (2) the hearing process is completed. While a case is pending, the student has the right to attend and participate in the case. If the case is pending at the end of the semester, the instructor must assign an Incomplete grade and then submit a change of grade once the process is complete.

6. Instructor unavailable to assign grade: If instructor responsibilities may arise which may prevent an instructor from assigning a grade in a timely manner, the academic unit chair/director will make reasonable efforts to contact and ask the student to supply a grade. If these efforts are unsuccessful, the instructor’s academic unit chair/director will appoint another qualified faculty member to assign the grade.

Selection, Training, and Organization of Academic Integrity Committee (AIC) An Academic Integrity Committee (AIC) will be drawn from a panel of faculty and students.
who are trained by the Office of Student Judicial Affairs (OSJA). For each instance of academic dishonesty charge which requires academic dishonesty and to determine selection of a five-member AIC and, when required, AIC replacements from the AIC academic unit is asked to recommend one of three faculty members and two student panel, to ensure continuity of experience and summer. For a charge against a graduate student, both student members shall be graduate students. Each academic unit will elect one tenured or tenure-track faculty member to serve on the AIC panel. Student AIC panel members must be recommended by faculty, and each academic unit is asked to recommend one undergraduate and one graduate student to the OSJA. Students recommended to the AIC panel will be screened by the OSJA to ensure that no AIC student member has incurred a previous academic dishonesty sanction and that each AIC student member has a satisfactory disciplinary record. Faculty members will serve three-year terms (with staggered terms for the first AIC panel, to ensure continuity of experience and training). Student members serve one-year terms with reappointment possible for up to a total of three years. It will be necessary to include on the panel those who can serve in the spring and summer. Each five-member AIC shall be composed of three faculty members and two student members. For a charge against an undergraduate student, both student members of the AIC shall be undergraduates. For a charge against a graduate student, both student members shall be graduate students. Each AIC will elect a faculty member to chair the committee, and each AIC must have three faculty and two student members present to have a quorum. When necessary, faculty and/or student members of an AIC may be replaced with AIC panel members selected by the PCC. The Professional Concerns Committee (PCC) shall also function as an oversight committee for reviewing and monitoring all University policies and procedures dealing with academic conduct, including academic dishonesty, grade appeal, and program dismissal issues. A report of all AIC activities shall be made to the Faculty Senate Executive Board each year by the PCC, and recommendations for changes in policies and procedures regarding academic conduct, including academic dishonesty, grade appeal and program dismissal issues may be part of that annual report. Such recommendations may result in modifications to these procedures and policies.

Course Grade and Program Dismissal Appeals

This section applies when a student wants to appeal a final course grade that has been recorded by the Registrar on the student's academic record or when a student wants to appeal a decision to dismiss the student from an academic program for reasons other than charges of violations of academic honesty and/or conduct in research policies. Through the PCC process, the Office of the University Ombudsman is available to students and instructors for assistance on procedures and clarification of the rights of all parties. 1. Informal meeting with instructor: A student is encouraged to begin the appeal process by meeting with the instructor who assigned the grade or the person(s) who made the program dismissal decision. Such meetings often help students understand the grading practices of instructors and often lead to resolution of concerns. If the student is dissatisfied with the action of the instructor, the student may submit a written appeal to the instructor. The instructor shall provide a written response to the student within thirty calendar days of receipt of the appeal letter. The appeal letter must include the basis of the appeal and must state in detail why the student believes that grade or program dismissal decision should be changed. The accepted bases of appeal are:

A. Grades were calculated or the program dismissal decision was made in a manner inconsistent with University policy, the syllabus, or changes to the syllabus.

B. The grade(s) was/were erroneously calculated.

C. Grading/performance standards were arbitrarily or unequally applied.

D. The instructor failed to assign or remove an incomplete or to initiate a grade change as agreed upon with the student.

A grade appeal cannot be made in response to a grade penalty assessed as a result of an official finding of responsibility for academic dishonesty. Again, this finding will have been made through the procedures provided in the academic honesty policy.

Following a conference with the student, the chair/director may or may not request that the instructor re-evaluate the student's work in the course. The chair/director cannot change the student's grade without the instructor's agreement.

Note: Grade appeals or other complaints based on charges of discrimination or sexual harassment should be made to the affirmative action or other office, pursuant to other University policies and procedures.

2. Written appeal and conference with the academic unit chair/director: A student shall submit a letter requesting an appeal to the academic unit chair/director. This letter may be received by the academic unit chair/director within ninety calendar days of the last day of the semester or session in which the grade was recorded on a student's record, or in the case of a program dismissal, within ninety calendar days of the day the written notification of program dismissal was sent to the student. The letter must identify the basis of the appeal and must state in detail why the student believes that grade or program dismissal decision should be changed. The accepted bases of appeal are:

A. Grades were calculated or the program dismissal decision was made in a manner inconsistent with University policy, the syllabus, or changes to the syllabus.

B. The grade(s) was/were erroneously calculated.

C. Grading/performance standards were arbitrarily or unequally applied.

D. The instructor failed to assign or remove an incomplete or to initiate a grade change as agreed upon with the student.

A grade appeal cannot be made in response to a grade penalty assessed as a result of an official finding of responsibility for academic dishonesty. Again, this finding will have been made through the procedures provided in the academic honesty policy.

3. Appeal to committee: If the matter involves a program dismissal, the chair/director has granted that a basis of student appeal (A, B, C, or D above) may exist and the instructor has subsequently fairly re-evaluated the student's work, the student may appeal to a grade and program dismissal appeals committee. This appeal must be initiated within thirty calendar days of the instructor's unfavorable decision (reached by the means described in step 2). If the student has requested a meeting with the academic unit chair/director and has not been granted such a meeting within sixty calendar days of the chair/director's receipt of the student's request, the student may then initiate an appeal to a grade and program dismissal appeals committee.

The student will initiate an appeal through the Office of the University Ombudsman. When the Ombudsman receives the appeal, the Ombudsman will schedule a meeting of a grade and program dismissal appeals committee using procedures established by the PCC. The committee will consist of three members, at least one of whom is a panel of faculty established for this purpose. A grade and program dismissal appeals committee can effectuate a grade change or a reversal of a program dismissal decision by majority vote.

The panel from which the three-member grade and program dismissal appeal committee is drawn will be made up of five faculty members from each college, who will be appointed by the college chair/director for a term staggered by the Professional Concerns Committee of the Faculty Senate.

4. Instructor unavailable to assign grade: Circumstances may arise which may prevent an instructor from assigning a grade in a timely manner. In such instances, the academic unit chair/director will make reasonable effort to contact and ask the instructor to supply a grade. If these efforts are unsuccessful, the instructor's academic chair/director will appoint another qualified faculty member to assign the grade.

The Family Educational Rights and Privacy Act

The Family Educational Rights and Privacy Act of 1974 is a Federal law that requires 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 the 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 students, except to personnel within the institution, to officials of other institutions in which students seek to enroll, to persons or organizations providing 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 the 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, administration, clerical and professional employees, and other persons who manage student record information (e.g., Office of the Registrar, Office of Admissions and 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, curriculum 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's Office in writing within the official drop-add period of each semester or session. The law provides students 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 they believe the outcome of the decision 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 institution to coordinate the inspection and review procedures for student educational records, which include admissions, personal,
Revisions and clarifications will be published as experience with the law and institutional policy warrants.

**Western Michigan University Policy on 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, color, national origin, handicap, height, weight, or marital status. 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 so severe, pervasive, and persistent that it affects the conduct of an individual or the educational environment itself. The type of unwelcome sexual conduct covered under this policy includes, but is not limited to, sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature.

**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.

**Ethnicity:** Ethnicity is defined as the perception and treatment of any person, not as an individual, but as a member of a category based on ethnicity.

**Title IX:** Title IX of the Education Amendments of 1972, 20 U.S.C. § 1681, et seq., and the regulations promulgated thereunder, implements the requirement of the United States Constitution that the Federal government not discriminate on the basis of sex in its programs and activities.

**Recess:** Recess means the period of time that the records will not be amended and will also be informed of their right to a formal hearing by the Registrar. Students may then request a formal hearing. The request must be made in writing to the Registrar who, within ten days after receiving such request, will inform students of the date, place, and time of the hearing. Students may present evidence relevant to the issues raised and may be assisted or represented at the hearings by one or more persons of their choice, including attorneys, at the students' expense. 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.

**Decisions of the hearing officer will be final, and based solely on the evidence presented at the hearing, will consist of written statements summarizing the evidence and stating the reasons for the decisions, and will be delivered to all parties concerned. The educational 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 appeal to the Board of Trustees. If the Board of Trustees modifies the decision of the hearing officer, the Board's decision is final. The students then have the right to appeal to the University Court. If the appeal is not heard by the University Court, the Board's decision is final.**

**Complaint Procedure:** Sexual harassment and sexism constitute acts of misconduct. Therefore, whenever such acts are reported to the University, 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 should report such conduct to the Director of Compensation and Employee Relations, 1272 Billy Hall (387-3620). Students should report such conduct to the Affirmative Action Director and Assistant General Counsel, 241 Walwood Hall (387-8970). The Director of Compensation and Employee Relations and the Affirmative Action Director and Assistant General Counsel shall jointly establish appropriate procedures to implement this policy. They shall also investigate thoroughly any complaints of alleged sexual harassment or sexism, and will report the results of such investigation to the President of the University. If you hesitate to file a sexual harassment complaint for fear of retaliation, you need to know that...**

Federal and state law, as well as University policies, protect any person who has filed a complaint of sexual harassment or sexism from being intimidated, harassed, or participated in, in any manner, in an investigation resulting from a sexual harassment complaint.

Therefore, any individual so harassed, intimidated, or otherwise retaliated against may file a complaint alleging harassment, intimidation, or retaliation. Such complaint should be filed with the department of Legal and Compliance Affairs, 240 Walwood Hall (387-8970).

**President's Statement on Racial and Ethnic Harmony**

Western Michigan University is firmly committed to the principles of equality and nondiscrimination. On its campus, students, faculty, and staff of many races and ethnic backgrounds live and work closely together day in and day out. Western Michigan University, in accordance with the law, prohibits discrimination in its policies, practices, and programs. Discrimination based on race, color, national origin, handicap, height, weight, veteran status, family status, 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 of prohibited discrimination, may file their inquiries and complaints with an Affirmative Action Officer, 274 Walwood Hall (387-8858).

The Affirmative Action Officer will receive and investigate complaints of prohibited discrimination filed with him/her by students and may assist the students in resolving their concerns. The complaint, an oral allegation or written complaint, 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 complaint 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 a grievance should contact the Affirmative Action Officer, 274 Walwood Hall (387-8858). The grievance must be filed with the Affirmative Action Department on an official University Grievance Form and be signed by the student(s) involved. The grievance must be timely, state all facts relevant to the protected events, occur 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 grievances, and it is to receive copies of all grievance correspondence.

Any student(s) filing a written grievance may choose to have a representative present at any step in the Grievance Procedure, provided 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 any), 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 grievances 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 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.

Western Michigan University Student Code

A student who chooses to enroll at Western Michigan University assumes the obligation for conduct that is compatible with the University’s mission as an educational institution. While students have the privilege to enroll at the University, an individual or group. Many of the provisions may be extended or amended to apply to new and unanticipated situations which may arise.

Enrollment in the University does not insulated students from their obligation to behave in a manner consistent with local, state, and federal law. Violation of local, state, and federal law while on University premises is a violation of the Student Code. While the University does not desire to act as a policing authority for the activities of the student off of University premises, the University may take appropriate action in situations involving misconduct that is flagrant disregard for any person or persons, and/or when a student’s or student organization’s behavior is judged to threaten the health, safety, and/or property of any individual or group. Many of the items of misconduct referred to in the Student Code may also constitute violations of state, local, and federal law and carry the possibility of criminal prosecution as well.

While any violation of the Student Code is considered a serious matter, certain violations are considered to be of an especially serious nature. These violations include acts of academic dishonesty, any acts that disrupt the functioning of the University, and any acts that threaten the health or safety of any member of the University community or any other person. Student involved in these activities are considered a threat to the orderly functioning of the University, and their behavior is considered detrimental to the educational mission.

The complete text of the Western Michigan University Student Code is published by the Office of Student Judicial Affairs of the Division of Student Affairs and may be obtained from that Office.
UNIVERSITY AND STUDENT SERVICES

**Academic Skills Center**
The Academic Skills Center, located at 1042 Moore Hall, telephone 387-4442, 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 to 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.

**MATH SEMINAR**
The Math Seminar reviews concepts covered on the Math Skills Test. Students identify troublesome areas in math, receive guided instruction, and practice concepts like fractions, ratios, percentages, area, and volume. In the final week of each seminar series, students can take the Math Skills Test.

**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, golf, gymnastics, synchronized skating, softball, tennis, indoor and outdoor track, soccer, and volleyball.

**Children's Place Day Care Center**
The Children's Place Day Care Center, located in the middle of campus at 2210 Wilbur, is open from 7:30 a.m. to 6:00 p.m. weekdays. The convenient location and flexible care schedules make the center an attractive child care option for WMU faculty, staff, and students. Children 2-1/2 to 9 years old and toilet trained may be enrolled full-time, part-time, or hourly (maximum 10 hours per week). Breakfast, lunch, and snacks are included in the tuition and are provided by WMU's Dining Services Department. A full vegetarian menu is available each day. 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.

**Career and Student Employment Services**
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.

**Disabled Student Resources and Services**
Disabled Student Resources and Services assists Western students who have disabilities as they seek to find effective accommodations, maximize their abilities and gain independence. DSRS offers advocacy, registration assistance, readers/scribes and other test accommodations, textbook taping, accessibility information, hand-crank transportation, adaptive equipment, and referral to other campus and community agencies.
LEARNING DISABLED STUDENTS

Students with documented learning disabilities may contact the Coordinator for Services for Learning Disabled Students to discuss requests for accommodations or other services. Contact the Coordinator at the Center for Academic Support Programs, 201 Moore Hall, (616) 387-4410.

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, 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 councils, at present, include: Admissions, Financial Aid, and Student Affairs; Budget and Finance; Campus Planning; Graduate Studies; Regional Education; Research Policies; and Undergraduate Studies.

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.

A broad spectrum of spiritual opportunities is available to interested students, including traditional, contemporary, and experimental worship; individual and small group studies; workshops and retreats; study-travel experiences, social concerns, and action groups.

Various church groups provide support for clergy whom they assign to 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 various beliefs.

The Office of Faith and Spiritual Development, a satellite unit of the Office of Student Affairs, is located in the Kanley Memorial Chapel. The Chapel is designed to serve as a center for worship-oriented religious and spiritual activities. In addition, the Chapel provides office space for eleven campus ministers.

The Kanley Memorial Chapel facility includes an interfaith chapel, several meeting rooms, and a community room managed 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 Saturday worship services and provides a popular site for weddings.

In addition to Kanley Memorial Chapel, there are several student centers operated by specific departments, including: the Coordinator for Services for Learning Disabled Students to discuss requests for accommodations or other services. Contact the Coordinator at the Center for Academic Support Programs, 201 Moore Hall, (616) 387-4410.

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WMU RESIDENCE HALLS

Twenty-two residence halls in locations close to every academic hall on campus attract over 5,500 students each academic year. These students 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 rental, 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 each academic year are selectively sent information (fall during the month of February; winter-in November; spring and/or summer-in 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 roommate(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 upper-class and honor students. Other halls attract students interested in health and wellness, extended quiet hours, presence of a fitness center, or coed. 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 bath and toilet facilities are provided. While most assignments are two students per room, single room assignments are available. Some halls offer coed or four-person room assignments in the larger rooms.

The WMU Housing staff are key players in coordinating services 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 Hall of special interest. Students must be at least twenty-one or junior status to live in Davis Hall. French Hall and Zimmerman Hall are reserved for sophomores or students aged 21 and over. No hall is reserved exclusively for graduate students.

There are room-only halls available to those who do not wish to participate in the WMU Dining Service options. At least one residence hall is open throughout the entire year, including periods of University closure. All other residence halls close between semesters and sessions, and residents who must remain in the area make their own temporary housing arrangements during these periods. All residents are permitted to remain in their assigned rooms during the Thanksgiving and spring break recess periods.

The award-winning WMU Dining Service has an excellent reputation with an extensive menu developed in consultation with residents 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 Monday through Sunday. For persons leaving campus every weekend, the Bronco Brown Dining Plan, providing meals Monday through Friday, is also available. The popular Bronco ten meal per week plan (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., five days a week (Saturday until 6:00 p.m.), and from 8:00 a.m. until 3:00 p.m. on Sunday. Two dining rooms (Burnham and Goldsworth Valley I) are open until 8:00 p.m. Monday-Thursday.

For further information contact the Residence Hall Office, Faculty Student Services Building, 616-387-4735 or 800-545-6006.

WMU APARTMENTS

Many students choose to live in one of three Western Michigan University Apartment complexes close to academic buildings, recreation areas, library, and the Student Center. Student families, single graduate, and certain other undergraduate students are eligible. The apartments are inexpensive and convenient campus rental, rates, which include parking, all utilities and cable television, are generally lower than area complexes.

Nearly 800 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 49008-5079. Telephone: 800-882-9819 or 616-387-2116 fax 616-387-4786.

OFF-CAMPUS HOUSING

Approximately 72 percent of Western's students live off campus in privately owned housing. Thus, a university staff is available to assist them in locating a place to live. Listings of apartments, houses, rooms, and roommates are maintained on the World Wide Web and are printed for distribution. Students
can see a photograph of what the rental unit looks like by accessing the WWW. While most students look forward to off-campus living as an opportunity to pursue individual life styles, their experiences are often plagued by strained roommate relations and rental problems that interrupt their academic achievement. Recognizing the significance of an adequate housing environment for all students, the University's rental listing program is supplemented with conflict resolution and educational programs as well as tenant/landlord services. For additional information regarding off-campus housing, contact the Office of Off-Campus Life, Room 3510, Faunce Student Services Building. Telephone: 616-387-2336; fax 616-387-2325.

SORORITY/FRATERNITY HOUSING

Most houses are privately owned and operated by various fraternity organizations for their members. For more information, contact the Office of Student Life, at 387-2115 or visit the Office at 387-2115 or visit the Office at 3420 Faunce Student Services Building.

Office of International Affairs

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. Contact the Office for information about the Office of International Student Services; the Career English Language Center for International Students (CELCIS); the Diether H. Haenicke Center for International and Area Studies; and the Office of Study Abroad. Other responsibilities of the Office of International Affairs include initiation and maintenance of exchanges with foreign institutions, sponsorship of conferences and lectures on international issues, developing technical assistance and training projects, summer institutes for international students, and assisting faculty and units in preparing grant proposals.

For further information and application forms, contact: Career English Language Center for International Students, B0021 Ellsworth Hall, Western Michigan University, Kalamazoo, Michigan 49008-5177; Telephone: 616-387-4800; fax: 616-387-4803; or download the materials from the CELCIS web page (http://www.wmich.edu/oia/celcis).

OFFICE OF STUDY ABROAD

Students who are interested in studying abroad should contact the Office of Study Abroad. Assistance in selecting an appropriate program, as well as extensive resources about foreign study options, are available. Financial aid, International Student Identity Card, Youth Hostel Pass, and some volunteer and work abroad information is available. For further information contact the Director of Study Abroad, B200 Floor Ellsworth Hall; telephone: 616-387-5890; fax: 616-387-3962.

DIETHER H. HAENICKE CENTER FOR INTERNATIONAL AND AREA STUDIES

The Diether H. Haenicke Center for International and Area Studies houses a family of interdisciplinary programs devoted to the study of major areas and regions of the world, and to global and international developments and institutions. These programs include graduate level. Interdisciplinary programs in the Haenicke Center draw heavily on courses in the College of Arts and Sciences, as well as offerings from other colleges. They provide a broad variety of intellectual and experiential stimuli designed to promote an understanding of large geographical regions, and the nature of interactions among cultures and nations of the world. In addition, the programs strongly encourage foreign language study and study abroad.

Haenicke Center programs are designed for students planning careers in international business, education, government, or other professional fields. Success would be enhanced by an understanding of diverse cultural practices around the world. They also are excellent preparation for systematic study of geographical and cultural regions at the graduate level. For additional information about the specific area studies programs offered through the Center, see the Diether H. Haenicke Center for International and Area Studies entry in the College of Arts and Sciences section of this catalog. The Center's office is located in B200 Ellsworth Hall, (616) 398-3907.

The Martin Luther King, Jr. Academy

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 is now 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 otherwise pursue a higher education to do so;
2. provide supportive services—such as academic advising, vocational and personal counseling and tutoring, 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 freshmen students. 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.

The MLK Academy 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.

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
programming for faculty, academic 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**

2112 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**

2112 Dunbar Hall

(616) 387-5011

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/lower, 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.

**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 its objective 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 our educational process.
2. Offers programs and services in response to ethnically specific student needs and concerns, including cultural awareness and student 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 of minority students on the campus of Western Michigan University, and works with students to identify concerns and develop solutions.
5. Supports programs targeted at pre-college youth in order to increase the participation of minority students in higher education.
6. Provides in-kind, 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.

**Musical Activities**

Numerous musical activities and organizations at Western Michigan University are available for the cultural enrichment of the student. Faculty members, choralists, 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 Choir, 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.

**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 personal computer from anywhere in the world. The databases are currently on both the WMU VAX system and the World Wide Web.

For more information on the activities and services of this office contact our Web site at http://Dosweb.faunce.wmich.edu/ocli.html or call (616) 387-2336; fax (616) 387-3235.

**Packing and Vehicle Registration**

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 registration 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 Avenue and Blodgett) 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. 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 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 Avenue and Blodgett) or by telephoning 387-4609 during normal University business hours.
Services located at 2507 West Michigan Avenue (at the corner of West Michigan and Knohlwood) 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, Mondays and Thursdays during the spring session, and Wednesdays 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 administration, faculty, and staff members. It is published every other Thursday by the Office of University Relations, which also produces the Western Michigan University Magazine in association with the Office of Alumni Relations. The magazine is published four times a year for alumni, donors, and other friends of the University.

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 and 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, bluegrass, and jazz music programming, as well as programming for Spanish-speaking audiences.

WIDR(FM), a 100-watt station operated by students, broadcasts on 89.1. Facilities of WIDR(FM) are located in the L. Dale Faunce Student Services Building. WIDR(FM) offers a unique opportunity for Western Michigan University students to gain experience in programming, promotion, and station operation.

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, preventive, 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, podiatry, orthopedics, and sports medicine. In addition, Health Center physicians and physician assistants can refer students to other medical specialists in the Kalamazoo area whenever 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 and not part of any other University record. Student signature is required for release.

PHARMACY
A full-service pharmacy provides prescription medications at a cost savings to students. It carries a limited number 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. If you have prescription drug coverage through outside insurance, bring the identification card with you as many major insurance cards are accepted.

LABORATORY SERVICES
The Center's full-service laboratory performs most standard diagnostic x-rays. These 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
Several 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
Anonymous HIV testing with the oral HIV antibody test (Orasure) is available to all students. For more information, call 387-4497.

SPORTS MEDICINE CLINIC
The Sports Medicine Clinic provides comprehensive diagnosis and treatment of bone and joint problems. Full physical therapy services are available. Consultations with orthopedists, sports medicine physicians, and a podiatrist are available.

PHYSICAL THERAPY SERVICES
The Center's Sports Medicine Clinic offers the full spectrum of treatment modalities provided by certified physical therapists and athletic trainers. Orders from your home physician are honored.

NUTRITION COUNSELING
Appointments with a registered dietician are available for weight management, eating disorders, sports nutrition, diabetic diet management, and more.

OFFICE OF HEALTH PROMOTION AND EDUCATION PROGRAMS
The Office of Health Promotion and Education, Sindecuse Health Center, offers a variety of interactive computer resources, information, programs and preventive health services designed to help students maintain and enhance their physical and emotional well-being. Services include an array of resources with special emphasis on the following health concerns and skills.

• Healthy intimate relationships
• Healthy sexuality
• Computerized HIV Risk Assessment
• Anonymous HIV Counseling and Testing
• Coping With Stress
• Increasing Assertiveness and Positive Thinking
• Understanding and Managing Depression
• Meditation
• Nutrition
• Vegetarian Food Choices
• Eating Disorder Assessment and Treatment
• Healthy Weight Management
• Recovery from Nicotine Dependence
• Cholesterol Testing and Education
• CPR Certification
• Blood Pressure Assessment

All programs are offered at little or no charge as a Student Health Fee benefit. Information regarding services and resources is published each semester in an informational brochure which can be picked up from our office or mailed to you by request. Information is also available through the Western Michigan University World Wide Web page under Health Resources and Services, Sindecuse Health Center.

Office of Health Promotion and Education, Hours: Monday through Friday, 8:00 a.m. - 5:00 p.m. Location: Room 1110, Lower Level, Sindecuse Health Center. 387-3263.

APPOINTMENT INFORMATION
Students are encouraged to make appointments whenever possible to prevent unnecessary waiting. Students are also encouraged to choose a clinician 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. Allow about an hour for an appointment and longer if lab tests or x-rays are required. Please cancel an appointment if unable to keep it. There is a charge for missed appointments.

SINDECUSE HEALTH CENTER HOURS

Appointments
Monday - Wednesday and Friday, 8:00 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).

PARKING
While visiting the Sindecuse Health Center, parking is available in one of the designated Health Center parking spaces in student Lot No. 40 in front of the Health Center. You may obtain a 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 seven or more non-exempt credit 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 enrolled for fewer than seven credit hours (less than four following a class session), non-enrolled students, and spouses of WMU students may pay the Student Health Fee on their first professional visit of the semester/session and receive the same benefits or opt to pay visitor rates. Eligibility for use of the Health Center extends from the first day of the applicable semester/session for which they paid 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. Visits 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.

Charges for Health Center services may be paid by cash, check, Master Card, Visa, Discover Card, debit card, or Bronco Card; however, we request that all fees under $1.00 be paid in cash. You may also charge your health care costs against your student account. The University assesses a service charge for any costs that are not paid within sixty days. Any balance on your student account may impact your ability to register or obtain a transcript.

As a courtesy to you, the Health Center will assist in the billing of insurance claims to many of the above-listed insurance companies. If you have a self-pay insurance policy, charges will be billed to your University account and are your responsibility 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 hospitalization expenses not covered by the Student Health Fee. It is important to verify the limits of hospitalization and medical coverage that you purchase. Be sure to carry the insurance identification card with you at all times.

If you are not presently covered by a major medical insurance program, consider the student insurance plan offered through Western. This plan is provided at reduced rates to students and their dependents. Brochures are available at the Health Center or by calling 387-3266.

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, 8-5, Monday – Friday, 700-9 P.M. Mondays, Tuesdays, and Fridays; 1-4:30 P.M. on Wednesdays; 9-11:30 A.M. on Thursdays; or by calling 387-3266.

IMPORTANT PHONE NUMBERS
Appointments (800) 387-3290
Information (387-3290
Insurance Information (387-3266
Pharmacy (387-3301
Health Promotion and Programs (387-3263
Sports Medicine Clinic (387-3248
HIV Antibody Testing (387-4415

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. The Clinic offers services to 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, student organization development, and campus involvement. 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 social, interpersonal, communication, and leadership skills. There is an expanded opportunity to meet and interact with people of diverse backgrounds (cultural, ethnic, economic, and social). We encourage you to visit us in 2420 Faunce 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 collegiate life by becoming involved in any of the 400 or so student organizations/agencies. These student organizations/agencies are registered and coordinated by the Office of Student Life.

Student organizations/agencies are divided into the following interest areas: Business, Fine and Creative Arts, Fraternities and Sororities, Service, Honorary, International, Media, Multicultural, Professional, Religious, Special Interest, Sports, Student Agencies, Student Government (the Western Student Association).

LEADERSHIP DEVELOPMENT
The Office of Student Life empowers the students to carry the University's mission of providing students with a "voice" in their future! Contact the Western Student Association at 387-3266 or visit us at 2415 Faunce Student Services Building.

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 intricate 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 philanthropies. The 39-plus organizations are diverse in size, ethnic makeup, 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 supports are the Order of Omicron Sigma, the Pan-Hellenic Council, the National Panhellenic Conference, and the Interfraternity Council. The Office of Student Life also advises and supports the Order of Omicron Sigma, the leadership honorary organization). In addition, the Office of Student Life supports the Greek community by providing leadership support to all members on how to achieve 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.

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, "Bingo Bash!", WMU Homecoming activities; and the College 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/novelty night clubs 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 students, faculty and staff. To get involved in CAB call 387-2112 or visit us at 1415 Faunce Student Services Building.

LESBIAN, BISEXUAL AND GAY ISSUES
The Office for Lesbian, Bisexual and Gay Issues (L/B/G) exists to promote an open and supportive environment whereby 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 LBG 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, WSA offers enrolled students free legal aid, interest free short term student loans, Grading the Prof, and many opportunities to get involved. Have a "voice" in your future! Contact the Western Student Association at 387-2194 or stop by their offices at 1141 Faunce Student Services Building.
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 construction 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 in the Information Center in the Seibert Administration Building. Individual listings in the WMU Student Directory contain the following information:
1. Name
2. Curriculum
3. Local address and telephone number
4. Home address
Students wishing to exclude any or all of the above information from the WMU Student Directory (printed and electronic) must fill out a Directory Exclusion Form in Room 3210, Seibert Administration Building, during the first five days of classes. During winter, spring, and summer terms, students may restrict this information to academic use by filling out the Directory Exclusion Form during the first five days of classes.

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. The SVS staff will assist you in determining where your interests and skills can be matched with 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, hand-capped services, advocacy, natural resources, and media/public relations.

Individual volunteer opportunities typically require a two to four hour weekly 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 Opportunities Fair. Presentations are offered throughout the academic year and include information on service sites, volunteer positions, and how to get involved.

Substance Abuse Services
University Substance Abuse Services, located in the Sincere 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 the supportive therapy, referral and follow-up services to individuals and groups. Also offered are support groups to those students facing particular situations in their relationship with mood altering drugs (alcohol, marijuana, stimulants, narcotics, 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 University Counseling and Testing Center, Division of Student Affairs, the program offers information, assessment, training, counseling and the supportive therapy, referral and follow-up services to individuals and groups. Also offered are support groups to those students facing particular situations in their relationship with mood altering drugs (alcohol, marijuana, stimulants, narcotics, and barbiturates) as well as groups for adult children of alcoholics.

University Computing Services
University Computing Services (UCS) encompasses a wide spectrum of computing and information technologies. In addition to supporting open access computing facilities, UCS operates a Help Desk that is available to all students, faculty, and staff. The primary function of the Help Desk is to help community users get “unstuck” with computing problems. Help Desk staff are trained to answer questions, solve computing problems, and give information about UCS services and systems.

Open Acess Computing Labs
There are a number of computer facilities located across Western campus. Four large “public” computing labs are available for walk-in use by the WMU community. These are located in the Computing Center, the Bronco Mall area of the Bernhard Center, the Haworth College of Business, and the University Computing Center. The Bernhard lab houses 12 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 VMScluster, and UNIX servers.

Student Residence Hall Room Computer Connection
If you have your own personal computer, you can request a connection to the campuswide computer network (WMUnet). This connection will give you access to University and departmental computing systems, the library online card catalog and remote database, 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 worldwide. The primary academic time sharing system runs Open VMS on Digital Alpha architecture. Major uses of this system include e-mail, electronic conferencing, coursework, statistics, and research. A UNIX server running Solaris is also provided, supporting many engineering and statistical software applications.

Computer Network and Systems
UCS supports an extensive on-campus network (WMUnet) and dial-up modern modem. As a member of Merit, dial-up access to University computing resources is available to students state-wide through local MichNet dial-up modern. The primary academic time sharing system runs Open VMS on Digital Alpha architecture. Major uses of this system include e-mail, electronic conferencing, coursework, statistics, and research. A UNIX server running Solaris is also provided, supporting many engineering and statistical software applications.

Micros & More Store
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.
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 (2510 Faunce Student Services Building) 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.

Counseling and Testing Center services consist of five areas: (1) Personal Counseling to assist individuals in better understanding themselves and the emotional conflicts that may interfere with their everyday functioning; (2) Educational Counseling to help students deal with conflicts concerning vocational planning and educational goals; (3) Academic Counseling to assist students in the Student Planned Curriculum; (4) Career Counseling and Testing to provide students with the resources, skills, and experiences necessary to increase their knowledge of educational and career choices. Individual and group activities are offered to (1) increase self-understanding, including insights into one's interests, skills, and values; (2) learning how to acquire information about careers; (3) review choices, make decisions, and establish plans of action; and (4) test the feasibility of one's 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-related information pertinent to career awareness. An extensive collection of professional test material is also available for students. Training and Internship Programs for graduate students and interns from the Department of Counseling Education and Counseling Psychology, School of Social Work, and Department of Psychology are available. Included in the training experience are case consultations, supervision of treatment plans, didactic presentations and professional growth opportunities.

National Standardized Testing is conducted by the University Counseling and Testing Center. The following tests are regularly ordered: ACT, LSAT, GRE, MCAT, IIAu/CPCU, DAT, CLEP, TOEFL, and academic skills exams are offered as needed. Standardized testing information is available at the Center; call 387-1972.

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.

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University Libraries

The University Libraries consist of the Dwight W. Waldo (Main) Library, the Music and Dance Library, the Education Library, the Archives and Regional History Collections, and the Visual Resources Library. The main collection is housed in the Waldo Library, which is named for the first president of Western University. Built in 1959 and enlarged in 1967, a new 105,000 square foot addition and renovation of 145,000 square feet of existing space was completed in 1991 providing space for the ever-expanding collection and 1,300 student study stations.

The total University Libraries’ collection, which numbers over three million bibliographic items, includes books, bound periodicals, electronic data bases, music scores, sound recordings, maps, documents, and materials in microform. About 6,680 periodical and newspaper titles are currently available. Through the use of various approval and gathering plans—as a part of the acquisitions program—the library emphasizes building a strong collection of current titles in all the fields of study at the University.

The University Libraries are a depository for United States and Michigan government documents. Microforms of selected United Nations documents and official records are also available. A collection of about 1,582,770 microforms contains such items as the American Periodical Series, Early American Newspapers of the 18th and 19th centuries, Early English Books printed in Great Britain from 1475-1700, and the ERIC document collection in educational research published by the Educational Resources Information Center.

Certain 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 in 1963, the collection grew to become a noteworthy addition to library resources.

2. Library holdings on southern Asia represent another area of special strength. Together with the Kercher African collection, they help support the University’s commitment to international and area studies.

3. Another area of collection strength is the history, religion, philosophy and culture of the Medieval period, holdings which help support the programs at the University of Goshen. Over 900 of the some 9,000 volumes in this collection are rare items of special interest to medieval 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 C. C. Adams Ecological Collection consists of the personal collection of books and papers of the pioneer American ecologist, Charles Chrisopher Adams.

6. The Leslie H. Wood Memorial Collection is a specialized collection of books in the fields of geography and geology. Doctor Wood, who was one of the faculty group of faculty hired at Western, taught on campus from 1904–1933.


8. A strong business collection includes special microform collections, annual reports from businesses and industries, and many periodical indexes to help with the research in the field of business and finance.

9. The Carol Ann Haenicke American Women’s Poetry housed in the Rare Book Room, Western Literatures Library, includes works by over 6,400 volumes of first and early editions of poetry by American women poets.

The Music and Dance Library is located in the Dorothy U. Dalton Center. In addition to a...
collection of some 38,600 books and scores and extensive holdings in music periodicals and serials, this branch contains a collection of 17,360 sound recordings, and an excellent collection of some 38,600 books and scores, some 612,000 bibliographic items and listening facilities.

Archives is a depository for official University records, which includes over 600 periodical and serial titles. History Collections located in East Hall, is also a branch of the University Archives. The Archives staff collects, preserves and makes accessible the records of the University. The Archives is a repository for official University records, papers, publications, and photographs documenting Western's history. Its staff also collects, preserves, and manages the Regional History Collections of books, manuscripts, ephemera, oral history tapes, photographs, local public records, and other information about the history of southwestern Michigan. In addition, there are local public records from southwestern Michigan communities which are on deposit from the Archives of the State of Michigan.

The Visual Resources Library contains over 80,000 slides of well known works of art such as printmaking, sculpture, architecture, design, drawings, photographs, and illuminated manuscripts. The images represent artifacts of the Western World, Oceania, Asia, Africa, and the Americas.

The University Libraries have a large number of computerized services available to its users. The online catalog provides access to the University Libraries' collections by author, title, subject, and keyword. Over 65 databases are available through the OCLC FirstSearch system with additional resources available through the UnCover database, IAC reference Center which also accesses subject databases. The Libraries' web page (http://www.wmich.edu/library) contains a listing of available databases and electronic resources. Terminals located in Waldo Library and its branches give the user access to those resources. Access is also available remotely from a home or office computer. Additional electronic indexes are provided on CD-ROM terminals located in reference areas.

In addition, an online automated retrieval system (OARS) is offered by the library providing access to selected vendor supplied databases in nearly every subject. The computerized operation allows users to significantly shorten time spent on literature searches for class projects. It is available to faculty, staff, and students on a cost retrieval charge basis. Inquiries about this service may be made at Central Reference Services in the main library or at all branch libraries.

General and specialized reference service is provided at the Central Reference Desk, the Science Reference Desk, and in the Document Department in Waldo Library. Reference collections of indexes, abstracts, dictionaries, encyclopedias, handbooks, bibliographies, and other sources, are maintained in each of the libraries, and reference librarians offer personal assistance in finding the books, information, and other resources needed for class or research related projects.

Research materials which are not in the University Libraries' collections can usually be obtained from another library through interlibrary loan arranged by the Reference Center located in the Resource Sharing Center of Waldo Library. The University Libraries participate in online interlibrary loan systems regionally, state-wide, nationally, and are also a member of a variety of multi-type library networks. They also hold membership in the Center for Research Libraries, a multi-million item collection located in Chicago which operates as a cooperative library for less-used but important research materials.

Self-service photocopy machines are located throughout the library system. These machines operate with coins or Branco ID chip card and have enlarging and reduction capabilities. An attendant-operated copy service is located in the Waldo Library. Microform copiers are also available within the library system.

Students enrolled in off-campus classes are always welcome at the University Libraries, where they are accorded the same privileges as any other Western student and may borrow materials with their Continuing Education identification card to easily use library services. Selected library services are also available through arrangements with the Regional Centers in the locality where the classes are taught.

The major purpose of the University Libraries is to take an active role in the educational process at the University, and to provide facilities, materials, and an environment which will not only support the students' educational progress but also will encourage them to develop the habit of self-education.

University Ombudsman

The University Ombudsman is an intervention agent and impartial person who helps students, faculty and staff resolve academic and non-academic concerns. The Ombudsman 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 Ombudsman are independence, impartiality, and confidentiality. The Ombudsman is 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 Ombudsman. The Ombudsman is appointed by and reports directly to the President. The office is located in 250-W Walwood Hall. Telephone: 387-8955.

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 program staffed, and financed by Western Michigan University Students. Recreational, educational, and health promotion programs are provided for the benefit of all University students, faculty, staff, spouses, emeriti and alumni facility members. The facility includes an 8,000 square foot fitness/weight room with over 100 pieces of fitness/weight equipment, a recreational pool with attached swim pool and saunas, a 45' climbing wall, indoor jogging track, basketball courts, volleyball/badminton courts, racquetball courts, tennis courts, squash court, indoor and outdoor tractor, fitness/weight room, and swimming pool. Open Recreation Opportunities include badminton, table tennis, climbing wall, and waterball. Equipment for some 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, competition-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 and staff members of the SRC who are interested in competitive activities. The program offers both team and individual sports, including basketball, volleyball, soccer, softball, lacrosse, football, tennis, field hockey, flag football, tennis, racquetball, badminton and much more. Intramurals provide opportunities for individuals to participate in sports experiences that will help students 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 through safe 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 Fitness/Weight Room contains a full line of variable resistance weight machines and free weights, computerized exercise bicycles, stair climbers, rowers, and ski machines. Student Exercise Specialists are available to instruct on how to use the equipment and to provide exercise training guidelines to meet personal goals.

PHYSTYLES

PhyStyles 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. Testing packages include height, weight, blood pressure analysis, and physical assessments for flexibility, muscular strength and endurance, and cardiovascular fitness. A consultation is also provided 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 top-rope system where climbers are harnessed in for safety. SRC members who wish to climb the wall must complete 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 45 foot wall.

**SPECIAL EVENTS**

URPF regularly conducts one to 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.

**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. The Veterans’ Certification Officer will assist any person who seeks certification to the V.A. under any applicable program.

Students who wish to receive A.A. benefits must annually file a “V.A. Certification Information Card” outlining plans for enrollment for the coming year and declaring personal responsibility for regular attendance during that year. Students are certified on the basis of attendance and academic progress toward degree goals. Address changes are also to be reported to the Veterans’ Certification Officer as soon as possible.

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

The Veterans’ Certification Officer may be reached in the Office of the Registrar at (616) 387-4115.

**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. Inquiries may be made by stopping in or by calling the WRS office at A331 Ellsworth Hall, 387-2990.

**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 Ellsworth 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.
The following crimes were reported to the University Police:

<table>
<thead>
<tr>
<th>Year</th>
<th>Murder</th>
<th>Sex Offenses</th>
<th>Robbery</th>
<th>Aggravated Assault</th>
<th>Burglary</th>
<th>Motor Vehicle Theft</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>0</td>
<td>0</td>
<td>1</td>
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<td>0</td>
<td>1</td>
<td>3</td>
<td>19</td>
<td>12</td>
</tr>
</tbody>
</table>

The following arrests were made by the University Police:

<table>
<thead>
<tr>
<th>Year</th>
<th>Liquor Law Violations</th>
<th>Drunk Driving</th>
<th>Drug Abuse Violations</th>
<th>Weapons Possession</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>69</td>
<td>124</td>
<td>33</td>
<td>4</td>
</tr>
<tr>
<td>1995</td>
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<td>0</td>
</tr>
<tr>
<td>1997</td>
<td>401</td>
<td>163</td>
<td>23</td>
<td>0</td>
</tr>
</tbody>
</table>

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 security 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 is 387-5555; from on-campus phones dial 7-5555.

The Department manages the student watch program and the student vehicle escort service. The student watch program consists of pairs of students walking the campus from 6:00 p.m. to 2:00 a.m., 7 days a week during fall and winter semesters. These students wear highly visible vests and are equipped with portable radios. They watch for and report crime, emergencies, and suspicious situations to the police dispatcher. These students also provide walking escorts on campus.

The student vehicle escort service consists of up to three vehicles driven by radio equipped students working from 6:00 p.m. to 6:00 a.m. 7 days a week during fall and winter semesters. These students provide rides between parking lots and residence halls. When not providing escorts, these students patrol the campus looking for crime, emergencies and suspicious situations.

The Department coordinates the locking and unlocking of all non-residence hall buildings on campus. Most buildings are closed and locked by 10:00 p.m. Monday through Thursday, by 5:00 p.m. Friday, and all weekend. Police patrols check locked buildings to make sure they are secure. Problems with building security are immediately reported to maintenance personnel who respond and make repairs.

CRIME REPORT

Numerous efforts are made to advise members of the University community of a timely basis about campus crime and crime-related problems. These efforts include the following:

1. Annual Report: A comprehensive annual report of recorded 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 it's 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 is released annually in the Crime in Michigan, Uniform Crime Report and Crime in the United States, Uniform Crime Reports.

CRIME STATISTICS

The following crime statistics were reported to the University Police:

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Total</th>
<th>Total</th>
<th>Total</th>
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<tbody>
<tr>
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<td>1997</td>
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THE DEPARTMENT OF PUBLIC SAFETY

The Department of Public Safety is located at 511 Monroe, just off the 1000 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, 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 answering points of the county-wide 911 system. The Department is also one of the signatories of the county-wide police mutual aid agreement and works closely with the other police agencies in Kalamazoo County which investigate campus crime.

Student, faculty, staff, and visitors are encouraged to report all crime, emergencies, and suspicious situations to the University Police. Reports may be made in person, by telephone, by emergency police phones, or by the police call box system. All reports of crime, emergencies, and suspicious situations are immediately investigated by a sworn police officer. See appendix A for the WMU DPS Sexual Assault Victim Guarantee.

The University's telephone system supports the following crime statistics.

- 75 emergency police phones mounted in parking lots and near heavily traveled sidewalks provide immediate radio contact with the police radio room. The non-emergency telephone number for the
Department of Public Safety's business number (387-5555) or the emergency number (911) display the number of the originating police department. This allows the police dispatcher to determine the location of the call to ensure Public Safety's knowledge of the origin of an emergency call, even if the caller is unable to communicate verbally. The same is true for the police call box system.

4. Alarm Systems: A sophisticated alarm monitoring system is 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 are not permitted to enter only through the 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 and guests are not permitted to enter 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 before they are provided a resident's key at the time of check-in and must not 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 rooms located 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 necessary, such as 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 are presented in this policy.

1. Distribution, use, or possession of any illegal drug or controlled substance.
2. Possession and/or consumption of alcoholic beverages by individuals under 21 years of age.
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. Assessments receive information about substance abuse and abuse and about relevant University services at an orientation program preceding their enrollment.

WEAPONS POSSESSION

The unauthorized possession or use of firearms, fireworks, and explosive substances or compounds, and other dangerous substances or compounds, and other lethal weapons is prohibited on University property or in University-owned property. Authorized use is confined to such specific situations as Reserve Officer Training Corps (ROTC) weapons training and police officers.

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 steps. For example, although the campus is well-lighted, an individual - male or female - may feel more comfortable using the University Police escort service when the residence halls are unlocked at night. Room doors should be locked at night and when the room is unoccupied. Valuable items such as stereo, cameras, and televisions should be marked with engraving 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 report 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 GUARANTEE

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 or acquaintance rape, you will receive the following services from the Department of Public Safety guarantees you the following:

1. You will be free from being harassment or any interference from the University Police or campus security personnel.
2. You will not be pre-judged, nor blame anyone for what occurred.
3. Your complaint will be handled with sensitivity, understanding and professionalism.
4. If you feel more 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 that you need.
6. We will assist you with contacting a counselor and make available other resources to help you through this process.

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 on the progress of the investigation and/or prosecution.

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.

Your complaint will not 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, 1998

APPENDIX B

SEXUAL ASSAULT; STATEMENT OF GUIDELINES, PROGRAMS, AND PREVENTION

Western Michigan University recognizes that sexual assault is a serious social problem that occurs among college students as well as in 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 growth can occur.

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 WMU's 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 also widely 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
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.

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.

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 bring 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 from future victimization by helping public safety officers apprehend the assailant. A police report also maintains the victim's future options 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 University 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 general 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 Sindecuse 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 F's Resources and Services, 387-2995. Sexual assault victims may request special academic considerations 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.-5:00 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 of 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 will be given a penalty appropriate to the offense. Possible sanctions range from a reprimand to expulsion from the University.

RESPONDING TO SUPPORT AND ASSISTANCE IN KALAMAZOO

MEDICAL CARE

Bronson Methodist Hospital, 252 East Lovell, 341-6286
24-hour emergency care; rape evidence exam.
Borgess Medical Center, 1521 Gull Road, 383-4815
24-hour emergency care; rape evidence exam.
Planned Parenthood of South Central Michigan, 4201 West Michigan, 372-1200

Testing and treatment for pregnancy and STDs; no emergency or trauma care; rape evidence exam.

Sindecuse Health Center, WMU, 387-3290
Testing and treatment for pregnancy and STDs; emotional support and referral for other assistance; no emergency or trauma care; no rape evidence exam.

COUNSELING SERVICES

YWCA 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.

A list of other counselors and psychologists in the Kalamazoo area experienced in working with victims of sexual assault is available from the YWCA Sexual Assault Program, the WMU Sexual Assault Victim Advocate, and the Sindecuse Health Center.

INFORMATION, SUPPORT, ADVOCACY

Sexual Assault Victim Advocate, Women's Resources and Services, A331 Elsworth 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, 386-8677
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, 387-2150
Administers 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 Deither H. Haanick, 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.
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.

Capstone course or experience
A culminating holistic experience designed to review and more broadly understand the major issues, themes, theories, and research findings of the student's discipline, often to enable the student to examine the relationship of the discipline to other areas.

Center
An organizational unit formed for purposes of linkage and visibility, focused on a theme, issue, or set of skills. A Center does not offer degree programs but may, on rare occasions, offer a course or courses.

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, or courses, related in some way to courses in a major. Cognates may be, and often are, courses outside the department of the degree program.

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

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 includes the level of work. The second digit indicates an area of study within the series or level. The third indicates the specific course number in each area and each series. Undergraduate courses are numbered from 100 through 499. Graduate courses and advanced undergraduate courses are numbered 600 through 799. Courses numbered 500 through 599 are for graduate and advanced undergraduate students.

Credit
A unit of academic credit measured in semester hours or quarter hours. One credit hour usually represents one hour of class time per week. See also "semester hour."

Credit hour
A unit of academic credit measured in semester hours or quarter hours. One credit hour usually represents one hour of class time per week. See also "semester hour."

Credit load
The total number of credits for which a student registers during a semester or session.

Curriculum
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.

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.

Field experience, practicum, work experience, co-op
Field experience: Actual practice, often away from the college campus, in a practical or service situation. In a teacher education...
program, it is usually conducted in schools. Practicum: 1) A course of instruction aimed at closely relating the study of theory and practical experience, both usually carried on simultaneously; 2) an academic exercise closely relating the study of theory and similar activity through such procedures as role-playing, recorded interviews, abstraction, analysis, and supervisory evaluation with interviewing techniques. Work experience, co-op, or internship: A sponsored learning experience in an occupational area for persons preparing for full-time employment, conducted in connection with a course of study, where the students spend a part of their time on an actual job in a school, business, or industry.

Cooperative education: A program for persons enrolled in a school that provides for parallel or alternative study in school with a job in industry or business, the two experiences being so planned and supervised cooperatively by the school and the employer that each contributes definitely to the students' development in their chosen occupation. Cooperative program: An organizational pattern of instruction which involves regularly scheduled employment and which gives students an opportunity to apply classroom learning.

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 students preparing for full-time employment, both usually carried on a program, it is usually conducted in schools. Practicum: 1) A course of instruction aimed at closely relating the study of theory and practical experience, both usually carried on simultaneously; 2) an academic exercise closely relating the study of theory and similar activity through such procedures as role-playing, recorded interviews, abstraction, analysis, and supervisory evaluation with interviewing techniques. Work experience, co-op, or internship: A sponsored learning experience in an occupational area for persons preparing for full-time employment, conducted in connection with a course of study, where the students spend a part of their time on an actual job in a school, business, or industry.

Cooperative education: A program for persons enrolled in a school that provides for parallel or alternative study in school with a job in industry or business, the two experiences being so planned and supervised cooperatively by the school and the employer that each contributes definitely to the students' development in their chosen occupation. Cooperative program: An organizational pattern of instruction which involves regularly scheduled employment and which gives students an opportunity to apply classroom learning.

Gate course: A course in fundamentals in which a student must achieve a grade of "C" or "Credit" in order to qualify for enrollment in upper division courses of a curriculum.

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 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 beyond the control of the student. Student must be passing the course to be eligible for an "I."

Independent studies or readings courses: Independent studies or readings courses are courses in which a contract is developed between a faculty member and a student to complete research in, or readings on, a specific topic. The student is responsible for proposing the topic and contacting the appropriate faculty member.

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

Institute: An organizational unit similar in nature to a Center, as defined above, but which is degree-granting. Typically an Institute will be interdisciplinary. Course work for a degree offered through an Institute may include some offered by the Institute itself but will be primarily comprised of courses in various disciplines/Departments already in existence.

Intelectual 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.

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

Multi-topics or "umbrella" course: A variable topic, variable credit course that focuses on a current or a special interest in a specific field or academic area. The course may be repeated for credit with different topics.

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.

School: A single-discipline organizational unit which has an identification in the public mind beyond that of a department. Schools may have significant subdivisions such that students will apply for admission and take degrees through the subdivision rather than through the central unit as a whole.

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
A unit of academic credit usually meaning the pursuit of a subject for one period a week for one semester. See also "credit hour."

Senior institution
An institution of higher learning offering baccalaureate programs. Western Michigan University is a public senior institution; a minimum of sixty hours toward the bachelor's degree must be completed at a senior institution.

Session
A unit of time, 7 1/2 weeks long, in the academic calendar.

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.

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 definitions
Center: An organizational unit formed for purposes of linkage and visibility, focused on a theme, issue, or set of skills. A Center will frequently be interdisciplinary in nature. A Center does not offer degree programs but may, on rare occasions, offer a course or courses. Institute: An organizational unit similar in nature to a Center, as defined above, but which is degree-granting. Typically an Institute will be interdisciplinary. Course work for a degree offered through an Institute may include some offered by the Institute itself but will be primarily comprised of courses in various disciplines/departments already in existence. School: A single-discipline organizational unit which has an identification in the public mind beyond that of a department. Schools may have significant subdivisions such that students will apply for admission and take degrees through the subdivision rather than through the central unit as a whole.

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 "X" for that course; the "X" grade carries no honor points and affects the GPA in the same manner as an "E" or failing grade.
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Kawashima, Joseph A., 1998, Associate Professor of Electrical and Computer Engineering
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Kennedy, James H., 1994, Assistant Professor of Community Health Sciences
B.A., M.A., Western Michigan

Kennedy, Kenneth F., 1986, Associate Professor of Finance and Commercial Law
B.S., M.S., Ph.D., Illinois

Kern, William S., 1987, Associate Professor of Economics
B.A., Florida International; M.S., Louisiana State; Ph.D., Colorado State

Kestetter, Mark Charles, 1977, Associate Professor of Political Science
B.A., M.A., Western Michigan

Klaas, Jean, 1990, Adjunct Associate Professor of Economics
B.A., George Washington; M.A., Delaware; Ph.D., North Carolina

King, Donald E., 1966, Professor of Art
B.A., California College of Arts and Crafts; M.F.A., Mills College

Kingsley, Marcia, 1990, Professor University Libraries
B.A., Manhattanville; M.A., Duke; M.S., North Carolina

Kracofe, Norman M., 1986, Professor and Director, Counseling and Testing Center
B.A., Manchester College; M.A.; Western Michigan; Ph.D., Temple

Kline, Kathleen, 1997, Assistant Professor of Mathematics and Statistics
B.A., M.A., Ed.D., Michigan

Knecht, Matthew, 1996, Assistant Professor of Theatre
B.S., Baker; M.F.A., Kansas City

Kniffli, Renata, 1987, Professor of Music
Ung Academic and Violin Department, K. Szymanski Liceum (Warsaw); Post-graduate Diploma, Royal College of Music (London); Artist Diploma, Cleveland Institute of Music

Kniffli, Thomas, 1987, Professor of Music
B.M., Cleveland Institute of Music; M.M., Akron; Artist Diploma, Academia Chigiana (Italy)

Kobrak, Peter, 1973, Professor of Public Affairs and Administration
B.A., Oberlin; M.S., Brandeis; Army, Temple

Kolenda, Scott, 1999, Assistant Professor of Psychology
B.A., M.S.; Wisconsin; M.A.; Yale; Ph.D., Johns Hopkins

Kolin, Scott H., 1997, Assistant Professor of Geography
B.A., Duke; M.A., Auburn

Kominz, Michelle A., 1997, Associate Professor of Geosciences
B.A., Colby College; M.S., Rhode Island; Ph.D., Columbia

Korista, Kirk, 1997, Assistant Professor of Physics
B.S., Illinois (Urbana-Champaign); Ph.D., Ohio State

Korth, Christopher M., 1994, Professor of Finance and Commercial Law
B.A., Maryville; M.B.A., Detroit; B.A., Indiana

Koutnica, Dyonisios L., 1976, Associate Professor of Computer Science
B.A., Athens; M.S., Ph.D., Pennsylvania

Kraemer, Ronald D., 1967, Professor of Sociology
B.A., Toledo; M.A., Ph.D., Ohio State

Krawutschke, Peter W., 1967, Professor of German
B.A., ABITL, Goethe Gymnasium Karlsruhe (Germany)

Kretovice, Joseph, 1996, Professor of Teaching, Learning, and Leadership
B.S., Ohio; Ed. M., Bowling Green; Ph.D., Miami (Ohio)

Kreutz, Jerry G., 1983, Professor of Accountancy
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B.Sc., B.A., Bangalore; M.B.A., Western Carolina; D.B.A, Tennessee

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Kuersten, Ashlyn, 1997, Assistant Professor of Political Science and of Women's Studies
B.A., Louisville; M.A., University of South Carolina

Kuwaj, Daniel, 1996, Associate Professor of Mechanical and Aeronautical Engineering
M.S., D.Sc., Warsaw; Ph.D., Polish Academy of Sciences (Warsaw)

Kuzn, Quentin P., 1987, Adjunct Assistant Professor of Community Health Services
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Academic Affairs and Professor of Asian and Middle Eastern Languages and Comparative Religion
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Lecture, Bernard M., 1969, Associate Professor of Nursing
B.S., Grand Valley State; M.S.N., Michigan State; Ph.D., Western Michigan

Lange, Mary, 1982, Assistant Professor of Nursing
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Larson, Robert R., 1970, Professor of Mathematics and Statistics
B.S., Pennsylvania State; M.S., Western Michigan; Ph.D., Florida State

Lamberson, Ronald L., 1989, Professor of Industrial and Manufacturing Engineering
B.S., General Motors Institute; M.S., North Carolina State; Ph.D., Texas A&M

Lander, Robert, 1989, Associate Professor of Managerial HR
B.S., Pepperdine; Ph.D., Michigan State

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B.S., Ohio; M.S., SUNY-Albany; Ph.D., Arkansas; C.P.A., Michigan and New York

Laron, Robert, 1990, Assistant Professor of English
B.A., Macalester; M.A., Indiana

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B.S., M.S., Minnesota; M.A., Stanford; Ph.D., Purdue

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Latterell, Brigid, 1992, Professor of Biology
E.S., B.A., Michigan Technological; M.S., Western Michigan; Ph.D., Michigan State

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B.A., M.A., Philadelphia; Ph.D., Louisiana State

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Lyczner, Vincent, 1996, Assistant Professor of Anthropology
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Lydall, David J., 1997, Professor of Industrial and Manufacturing Engineering
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B.P., Bombay; Ph.D., Utah

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B.S., M.S., Wisconsin

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B.Com., AIH Shamas University (Egypt); M.B.A., Siena College; Ph.D., St. Louis

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