Western Michigan University

Undergraduate Catalog
Kalamazoo, Michigan
1995 - 1997

Western Michigan University is located in Kalamazoo, midway between Chicago and Detroit. Three major highways, Amtrak, commercial airlines, and numerous bus routes connect the city with other midwestern cities. The population of Kalamazoo is 80,277. Kalamazoo County has a population of 223,400.

The provisions of this catalog are not an irrevocable contract between the student and the University. The University reserves the right to change any provision or requirement at any time within the student’s attendance. Such changes may include 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. Every reasonable effort will be made to permit students to complete programs or course work which is as compatible as possible with that which was altered or discontinued. The University further reserves the right to ask the student to withdraw for cause at any time.

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

Western Michigan University retains the right to rescind any WMU degree which was improperly obtained. Before taking any such formal action, however, the University will provide appropriate due process rights to the degree holder.

It is the policy and commitment of Western Michigan University not to discriminate on the basis of race, sex, age, color, national origin, height, weight, marital status, sexual orientation, religion, handicap, or Veteran status in its educational programs, student programs, admissions, or employment policies. Western Michigan University complies with all requirements of Title VII of the Civil Rights Act of 1964, Title IX of the 1972 Amendments, Executive Order 11246 as amended, and Section 504 of the Rehabilitation Act of 1973, and all other pertinent state and federal regulations.

Changes in administration and instruction may be made after the publication date.
**General Information**

4 • Glossary of Terms
6 • About Western Michigan University
6 • Mission of the University
7 • Accreditation
8 • For More Information, Contact...
9 • Physical Facilities and Campus Map
11 • Admission Policies and Procedures
11 • Regular Degree Bound Students
12 • Special Admission Programs
13 • Nontraditional Admission Programs
13 • Readmission
14 • Student Fees
14 • Fees
14 • Fee Revisions
14 • Complete Withdrawal From All Courses
14 • Refund Schedule
14 • Refunds
14 • Residency
15 • Full-Time Student Status
16 • Financial Assistance and Scholarships
16 • Federal, State of Michigan, and Western Grant, Employment and Loan Opportunities Based on Need
16 • Financial Assistance Procedures
17 • Financial Assistance Programs
17 • Refund Policy
18 • Federal and Western Loan and Employment Opportunities Not Based on Need
19 • Scholarship Assistance
30 • Academic Policies and Procedures
30 • University Requirements
30 • Intellectual Skills Requirements
31 • Computer Usage Requirement
31 • University Assessment Requirement
31 • Foreign Language Requirement
31 • General Education Requirements
32 • General Education Requirement for Transfer Students
33 • Major and Minor Requirements
33 • Academic Advising
33 • Freshman Graduation Rates
34 • Registration, Records, and Regulations
34 • Registration
34 • Academic Regulations
35 • Grading
36 • Credit By Examination
36 • Records
38 • Services for Students
38 • Academic Skills Center
38 • Career Education
39 • Career Services
39 • Counseling Center
39 • Disabled Students
39 • Housing
40 • International Student Services
40 • Internships
41 • Martin Luther King, Jr. Program
41 • Minority Affairs
41 • Off-Campus Life
41 • Religious Activities
41 • Sara Swickard Preschool
42 • Sindecuse Health Center
43 • Speech, Language, and Hearing Services
43 • Student Life
44 • Student Directory
44 • Student Employment Referral Service
44 • Student Volunteer Services
44 • Testing and Evaluation Services
44 • University Computing Services
45 • University Ombudsman
45 • Veterans’ Assistance
45 • Women’s Resources and Services
46 • University Services
46 • Archives
46 • Athletics (Intercollegiate)
46 • External Affairs
46 • Faculty Senate
47 • Libraries, University
48 • Media-related Services
48 • Musical Activities
48 • On-line Campus Kiosk
48 • Parking
48 • Police
49 • Publications
49 • Radio
49 • Substance Abuse Services
49 • Theatre
49 • University Recreation Programs and Facilities
51 • Annual Security Report
54 • Student Rights and Responsibilities
54 • Student Academic Rights and Responsibilities
56 • Family Educational Rights and Privacy Act
57 • Sexual Harassment and Sexism
57 • Student Conduct
57 • President’s Statement on Racial and Ethnic Harmony
59 • Degrees and Curricula
59 • Bachelor’s Degrees
59 • Graduate Degrees
59 • Certificates
60 • Undergraduate Curricula and Approved Majors
62 • Programs Requiring Major and Minor Slips
64 • Student Planned Major
64 • General University Studies
64 • Preprofessional Programs

**Programs of Study**

66 • The Lee Honors College
67 • Office of International Affairs
71 • Military Science
73 • The University Curriculum
74 • College of Arts and Sciences
78 • Interdisciplinary Programs
87 • Department of Anthropology
89 • Department of Biological Sciences
93 • Department of Chemistry
96 • Department of Communication
101 • Department of Comparative Religion
103 • Department of Computer Science
106 • Department of Economics
108 • Department of English
115 • Department of Foreign Languages and Literatures
121 • Department of Geography
125 • Department of Geology
129 • Department of History
134 • Department of Mathematics and Statistics
139 • Department of Philosophy
142 • Department of Physics
145 • Department of Political Science
150 • Department of Psychology
153 • School of Public Affairs and Administration
154 • Department of Science Studies
157 • Department of Sociology
162 • Haworth College of Business
168 • Department of Accountancy
169 • Department of Business Information Systems
171 • Department of Finance and Commercial Law
173 • Department of Management
174 • Department of Marketing
## Course Reference

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountancy (ACTY)</td>
<td>166</td>
</tr>
<tr>
<td>Aeronautical Engineering (AAE)</td>
<td>232</td>
</tr>
<tr>
<td>Anthropology (ANTH)</td>
<td>87</td>
</tr>
<tr>
<td>Art (ART)</td>
<td>243</td>
</tr>
<tr>
<td>Arts and Sciences (A-S)</td>
<td>77</td>
</tr>
<tr>
<td>Aviation Sciences (AVS)</td>
<td>213</td>
</tr>
<tr>
<td>Biological Sciences (BIOS)</td>
<td>90</td>
</tr>
<tr>
<td>Black Americana Studies (BAS)</td>
<td>78</td>
</tr>
<tr>
<td>Blind Rehabilitation and Mobility (BLRH)</td>
<td>266</td>
</tr>
<tr>
<td>Business (Haworth College of) (BUS)</td>
<td>167</td>
</tr>
<tr>
<td>Business Information Systems (BIS)</td>
<td>169</td>
</tr>
<tr>
<td>Career and Technical Education (CTE)</td>
<td>189</td>
</tr>
<tr>
<td>Chemistry (CHEM)</td>
<td>93</td>
</tr>
<tr>
<td>Communication (COM)</td>
<td>98</td>
</tr>
<tr>
<td>Community Health Services (CHS)</td>
<td>266</td>
</tr>
<tr>
<td>Computer Science (CS)</td>
<td>104</td>
</tr>
<tr>
<td>Construction Engineering, Materials Engineering, and Industrial Design (CMD)</td>
<td>217</td>
</tr>
<tr>
<td>Consumer Resources and Technology (CRT)</td>
<td>186</td>
</tr>
<tr>
<td>Counselor Education and Counseling Psychology (CECP)</td>
<td>189</td>
</tr>
<tr>
<td>Dance (DANC)</td>
<td>249</td>
</tr>
<tr>
<td>Economics (ECON)</td>
<td>107</td>
</tr>
<tr>
<td>Education and Professional Development (ED)</td>
<td>182, 189</td>
</tr>
<tr>
<td>Educational Leadership (EDLD)</td>
<td>192</td>
</tr>
<tr>
<td>Electrical and Computer Engineering (ECE)</td>
<td>221</td>
</tr>
<tr>
<td>Employee Assistance Programs (EAP)</td>
<td>268</td>
</tr>
<tr>
<td>Engineering and Applied Sciences (College of) (ENGR)</td>
<td>210</td>
</tr>
<tr>
<td>English (ENGL)</td>
<td>111</td>
</tr>
<tr>
<td>Environmental Studies (ENVS)</td>
<td>155</td>
</tr>
<tr>
<td>Finance and Commercial Law (FCL)</td>
<td>171</td>
</tr>
<tr>
<td>French (FREN)</td>
<td>116</td>
</tr>
<tr>
<td>Geography (GEOG)</td>
<td>122</td>
</tr>
<tr>
<td>Geology (GEOI)</td>
<td>127</td>
</tr>
<tr>
<td>German (GER)</td>
<td>117</td>
</tr>
<tr>
<td>Gerontology (GRN)</td>
<td>269</td>
</tr>
<tr>
<td>Greek (GREK)</td>
<td>118</td>
</tr>
<tr>
<td>Health and Human Services (HHS)</td>
<td>266</td>
</tr>
<tr>
<td>History (HIST)</td>
<td>130</td>
</tr>
<tr>
<td>Holistic Health Care (HOL)</td>
<td>267</td>
</tr>
<tr>
<td>Honors (HNRS)</td>
<td>66</td>
</tr>
<tr>
<td>Industrial and Manufacturing Engineering (IME)</td>
<td>226</td>
</tr>
<tr>
<td>Interdisciplinary (GENL)</td>
<td>156</td>
</tr>
<tr>
<td>Japanese (JPNS)</td>
<td>118</td>
</tr>
<tr>
<td>Language (LANG)</td>
<td>116</td>
</tr>
<tr>
<td>Latin (LAT)</td>
<td>118</td>
</tr>
<tr>
<td>Latvian (LATV)</td>
<td>118</td>
</tr>
<tr>
<td>Linguistics (LING)</td>
<td>120</td>
</tr>
<tr>
<td>Management (MGMT)</td>
<td>173</td>
</tr>
<tr>
<td>Marketing (MKTG)</td>
<td>174</td>
</tr>
<tr>
<td>Mathematics and Statistics (MATH)</td>
<td>136</td>
</tr>
<tr>
<td>Mechanical Engineering (ME)</td>
<td>233</td>
</tr>
<tr>
<td>Medieval (MDVL)</td>
<td>84</td>
</tr>
<tr>
<td>Military Science (MLSC)</td>
<td>72</td>
</tr>
<tr>
<td>Music (MUS)</td>
<td>255</td>
</tr>
<tr>
<td>Nursing (NUR)</td>
<td>272</td>
</tr>
<tr>
<td>Occupational Therapy (OT)</td>
<td>275</td>
</tr>
<tr>
<td>Paper and Printing Science and Engineering (PAPR)</td>
<td>237</td>
</tr>
<tr>
<td>Philosophy (PHIL)</td>
<td>140</td>
</tr>
<tr>
<td>Physical Education, General (PEGN)</td>
<td>201</td>
</tr>
<tr>
<td>Physician Assistant (MDSC)</td>
<td>277</td>
</tr>
<tr>
<td>Physics (PHYS)</td>
<td>143</td>
</tr>
<tr>
<td>Political Science (PSCI)</td>
<td>148</td>
</tr>
<tr>
<td>Professional Health, Physical Education, and/or Recreation (500 level) (PEGR)</td>
<td>199</td>
</tr>
<tr>
<td>Professional Health, Physical Education, and/or Recreation (Undergraduate) (PEPR)</td>
<td>198</td>
</tr>
<tr>
<td>Psychology (PSY)</td>
<td>151</td>
</tr>
<tr>
<td>Public Administration (PADM)</td>
<td>153</td>
</tr>
<tr>
<td>Religion (REL)</td>
<td>101</td>
</tr>
<tr>
<td>Russian (RUSS)</td>
<td>119</td>
</tr>
<tr>
<td>Science (SCI)</td>
<td>156</td>
</tr>
<tr>
<td>Social Work (SWRK)</td>
<td>280</td>
</tr>
<tr>
<td>Sociology (SOCI)</td>
<td>158</td>
</tr>
<tr>
<td>Spanish (SPAN)</td>
<td>119</td>
</tr>
<tr>
<td>Special Education (SPED)</td>
<td>206</td>
</tr>
<tr>
<td>Specialty Program in Alcohol and Drug Abuse (ADA)</td>
<td>269</td>
</tr>
<tr>
<td>Speech Pathology and Audiology (SPPA)</td>
<td>283</td>
</tr>
<tr>
<td>Theatre (THEA)</td>
<td>263</td>
</tr>
<tr>
<td>Translation (TRNS)</td>
<td>121</td>
</tr>
<tr>
<td>University (UNW)</td>
<td>73</td>
</tr>
<tr>
<td>Women's Studies (WMS)</td>
<td>85</td>
</tr>
</tbody>
</table>
Glossary of Terms

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

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

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

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

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

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

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

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

Class standing
A classification based on the number of credit hours earned which indicates the level of a student:
- Freshman: A student credited with 0-25 hours inclusive.
- Sophomore: A student credited with 26-55 hours inclusive.
- Junior: A student credited with 56-87 hours inclusive.
- Senior: A student credited with 88 or more hours.

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

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

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

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

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

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

Course numbering system
The course numbering system is limited to three digits. The first digit indicates the level of work. The second digit indicates an area of study within the series or level. The third indicates the specific course number in each area and each series. Undergraduate courses are numbered from 100 through 499. Graduate courses are numbered 600 through 799. Courses numbered 500 through 599 are for graduate and advanced undergraduate students.

Course
designates courses within a major.

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 course requirement. Each undergraduate candidate must complete a specified number of courses within the divisions of humanities/arts, mathematics/science, social/behavioral science, and the non-western world.

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

Emphasis
A designated group of courses within a major program.

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

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

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

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

Grade point 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 unfilled monetary obligation or other action by the University.

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

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

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

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

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

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.

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

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

Lower division
Courses at the 100-200 level, freshman or sophomore standing.

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

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

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

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

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

Phase I
The first part of a two-part registration sequence. Dates are announced each semester or session in the Directory of Classes.

Phase II
The second part of a two-part registration sequence. Dates are announced each semester or session in the Directory of Classes.

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.

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 must be completed at Western Michigan University. In addition, 10 of the last 30 credits must be completed at WMU.

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

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

Semester
A unit of time, 7 1/2 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 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 credit earned towards a bachelor’s degree; courses at the 300, 400, and 500 levels.

Withdraw
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 Director 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.
About Western Michigan University

Mission of the University

Founded 1903

President Dietrich H. Haenicke, Ph.D.

State Assisted, Co-educational
College of Arts and Sciences
School of Public Affairs and Administration
Haworth College of Business
College of Education
College of Engineering and Applied Sciences
School of Aviation Sciences
College of Fine Arts
School of Music
The Graduate College
College of Health and Human Services
School of Community Health Services
School of Nursing
School of Social Work

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.

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 Doctoral I University. The University has attracted and retained 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 opportunities for the full range of challenge and 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.

In 1915 Western Michigan University was placed on the approved list of the North Central Association of Colleges and Secondary Schools. The following year it was approved by the organization which, in time, evolved into the present National Council for Accreditation of Teacher Education. The National Council for Accreditation of Teacher Education has accredited the College of Education which includes the following programs:

- bachelor’s programs for preparation in early childhood; elementary, middle and junior high school; secondary education; and special education.
- master’s programs in early childhood, reading; teaching in the elementary school; teaching in the middle school; and health, physical education and recreation.
- master’s and doctorate programs in counselor education; science education; and special education.
- master’s, educational specialist, and doctorate programs in educational leadership.

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

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

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

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

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

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

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

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

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

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

The School of Nursing has received initial approval from the Michigan State Board of Nursing. This allows the School of Nursing to seek accreditation through the National League for Nursing at the earliest possible date (approximately April 1999).

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 Committee on Accreditation on Allied Health Education Programs.

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 Educational Standards Board of the American Speech-Language-Hearing Association and 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.
For More Information Contact . . .

Western Michigan University
Kalamazoo, MI 49008-3899
University Telephone 616/387-1000
Fax 616/387-0958

Director of Admissions and Orientation
Including Admissions, University Literature, Credit Acceptance.

Director of Career Services
Including Educational Placement, Arts and Sciences and Fine Arts Placement, Business and Industrial Placement, Health and Human Services Placement.

Dean of the College of Arts and Sciences
Dean of the Haworth College of Business

Dean of the College of Education
Including matters relating to Vocational Education.

Dean of the College of Engineering and Applied Sciences
Dean of the College of Fine Arts
Dean of the College of Health and Human Services

Dean of Continuing Education
Including Off-Campus Courses and Programs, Consultative Services to Schools; Self-instructional and Telecourse Programs; and Weekend College and Special Programs.

Controller
Business and Financial Arrangements.

Director of Counseling
Dean of The Graduate College
Dean of The Lee Honors College
Dean of Students
Including Campus Recreational Activities, Disabled Student Resources and Services, International Student Services, Off-Campus Life, Residence Hall Life, Student Life, Student Judicial Affairs.

Director of Off-Campus Life
Executive Director for International Affairs
Registrar
Including Credits, Provisional and Permanent Certification, Transcripts, Records.

Director of Registration
Including Registration, Course Time Schedules, Student I.D.'s.

Director of Residence Hall Life
Residence Hall Policies, Residence Hall Staff Hiring and Training.

Director of Student Financial Aid
Including Scholarships, Grants, Loans, and Work-Study Employment.

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

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

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

EAST CAMPUS
Brink Printing Services (12)—University print shop and duplicating service.
Campus Services Building (22)—Offices for Campus Planning, Freight, Postal, and Delivery, Purchasing, and University Stores.
East Hall (01)—Offices for the Library Archives, Department of Art, Faculty Studies, and Art Gallery.
H.O.I. Building (18)—Landscape Services.
Montague House (19)—Offices of American Association of University Professors.
North Hall (03)—Library storage, Industrial Design, Psychology.
Oakland Recital Hall (09)—Custodial Services.
Physical Plant (21)—Physical Plant Department, Trades maintenance shops, grounds crews, University garage, and Transportation Services.
Speech and Hearing Building (05)—The Speech and Hearing Building.
University Medical and Health Sciences Center (17)—Michigan State University/Kalamazoo Center for Medical Studies.

WEST CAMPUS
Bertrand Center (59)—Social and recreational facilities are provided for students and are available for other educational ventures as schedules permit. Administrative offices within the Bertrand Center include the Ombudsman, WMU United Clinics.

Aviation Building—School of Aviation.
Aviation Test Cell—Aircraft engine testing facility.

Crider Hall (27)—Departments of Chemistry, Paper Science and Engineering, and Biology and Biomedical Sciences.
Miller Auditorium (40)—Cultural center for the performing arts of music, opera, drama, and dance. The auditorium has a capacity of 3,500, with seating arranged on three levels in continental style.

Eagle Tower (50)—Faculty offices for the School of Social Work, Departments of Anthropology, Religion, and Philosophy, and the Intellectual Skills Development Program.

Fetzer Business Development Center (84)—Professional environment for management-oriented conferences, seminars, workshops, and development programs.

Friedmann Hall (67)—Offices for dean of College of Arts and Sciences. Faculty offices for Departments of Computer Science, Economics, History, Philosophy, and Political Science. WMUK-FM studios Women's Studies.

Gilmore Theatre Complex (41)—Offices and classrooms for the Department of Theatre. The University Theatre presents productions in the 600-seat Laura V. Shaw proscenium theatre, the 105-seat Zach L. York arena theatre and the 270-seat multi-form theatre.

Henry Hall (60)—College of Health and Human Services, Residence Hall.

Hoejke Hall (65)—Offices for Departments of Biological Sciences, Geography, and Occupational Therapy. Residence Hall.

Kanley Memorial Chapel (31)—Religious center, made possible through a gift from the estate of the late William Kanley, an alumnus. Opened in 1951.

Knuth Hall (69)—Instructional facility with four lecture halls and exhibit space.

Knollwood Building (39)—Department of Art, ceramic and sculpture studios.

Lee Honors College (24)—Honors College offices and classrooms.

McCracken Hall (27)—Departments of Chemistry, Paper Science and Engineering, and Biology and Biomedical Sciences.

Moore Hall (47)—Offices and classrooms for the Department of Mathematics and Statistics.

Oaklands (33)—Home of two former University presidents. Currently used for receptions and official gatherings.

Public Safety Building (51) and Annex (70)—Security, police, parking bureau.

Rood Hall (56)—Classrooms for the Departments of Physics, Geology, and Mathematics and Statistics.

Rood Tower (55)—Security, police, parking bureau.

Services for Career Services, Continuing Education, Evaluation Center, Foreign Student Affairs, International Student Services, Minority Student Services, News Services, Physician Assistant Program, Public Information, Student Employment Referral Services, University Publications, and Women's Resources and Services.

Shepard Building (77)—Department of The Performing Arts.

Shaw Library (61)—The Shaw Library.

Sindecuse Health Center (55)—Ambulatory care student health service building, Residence Hall.

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

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

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

Wood Hall (36)—Closed for Renovation.

OFF-CAMPUS
Aviation Building—School of Aviation.
Aviation Test Cell—Aircraft engine testing facility.
Kleinstuch Nature Preserve—Given in 1922 by Mrs. Caroline Hubbard Kleinstuch, this fifty-acre tract near the campus and inside the city of Kalamazoo provides instructional space for biological sciences.

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

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

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

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

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

Intramural Fields (104)—Two multipurpose recreation fields are located in Goldsworth Valley adjacent to Goldsworth Apartments. Three additional fields, located at the west end of Goldsworth Valley, are used by physical education classes and the intramural-recreational sports program.

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

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

Oakland Gymnasium (06)—Located on the East Campus, this building houses the Department of Military Science (ROTC).

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

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

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

Waldo Stadium (15)—An intercollegiate football stadium with seating for 30,000. It is used for recreation, intramural activities, and instruction, in addition to competitive athletics.
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 ACT, trend of grades throughout high school, and rank in class. 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 expected to complete the Presidents Council of Michigan Public Universities Requirements. These include four units of English, three of math (including intermediate algebra), three of social studies, and two of natural sciences. Students who are fully admitted under other requirements may still be admitted with deficiencies in Presidents Council Requirements. Academic advisors will assist students in completing the deficiencies with regular University courses during their first semester at WMU.

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

Admission to Western Michigan University is non-discriminatory.

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

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

Admission Procedures

Regular Degree Bound Students

FRESHMEN
To be considered for freshman admission, with no previous college work, students should:

1. Submit an application (available from high school counselors or the WMU Office of Admissions and Orientation) with a nonrefundable $25 application fee.
2. Have their high school send an official copy of their transcript directly to the Office of Admissions and Orientation (transcripts brought or sent by students cannot be accepted as official). Students still in high school should have a six semester (junior year) transcript sent.
3. Make arrangements to take the examinations of the American College Testing (ACT) Program with results sent directly to Western Michigan University (ACT College Code 2066). (Note: Students with superior ACT scores may apply through a simplified process. Details will be sent to those who are eligible); and
4. For those who have completed a General Educational Development (GED) Test, submit official GED scores as well as a high school transcript.

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

When to apply
Students should submit applications for fall semester during the fall preceding their enrollment (high school students may apply for freshman admission after completion of the junior year). Application by January 1 ensures full consideration for scholarships, financial aid, Honors College admission, housing, and orientation. Qualified applicants for fall semester cannot be guaranteed admission after June 1. Applicants for other terms should submit all materials no later than December 1 for winter semester, April 1 for spring semester, and June 1 for summer session.

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 University Orientation session. Two and one half day programs include placement testing, advising, course selection, meetings with various campus services, and registration for classes. Orientation Student Leaders, upperclass WMU students, assist freshmen to make friends and feel comfortable on the campus as well as to plan for a successful academic transition from high school to college. Orientation sessions for parents are held in conjunction with freshman sessions. Programs are held in the summer and just before the beginning of each term.

Information is sent automatically to all admitted students.

TRANSFERS
To be considered for admission as a transfer from another college or university, students should:

1. Submit an application (available from community college counseling offices or the WMU Office of Admissions and
Orientation) with a $25 nonrefundable application fee.
2. Request that each college attended send an official transcript directly to the Office of Admissions and Orientation at WMU (transcripts brought or sent by the student cannot be accepted as official). Failure to report all colleges attended will invalidate the application and may result in dismissal if admitted. Transfer credit will not be granted by any schools not reported. Applicants currently enrolled at another institution should have a partial transcript sent to the Office of Admissions and Orientation to facilitate admission decision and partial credit evaluation can be made to allow for advising and registration. A final transcript showing acceptable grades must be received within ten days of enrollment at Western; and
3. If transferring fewer than twenty-six college credit 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 before admission. Students whose native language is not English as a Foreign Language (TOEFL) or the Michigan English Language Assessment Battery (MELAB) for all prospective students whose native language is not English. To qualify for unrestricted full-time enrollment, a prospective student must present a TOEFL “total score” of at least 550 or MELAB “adjusted score” of at least 75 percent. To qualify for restricted full-time enrollment, a prospective student must present a TOEFL “total score” of at least 500 or MELAB “adjusted score” of at least 61 percent. Applicants who have successfully completed at least forty-five semester hours at another accredited U.S. institution may be exempted from this requirement, at the discretion of the Office of International Student Services.

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 admission 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, the Office of Admissions and Orientation will notify those eligible for further consideration as Alpha students.
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 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 UNV;
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 it is a year-round program, beginning in the freshman year, which seeks to:

1. Encourage students who would otherwise pursue a higher education to do so;
2. Provide supportive services—such as academic advising, personal counseling, tutoring, and testing—to meet each individual’s needs; and
3. Support students through completion of thirty-six credit hours at the University.

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

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

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

Program students begin during a three week summer Academy in the WMU summer session. Summer session enrollment allows students to make better adjustments to college and improves the transition from high school. Each student is assigned a peer counselor, a graduate or upperclass student who functions as friend, student evaluator, liaison, and resource person. The counselors and the full time administrative staff work in conjunction with other University departments to provide personal attention and supportive services.

The MLP 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;
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 in the Registration, Records, and Regulations section of this catalog.

Students in this PTC status may apply for degree admission after they have completed at least fifteen semester hours with at least a 2.0 grade point average. Admission to the degree program will be determined by review of performance in Western Michigan University courses.

Students who have attended another school or college within the past five years may apply for this PTC status, but must also submit transcripts from all colleges and universities attended (and high school if they have completed fewer than 26 transferable college credits or have not attended any college). Admissions to PTC status would be determined by review under the same standards used for degree admission. Students admitted through this review would be eligible to enroll in courses for which prerequisites had 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 be eligible to change to degree status at any time, providing they were in good academic standing. 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.

FOURTH YEARS

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. Students 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 GUESTS

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

PROJECT SCOPE (Senior Citizens' Opportunity Program in Education)

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

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

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

Readmission

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

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

Forgiveness policy

WMU students who apply for readmission as undergraduates after at least ten years out of higher education will be readmitted through the Office of Admissions and Orientation. They may also apply through the Office of the Registrar, to have previous Western work still applicable to their program counted toward graduation requirements without grades. The WMU grade point average will be determined from work attempted after the reentry date. All other University regulations apply.
STUDENT FEES

Fees

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

APPLICATION FEE
A non-refundable fee of $25 must accompany each new application for admission as an undergraduate student or graduate student.

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

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

- Full-time: Fall and Winter $227.50, Spring and Summer $109.50
- Part-Time: Fall and Winter $93.50, Spring and Summer $42.50

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

FLIGHT INSTRUCTION
Based on the courses taken, fees range from $800 to $2,900 per course. For specific course fee information, consult the School of Aviation Sciences.

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

LATE REGISTRATION FEE
A late registration fee of $50.00 is assessed to each new on-campus registrant starting at 12:01 a.m. the first 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.

RESIDENCE HALL ROOM AND DINING
Cost of room and dining in 1995-96 for 20 meals per week is $2.025 for fall semester and $2.072 for winter semester, per student; for 15 meals per week it is $1.982 for fall semester and $2.017 for winter semester, per student; for 10 meals per week it is $1.730 for fall semester and $1.742 for winter semester, per student. The rate for room only is $836 for the fall semester and $836 for the winter semester, per student. A first payment of $300 to be applied toward room and dining payment will be required with the signed contract before a housing assignment is made. Note: *Includes $25 deferred maintenance fee and $7 program development fee.

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

Newly admitted undergraduate students are automatically sent information about residence hall offerings for the semester they anticipate coming to the University. Individuals not enrolled at 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 a admission to the University.

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

TUITION AND FEES
Student fees are assessed on a credit hour basis. See Fee Revisions. Fees per credit hour for 1994-95 are listed below:

- Resident Undergraduate—Lower Division, $97.25
- Resident Undergraduate—Upper Division, $98.25
- Resident Graduate, $125.50
- Non-Resident Undergraduate—Lower Division, $253.75
- Non-Resident Undergraduate—Upper Division, $251.75
- Non-Resident Graduate, $307.75

Those undergraduate students who have completed fifty-six or more credit hours by the start of each semester/session will be classified Lower Division. Those undergraduate students who have completed fifty-six credit hours will be classified as Upper Division.

Fee Revisions
Fees and costs pertain to the 1994-95 academic year, except as noted, and are subject to change by action of the Board of Trustees. Questions concerning current fee schedules should be directed to the Office of the Director of Accounting Services.

Complete Withdrawal From All Courses
Students completely withdrawing 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. Students who find it impossible to be on campus to process a complete withdrawal and do not have access to touchtone phones may write to the Registrar's office, Room 3210 Seibert Administration Building, for aid in processing their withdrawal. All written requests for complete withdrawal must bear the appropriate postmark date for consideration of any refund (see Refund Policies).

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

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

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

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

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

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

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

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

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

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

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

Full-Time Student Status

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

<table>
<thead>
<tr>
<th>Semester</th>
<th>Undergraduate</th>
<th>Graduate</th>
<th>Doctoral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall/Winter Semester</td>
<td>12 hours</td>
<td>9 hours</td>
<td>6 hours</td>
</tr>
<tr>
<td>Spring/Summer Session</td>
<td>6 hours</td>
<td>5 hours</td>
<td>4 hours</td>
</tr>
</tbody>
</table>

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

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

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

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, 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 upon the 1995-96 award year criteria at the time of this edition. Should federal, state, or university regulations and procedures change for the 1995-96 and subsequent award years, the University will be responsible for administering these programs according to updated descriptions and criteria.

Federal, State of Michigan, and Western Grant, Employment, and Loan Opportunities Based on Need

Need-Based Financial Assistance

To determine eligibility for need-based assistance, students must file a Free Application for Federal Student Aid (FAFSA). The FAFSA will gather information regarding the parents’ and students’ adjusted gross income, Social Security benefits, Aid to Dependent Children benefits, Veterans Administration benefits, social services benefits, the number of family members, the number of family members in college, and, for some, family assets. The FAFSA is available at high schools and colleges. Returning students will receive a renewal FAFSA at their home address by mid-January. The amount of need-based assistance a student can receive is determined by subtracting the expected family contribution (EFC) from the cost of attendance. The cost of attendance is based on estimation of tuition, fees, books, supplies, campus housing and food, transportation, and personal expenses. Based upon the amount of the student’s financial need, the Student Financial Aid Office awards a package of grants, employment, and loans. Any scholarships, stipends, or other resources will be assessed first before awarding need-based assistance.

Federal Assistance Programs


Eligible applicants for federal assistance are:

1. Citizens or permanent residents of the United States.
2. Students enrolled at least half time, carrying a minimum of six undergraduate or four graduate credit hours each academic semester.
   For the Federal Pell Grant program, students enrolled less than half time should contact Student Financial Aid regarding possible eligibility.
3. Undergraduate students (for the Federal Pell Grant and the Federal Supplemental Educational Opportunity Grant).
4. Students who are not in default on student loan payments and who do not owe student grant refunds.
5. Students enrolled in a degree-granting curriculum at Western (not under the Permission to Take Classes—PTC/PTG— or guest student designation).
6. Students who are making satisfactory academic progress towards their degree. Contact the Student Financial Aid Office for more details.

Western Michigan University Assistance Programs

Supplemental Western Assistances and Job Opportunity Bank

Eligible applicants for University assistance are:

1. U.S. citizens or permanent residents.
2. Students enrolled for six undergraduate or four graduate credit hours each academic semester.
3. Students who are enrolled in a degree-granting curriculum at Western (not under Permission to Take Classes—PTC/PTG—or as a guest student).
4. Students who are making satisfactory academic progress towards their degree. Contact the Student Financial Aid Office for more details.

Financial Assistance Procedures

To apply for a Federal Pell Grant
Federal Supplemental Educational Opportunity Grant
Federal Direct Stafford/Ford Loan (subsidized and unsubsidized)
Federal Perkins Loan
Federal College Work Study Program
Michigan Educational Opportunity Grant
Michigan Competitive Scholarship
Michigan Adult Part-time Grant
Michigan College Work Study Program or Supplemental Western Assistance Grant

Eligible applicants for State of Michigan assistance are:

1. U.S. citizens or permanent residents who are Michigan residents.
2. Students enrolled at least half time, carrying a minimum of six undergraduate or four graduate credit hours each academic semester.
   For the Michigan Adult Part-Time Grant program, students enrolled for three to eleven hours a semester.
3. Undergraduate students.
4. Students who are enrolled in a degree-granting curriculum at Western (not under the Permission to Take Classes—PTC/PTG— or guest student designation).
5. Students who are making satisfactory academic progress towards their degree. Contact Student Financial Aid Office for more details.

State of Michigan Assistance Programs


Eligible applicants for State of Michigan assistance are:

1. U.S. citizens or permanent residents who are Michigan residents.
2. Students enrolled at least half time, carrying a minimum of six undergraduate or four graduate credit hours each academic semester.
   For the Michigan College Work Study program, both undergraduate and graduate students.
3. Undergraduate students.
4. Students who are enrolled in a degree-granting curriculum at Western (not under the Permission to Take Classes—PTC/PTG— or guest student designation).
5. Students who are making satisfactory academic progress towards their degree. Contact Student Financial Aid Office for more details.

Michigan Competitive Scholarship—

Students who authorize their FAFSA to be forwarded to the Michigan Competitive Scholarship program and who meet the other...
To receive payment, eligible students must
The student's name and social security
Financial Assistance Award Letter
This program entitles eligible undergraduate
to the following:
1. Signed copies of the parents’ and the
student’s federal 1040s (all pages and
records) and W-2 forms for the year
immediately preceding the award year.
2. Self-Supporting Students
Supplemental Western Assistance Grant
This federal program funds employment
opportunities for needy undergraduate and
graduate students who are residents of the
state of Michigan.
Federal College Work Study
This federal program funds employment
opportunities for needy undergraduate
and graduate students who are residents of the
state of Michigan.
Michigan College Work Study
This state program funds employment
opportunities for needy undergraduate and
graduate students who are residents of the
state of Michigan.
JOB-Western’s Job Opportunity Bank
This University program funds employment
opportunities for needy undergraduate
students.
Federal Perkins Loan
Under this program, students may
borrow up to $8,000 through their sophomore
year and up to $20,000 through their
undergraduate career. Graduate students
may borrow a maximum of $40,000 including
undergraduate loans. The interest is 5 percent.

Michigan Educational Opportunity Grant
This state program, designed to assist
exceptionally needy undergraduate students
who are residents of the state of Michigan,
provides grants of $200 to $1,000 for each
academic year.
Michigan Competitive Scholarship Program
This state program provides up to $1,200 for
the fall and winter semesters. Eligibility is
based on the ACT score and financial need.
Recipient must be undergraduate students and
must use the ten semesters of scholarship eligibility
within ten years after graduation from high
school.
Michigan Adult Part-time Grant
This state program, designed to assist
exceptionally needy undergraduate students
who are Michigan residents, provides grants of
up to $600 for each academic year, with a
limit of two years or twenty-four months.
Recipient must be self-supporting, non-traditional students who are attending
college on a part-time basis.

Financial Assistance Programs
Federal Pell Grant
This program entitles eligible undergraduate
students to grants of $400 to $2,940 for
each academic year.
The student’s Expected Family
Contribution (EFC), the cost of education
figures, and the number of hours for which
the student registers (half time, three-quarter
time, or full time) determine the amount of
the student’s Federal Pell Grant.
Federal Supplemental Educational
Opportunity Grant
This program, designed for exceptionally
needily undergraduate students, provides
grants of $200 to $1,000 for each academic
year.

Refund Policy
For students on financial aid who completely
withdraw from all of their classes, the
following refund policy is in effect:
1. Accounts Receivable will notify Student
Financial Aid of a student’s withdrawal
date. The percentage amount of the tuition
and fees refund and the calculated
housing refund will be determined based
upon Western Michigan University’s
institutional policy. Exception: First time
Western enrollees will also have their
refund calculated using a statutory refund
formula (pro-rata) if they withdraw during
the first nine weeks of the first four weeks of a semester. The refund
amount which is greater will be used.
2. Student Financial Aid will then determine
of the total institutional charges (tuition,
fees, room and board), what portion
should be retained by the institution using
the appropriate refund calculations.
3. The portion remaining, after deduction
of any unpaid charges, will be used to repay
financial assistance already applied to the

July, 1987, or later, repayment of the loan
plus interest begins nine months after
half-time enrollment ends. The minimum
repayment is $40 a month.

Contact Western’s Federal Perkins Loan
Office for details about cancellation,
forbearance, and deferment provisions.

Federal Direct Stafford/Ford Loan
(subsidized and unsubsidized)
The following chart summarizes loan limits for
Federal Direct Stafford/Ford Loans and
Federal Direct Unsubsidized Stafford/Ford
Loans.

Maximum Loan Amount for a Full Academic Year (July 1-June 30) (Maximum combined
subsidized and unsubsidized loan amounts)

Dependent Student
First-year undergraduate, $2,625 Second year
undergraduate, $3,500 Third and fourth
undergraduate, $5,500 Graduate/Professional, N/A
Independent Student
First-year undergraduate, $6,625 Second year
undergraduate, $7,500 Third and fourth year
undergraduate, $10,500 Graduate/Professional, $18,500

Borrowers pay a 4 percent origination fee
(deducted from the amount of the loan when
disbursed).

Repayment begins six month after
graduation or six months after half-time status
ends. The interest rate for first-time borrowers
on or after July 1, 1994 is variable and
capitalized at 6.25 percent. For 1994-95, the
interest rate was 7.43 percent. A student may
be eligible for a variety of deferment,
forbearance, and cancellation options.

Contact the Direct Loan Servicing Center at
800-948-0979 for details.

Federal legislation provides that a student
borrower pay no interest while in attendance
at least half time at an eligible institution and
for six months thereafter. For the
unsupervised Federal Direct Stafford/Ford
Loan—The terms and conditions are the same as for subsidized Federal Direct
Stafford/Ford Loans, except that the
borrowers are responsible for interest that
accrues while they are in school. Students
have the option of paying the interest while in
school or letting the interest accrue, which
increases the amount borrowed. This program
is open to students who may not qualify for
subsidized Federal Direct Stafford/Ford Loans
or who may qualify for unsubsidized
Federal Direct Stafford/Ford Loans.
student’s University account or will be refunded to the student. First, Student Financial Aid will repay loan programs; then other Federal, State, and University programs, and finally, if there is a balance, the amount will be returned to the student.

4. In addition, if the financial assistance amount is greater than the student’s institutional charges and the difference does not include loans, an additional calculation will be performed to determine if the student must repay any financial assistance.

When withdrawing from the University, the student must begin the process at the Academic Records Office so that grades of “E” are not recorded. When withdrawing from classes, students should also keep in mind that they may have to begin loan repayment.

Federal and Western Loan and Employment Opportunities Not Based on Need

Federal opportunities include: Federal Direct PLUS Loan, Federal Direct Unsubsidized Stafford/Ford Loan, and Paul Douglas Teacher Scholarship programs. Eligible applicants for federal opportunities include:

1. U.S. citizens or permanent residents.
2. Students who are not in default on student loan payments and who do not owe student grant refunds.
3. For the Federal Direct PLUS Loan and the Federal Direct Unsubsidized Stafford/Ford Loan programs, students must also be enrolled at least half time, carrying a minimum of six undergraduate or four graduate credit hours a semester (fall/winter), and three undergraduate or two graduate credit hours a session (spring/summer).
4. For the Paul Douglas Teacher Scholarship program, students must be enrolled full time and must have graduated in the top ten percent of their high school class. (Students who have earned a GED may also apply.) Applicants must be U.S. citizens or permanent residents who are Michigan residents.

Western opportunities include: Student Employment Referral Service, Professional Police Services, the Academic Management Services Plan, Manufacturers Hanover Educational Finance Programs, and the Short-Term Loan Program.

Eligible applicants are:

1. Western students who are enrolled for one or more undergraduate or graduate credit hours a semester or session.
2. For the University Short-Term Loan Program, Western students who have no financial obligations outstanding to the University.

Non-Need Based Opportunities

Loans

Federal Direct Unsubsidized Stafford/Ford Loan Self-supporting graduate and undergraduate students who are not eligible or only partially eligible for a subsidized Federal Direct Stafford/Ford Loan may apply for a Federal Direct Unsubsidized Stafford/Ford Loan. Also, dependent students whose undergraduate credit hours plus a graduate credit hour total a Federal Direct PLUS Loan may see the Student Financial Aid Office to discuss the possibility of applying for a Federal Direct Unsubsidized Stafford/Ford Loan.

Students must submit a Free Application for Federal Student Aid (FAFSA) and complete their financial aid file at Western Michigan University.

Federal Direct PLUS Loan Parents of dependent undergraduate students may apply for a Federal Direct PLUS Loan. To be eligible, students must be registered at least half time, carrying six undergraduate credit hours. Parents must have no adverse credit history and may apply for loans equal to the cost of attendance minus any financial assistance. Repayment begins 60 days after the final loan disbursement. The interest rate is variable and capped at 9 percent. For 1994-95, the interest rate was 8.38 percent. Borrowers pay a 4 percent origination fee (deducted from the amount of the loan when disbursed).

Students must submit a Free Application for Federal Student Aid (FAFSA) and complete their financial aid file at Western Michigan University.

Mi-Loan

The Michigan Alternative Loan Program (Mi-Loan) provides credit-worthy students and their families an alternative source of funds. Financial institutions serve as processing agents for the Michigan Higher Education Loan Authority. Students may begin to pay up to $10,000 a year; the interest rate varies. Students must also file a Free Application for Federal Student Aid (FAFSA). Call 1-800-877-5659 for more information.

Payment Plan

The Academic Management Services Plan and Tuition Management Services Plan allow parents and students to pay tuition, fees, and on-campus housing costs directly to Western through the Accounts Receivable Office. The parent or student pays the company in monthly installments. For an application or more information, call or write:

1. Academic Management Services, Inc.
   50 Vision Blvd.
   East Providence, RI 02914
   1-800-556-6684

2. Tuition Management Systems, Inc.
   42 Valley Road
   Newport, RI 02842-6376
   1-800-722-4867

Western Short-Term Loan Program

Western’s Student Financial Aid Office provides emergency short-term loans to Western students who are enrolled for one or more credit hours. Both graduate and undergraduate students who have no financial obligations outstanding to the University may apply.

The maximum amount of the loan depends on the student’s classification and the purpose of the loan. In most cases, the maximum for a personal loan is $300, and the maximum for a tuition loan is $500. A modest simple interest rate of 5 to 7 percent is charged for most short-term loans, and the duration of the loan generally does not exceed sixty days.

The loan funds listed below have been established by University alumni, faculty, staff, and friends. Some funds specify curriculum, academic rank, or geographic location. Application must be made in person to Western’s Student Financial Aid Office.

A.A.U.W. Graduate Social Work Fund
A.A.U.W. Nursery Education Loan Fund
Academic Affairs Special Loan

Alpha Beta Epsilon, Xi Chapter, Loan Fund
Alpha Phi Alpha Fraternity
Alumni Short-Term Loan Fund
American Business Club
A. Robert Anderson Memorial Loan Fund
Associated Women Students Loan Fund
AUSCO Loan Fund
Fannie Ballow-Microbial Fund
Robert H. Barr Loan Fund
John L. Bendix Memorial Loan Fund
Albert W. Behnke
Amelia Bischoff Memorial Loan Fund
William R. and Emma Wales Brown Student Loan Fund
Ernest Burrough Rural Loan Fund
Chapman Student Loan Fund
Class of 1936 Loan Fund
College of Applied Sciences Loan Fund
Communications Arts and Sciences Loan Fund
Dorothy Dalton Loan Fund
Delta Kappa Gamma Alpha Psi Loan Fund
Delta Sigma Theta Loan Fund
Vladia and Irene Omac Loan Fund
The Gordon and Ferne Efferdink Loan Fund
Michael Finley Memorial Loan Fund
Foreign Student Aid Loan Fund
James Gardner Memorial Loan Fund
Marie Hank Loan Fund
Harris-Bingham Loan Fund
Leroy H. Harvey Memorial Loan Fund
Eunice E. Herald Home Economics Loan Fund
Deldoe M. Herman Debate Loan Fund
Hilites Buyers Guide Loan Fund
Alfred Ho Loan Fund
John C. Hoekje Loan Fund
Honors College Loan Fund
Home Economics Memorial Loan Fund
Donald Huizenga Memorial Loan Fund
Inter-Fraternity Council Loan Fund
Frank Fatzerzinger Memorial Loan Fund
Freburn 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. Kaufman Loan Fund
Jerome E. J. Keane Loan Fund
Freda and Martin Kelley
Kiwanis Educational Aid Fund
The Dr. Radford Kuykendall Memorial Loan Fund
Alice Louise Lefevre Memorial Fund
Elizabeth E. Lichty Loan Fund
Marvel F. Liddy Student Loan Fund
David E. Ling Memorial Loan Fund
Larry G. Lochner Memorial Fund
M. Dezena Loutzenhiser Short Term Loan Fund
Ray C. Lower Loan Fund
Ray C. Lower Memorial Loan Fund
Charles H. Maher Loan Fund
R. C. Mahon Foundation Loan Fund
Mildred Maloney Memorial Loan Fund
Jean G. Malmstrom Loan Fund
Mathematics Faculty Memorial Loan Fund
William McCracken Memorial Loan Fund
Chemistry
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. Nichols Memorial Loan Fund
Occupational Therapy Fund
Omnibus Loan Fund
Dr. Gerald Osborn Memorial Loan Fund
Panhandle (Grand Lake) Loan Fund
Panhandle (Detroit) Loan Fund
Panhandle WMI Council Loan Fund
Truman A. Pascoe Memorial Fund
Ray C. Pellet Memorial Loan Fund
FINANCIAL ASSISTANCE AND SCHOLARSHIPS

PIMA (Michigan Division) Loan Fund
Archie S. Potter Memorial Fund
Douglas V. Ratcliffe Memorial Loan Fund
Sophia Reed Loan Fund
Nellie N. Reid Memorial Loan Fund
Raleigh A. and Vivianne C. Robinson Memorial Loan Fund
Evalyn Underwood Rogers Loan Fund
School of Public Affairs/Administration Loan Fund
Dr. Mike L. Sebaly Short Term Loan Fund
Rotary Student Loan Fund
Marion I. Siegel Memorial Loan Fund
Marion J. Sherwood Memorial Fund
Katherine Shuffer Loan Fund
Sigma Phi Omega Bob Hayes Memorial Fund
Sigma Tau Gamma Memorial Loan Fund
James N. Slee Memorial Loan Fund
Dorothea 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
Helena Sprau Loan Fund
Elaine Louise Stevenson Student Loan Fund
Stone D.A.R. Student Loan Fund
Ron Strawser Memorial Loan Fund
Student Loan Fu Fund
Student Service Emergency Loan Fund
Marion Tamin Memorial French Loan Fund
TAPPI (Kalamazoo Valley Section) Loan Fund
Cora Yeal Loan Fund
Adrian Trimpes Distrutrive Education Loan Fund
C.N. Van Deventer Loan Fund
University Dames of WMU Loan Fund
Dr. Charles Van Riper Speech Pathology and Audiology Loan 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 Paper Technology Alumni Association Loan Fund
WMU Parents Association Loan Fund
WMU Southern California Alumni Loan Fund
Howard Wolpe Loan Fund
W. Dean Worden Loan Fund
Crystal Wheeler Memorial Loan Fund
WSA-GSAC Loan Fund

Paul Douglas Teacher Scholarship Program
This federally funded program provides college scholarships to outstanding high school graduates to enable and encourage them to pursue teaching careers at the pre-school, elementary, or secondary school level. The maximum award is $5,000 a year, not to exceed the cost of attendance. The college budgets established for determining eligibility in the Michigan Competitive Scholarship Program will be used to determine the maximum award. Preference for awards will be given to candidates who demonstrate need, but the amount of the award will not be restricted to need. Awards are limited to four years of undergraduate eligibility.

Application forms are available in late February from high schools, college financial aid offices, and education offices at colleges and universities. Students may also obtain applications from the Michigan Department of Education. In addition to submitting the application, the student must have a financial statement with the Michigan Higher Education Assistance Authority office. As an alternative, the student may submit a copy of page one of the parents' Federal Income Tax Return, Form 1040 or 1040A, for the year preceding the award year. Self-supporting students should attach a copy of page one of their own Federal Income Tax Return form for the year preceding the award year.

Employment

Student Employment Referral Service
The Student Employment Referral Service actively recruits both on- and off-campus employment opportunities. Students may review the jobs listed with the service in room A-100, Ellsworth Hall. Openings include food service and clerical positions, research, retail sales positions, and technical positions requiring computer science skills.

Regular University Employment
Students may best obtain regular University part-time employment by directly contacting the areas of the University where they wish to work. Students are employed by University departments, offices, libraries, laboratories, residence halls, and by the Bernhard Center.

Residence Hall Advisor Positions
Students who are residence hall advisors receive free room and board on campus (single room). Contact the Office of Residence Hall Life for full-time appointments, contact residence hall directors for appointments that begin winter semester.

Residence Hall Assistant Director Positions
Assistant directors receive free room and board on campus (single room) and $820 a month. Because assistant directors are responsible for the residence hall in the director's absence, the position usually requires experience as a residence hall advisor. Contact the Office of Residence Hall Life for more information.

Professional Practice Services
This service offers a variety of career-related employment opportunities. The service helps students find an existing co-op/internship program or design a program on their own and contact prospective employers. Internships may offer summer or part-time employment or may stipulate that the student attend a semester of work with a semester of school attendance. Professional Practice Services offers both paid and unpaid internships.

Students may request help from Professional Practice Services by visiting the Student Employment Referral Service in room A-100, Ellsworth Hall. Some University departments offer co-op/internship programs similar to those offered through Professional Practice Services; interested students may contact their department advisors and chairpersons.

U.S. Armed Forces Programs
The United States Armed Forces offers women and men a variety of educational assistance programs:

• The Split Training Option allows eligible high school students to attend basic training the summer after their junior year and to return for advanced individual training the summer after high school graduation. The student may then become a member of the Reserve or National Guard and while attending college receive $140 a month in addition to reserve/guard pay.
• The G.I. Bill for Reservists/National Guardsmen provides $5,040 over thirty-six months.
• The Unit Enlistment Reserve Bonus pays up to $2,000 to those who will take certain critical skills exams after enlistment.

• The Student Loan Repayment Program repays the student's Federal Stafford Loans.
• The Tuition Assistance Program repays 75 percent for individual or group courses.

For further details about these programs contact your local armed forces recruiter.

Scholarship Assistance

Most scholarships are based on merit, which includes such criteria as grade point average, major, nationality, race, handicap, gender, hobbies, work experience, religion, residence, veteran status, and athletic ability. Students may research resources through their high school counselor, college advising and financial aid officers, the library, employers, civic and social organizations, service clubs, foundations, churches, and computerized scholarship searches. This catalog lists departmental scholarships administered by Western Michigan University.

Western offers a variety of merit-based scholarship opportunities for incoming freshman and for transfer, currently enrolled, nontraditional, and graduate students.

Western Michigan University Scholarships for Beginning Freshmen

Medallion Scholarship Competition Program
Through the Medallion Scholarship Competition, the Scholarship Committee selects recipients of the Medallion Scholarship, the Board of Trustees Scholarship, the Scholars Scholarship, the Excellence Scholarship, and the Academic Scholarship. Western Michigan University offers the Scholars Scholarship to incoming freshmen who have earned a grade point average of 3.70 as computed by Western to participate in the competition. High school seniors who have a grade point average of 3.5 as computed by Western and an ACT score of 30 or above may also be selected to participate. The Scholarship Committee also considers extracurricular activities, employment history, and volunteer work.

Opening applications from the Michigan Department of Education for January 10 of their senior year of high school. Each competition participant receives either the Medallion Scholarship, the Board of Trustees Scholarship, the Scholars Scholarship, the Excellence Scholarship, or the Academic Scholarship.

Medallion Scholarship
The Medallion Scholarship, the University's most prestigious scholarship program for new freshmen, exemplifies Western's commitment to recognize and encourage superior academic achievement.

Medallion scholarships receive $25,000, awarded $6,250 each year of a four-year degree program at Western Michigan University. For 1994-1995, Western awarded sixteen Medallion Scholarships.

Some Medallions 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
Western Michigan University awards twenty Board of Trustees Scholarships each year to beginning freshmen who are not previously enrolled in a post-secondary institution. This scholarship has a current value of $16,000; $4,000 is awarded each academic year.
WMU Scholars Scholarship
This scholarship has a current value of $12,000; $3,000 is awarded each academic year.

WMU Excellence Scholarship
This scholarship has a current value of $8,000; $2,000 is awarded each academic year.

WMU Academic Scholarship
Recipients of this $4,800 scholarship receive $1,200 for each academic year.

Additional Scholarships for Entering Freshmen

Western Michigan University's Award for National Merit Scholarship Winners
Western Michigan University is an institutional member of the National Merit Scholarship Corporation and sponsors scholarships to National Merit Scholarship Finalists. Recipients are selected on the basis of national merit test scores, scholastic achievement, and high school recommendations. The Western awards $3,000 ($750 a year for four years) in addition to National Merit Scholarship and Medallion Scholarship Competition funds awarded to the student. To be eligible, students must designate Western as their first school choice with the National Merit Scholarship Corporation no later than April 1 of the year preceding the award year. This does not apply if the recipient is receiving the maximum amount as a National Merit Scholar or is receiving the $25,000 WMU Medallion Scholarship.

Higher Education Incentive Scholarship
Western Michigan University awards ten Higher Education Incentive Scholarships each year to beginning freshmen who have not previously enrolled in a post-secondary institution. This special scholarship for minority students has a current value of $16,000; $4,000 is awarded each academic year.

To be eligible, students must have a high school grade point average of 3.5 or above. The HEIS Scholarship Committee also considers the student’s extracurricular activities, employment history, and volunteer work.

Eligible students are invited to take part in the HEIS Competition on Western’s campus. Students who participate in the competition will be offered either a Higher Education Incentive Scholarship of $16,000 ($4,000 a year) or a WMU Academic Scholarship of $4,800 ($1,200 a year).

Application forms are available from the Division of Minority Affairs.

STAR Program (Students Taking Advantage of Resources), Martin Luther King, Jr. Academy participants, minority students. Contact the Division of Minority Affairs for more information.

Sponsored Scholarship for Beginning Freshmen

Edwin and Adelaide Steffen Scholarship
Funds are provided from an endowment which the Steffens established to recognize students who have graduated from Saginaw, Arthur Hill, Decatur, and L’Anse high schools. Entering freshmen may apply for this $500 one-year award shortly after being admitted to Western. This scholarship is based on financial need and a minimum high school grade point average of 3.00.

WMU Scholarships for Michigan Community College Transfer Students
A transfer student may receive only one of the following awards. For consideration, students must have completed at least 36 semester hours of transferable course work at the time of application.

WMU Distinguished Community College Scholars Award
A minimum of ten WMU Distinguished Community College Scholars Awards is given annually to transfer residents transferring to Western with an associate’s degree from a Michigan community college. Recipients of this $8,000 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. Recipients are selected by the Western Michigan University Scholarship Committee.

WMU Community College President’s Scholarship
Michigan community college presidents select the recipients of this $3,000 scholarship, which provides $1,500 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.

WMU Academic Scholarship for Transfer Students
Students who transfer to Western with a grade point average of 3.5 or above—as computed by the Western Office of Admissions and Orientation—will be eligible for a $500 scholarship for the academic year.

This scholarship is renewable, provided that the student meets credit hour and grade point criteria.

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

Phi Theta Kappa Alumni Scholarship
Transfer students who are Phi Theta Kappa members in good standing are eligible for this $2,000 ($1,000/academic year) award. A 3.5 or higher in transferable courses is required along with a recommendation by the chapter advisor. For students to be eligible, all materials necessary for admission must be received in Western’s Office of Admissions and Orientation by March 1. Recipients are selected by the Western Michigan University Scholarship Committee. The completion of an Associate’s Degree is recommended.

Senior Scholarship
Current Western Scholars for Beginning Freshmen

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 3.5 and typically have accumulated at least 60 credit hours at the time the project will begin. The program awards a $1,200 stipend for the first semester. An award may be renewed once if there is sufficient justification. While the program is administered by the Honors College, the student does not need to be a member of the Honors College in order to qualify for an award.

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

David and Priscilla Morris Scholarship
This scholarship pays tuition and fees for extremely needy undergraduate students. For application details, students may write the scholarship advisor of the Student Financial Aid Office or may make an appointment to see a Student Financial Aid advisor.

WMU Academic Scholarship
Currently enrolled Western students whose University grade point average is 3.25 or above are eligible to apply for this $500 fall/winter semester award. Western awards 4.0 grade point averages and continues awarding down to a 3.25 grade point average as long as funds are available.

Application forms are available at Western’s Student Financial Aid Office from January 1 through March 1. Students must submit their application by March 1 for the following fall/winter semester academic year.

Clifford and Ella Chapman Distinguished Senior Scholarship
This was 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 family responsibilities or other obligations while attending Western should also include their work history.

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

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

Non-Traditional Student Scholarship
Awards of $200 to $400 for adult learners who have had a significant break in education. Awards are given on the basis of need and/or scholarship.

To be eligible, undergraduate students must be enrolled for three to eleven credit hours and have a 2.5 grade point average. Graduate students must be enrolled for two to
WMU College and Departmental Scholarships

Military Science

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

General qualifications are as follows: The student must be a U.S. citizen, be enrolled as a full-time student in any major course of study leading to a baccalaureate degree, and be under twenty-five years of age on June 30 of the year in which the individual is scheduled to graduate (there are extensions to this age granted to veterans).

Scholarship boards begin in January of each year and are normally closed out at the end of February for two-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 $250 toward books while in school in session (up to $1,500 per year).

Biological Sciences

The Margaret Thomas Du Mond Scholarship—This award is established in honor of Mrs. Du Mond, an alumna of the department, by her husband, is available to upperclass biology and biomedical sciences majors with preference given to those 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 3.0, demonstrating career potential, and financial need. Contact the Biological Sciences Office in Wood Hall for information and applications.

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

The Merrill Wiseman Award—Named in honor of a distinguished teacher who was on the Biological Sciences faculty for forty years, is made annually to an outstanding student in the field of microbiology, no application is required.

Chemistry

The William McCracken Award—Named in honor of the first head of the chemistry department, is given to a senior 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 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 Analytical Award—Sponsored by the American Chemical Society, is given to a junior who is outstanding in analytical chemistry.

The Adi Kanaan Award—Named in memory of a former faculty member, is given to an outstanding junior or senior student who has made a significant contribution to the biological sciences.

The Jensen Award—This award is given to a student of junior or senior status who is outstanding in the area of biochemistry.

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

The Wall Street Journal Award—This award is given annually 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 student of junior or senior status who is outstanding in the area of biochemistry.

The Distinguished Biology Major Senior Award—This award is given to the outstanding junior or senior major in Biology, 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.

FINANCIAL ASSISTANCE AND SCHOLARSHIPS 21

English

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

The George Sprau Award in English—This award is given annually to an outstanding undergraduate student in the field of English. The award is $500, to be given to a student who demonstrates vision, insight, innovations, and strong potential for environmental education. In addition, the scholarship winner is expected to choose the recipient of an additional $500 award for a project or program in literacy education.

The Environmental Studies Scholarship—This $300 annual award is open to environmental studies majors who have completed 40 hours of courses that count toward the major with an ENVS and University GPA of 3.0 or higher. Applicants must exhibit high scholastic ability and strong potential for environmental service. Applications may be obtained from the environmental studies office.

The President’s Award for Study Abroad—The President of WMU has established an annual award of $1,500, to be given to a student 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.

The Victor Coutant Award in Classics—A generous gift in memory of Dr. Victor Coutant, professor emeritus of Latin 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 will 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 graduating class), the Prix de l’Alliance Française; the Frances E. Noble Prize for Excellence in French, German— the Prix des Jeunes; the Japanese Prize for excellence in Japanese; Latin—the Excellence in Latin Award; Russian—the Excellence in Russian Award; Spanish—several awards for excellence in Spanish.

**Herb B. Jones Scholarship in Spanish**—This annual award has been established in memory of the late Professor Jones, 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.

**Ruth Y. Kirby Scholarships in Spanish**—This endowment fund was established through the generosity of the late Ruth Kirby, former professor in the School of Education at WMU and teacher of foreign languages. The fund provides four annual awards of approximately $1,000 each to be used for the study of Spanish, either abroad or at WMU. Applicants must be Spanish majors currently enrolled at WMU. Recipients are selected by the Spanish faculty. Demonstrated academic achievement in Spanish and overall academic achievement are considered in the selection.

**Hermann E. Rothfuss Award in German**—An annual cash award for an outstanding student in German has been established in memory of Dr. Hermann E. Rothfuss, professor emeritus of German. The recipient will be selected by the faculty of the German Section of the Department of Foreign Languages and Literatures. Academic performance and contributions to German-American understanding will be considered in the selection of the student to receive the award.

**Mathilde Steckelberg Scholarships**—This endowment fund, established through the generosity of Mathilde Steckelberg, former head of the language department, enables the Department of Foreign Languages and Literatures to recognize outstanding scholarship performance by students majoring in Foreign Languages and Literatures. Academic performance and potential in the particular language area will be assessed in the selection of recipients for the four annual, nonrenewable awards.

**Travel/Study Abroad Awards**—To encourage more foreign language students to travel and study abroad, four or more awards of at least $600 each will be granted annually by the Department of Foreign Languages and Literatures. Recipients must have an academic record of 3.25 or better in a declared major or minor in the department.

**Hydrogeology Major or Senior scholarship to hydrogeology major or junior status who plans to enroll in a four- to six-week summer field course. An honorary one-year membership in the Kalamazoo Geology and Mineral Society accompanies the variable monetary stipend. Information and applications are available from the geology department chairperson.**

**History**—Several small stipends are awarded annually in the history of distinguished emeriti and benefactors to the department. The Smith Burnham Award and the James Knauss Award are for academic excellence by advanced undergraduates in history. The Margaret Macmillan Award is for the outstanding example of written research and creative scholarship by an undergraduate major in history. The Robert Russel Award is for similar achievement by a graduate student in history.

**The Department of History occasionally awards** the Elytne A. Mange Distinguished Scholarship in History to students, preferably women, who demonstrate evidence of professional commitment to the discipline. The Werners Scholarship Fund supports undergraduate conference presentations.

### Mathematics and Statistics

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

**The James H. Powell Award in Statistics**—This award is presented to senior statistics majors in recognition of high academic achievement in statistics.

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

**The Grover Bartoo Award**—This award is presented annually to a junior mathematics or statistics major in recognition of outstanding achievement in the study of mathematics or statistics.

**The Erik A. Schreiner Memorial Scholarship Award**—This award is presented to a junior or senior in the Department of Mathematics and Statistics who 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 Mathematics and Statistics Office.

**The Nathan L. Nichols Physics Scholarship**—This scholarship is awarded to a $1,400 per year for tuition and textbooks. It is offered to full-time undergraduate physics majors and the award is based solely on academic merit. Application forms can be obtained from the Physics Department Office.

**The Charles J. Wilcox 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 an outstanding student in each of the following introductory physics courses: 107, 113, 115, 205, 207, 309.

### Political Science

**Arden J. Elsasser Memorial Award**—This scholarship has been established by the League of Women Voters of the Kalamazoo area in memory of Arden J. Elsasser, who gave faithful service to this organization and contributed to the Kalamazoo community. The award, which is made annually, will normally be about $400. Application 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 granted, with preference given to those with demonstrable community service and/or political activity. Contact the chair of the political science department for information and applications.

**D. C. Shilling Junior and Senior Awards**—These annual awards are presented to outstanding political science majors 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 in memory of her husband, Dr. D. C. Shilling, the first chair of the political science department.

Zoa D. Shilling and D. C. 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 excel in their scholarly achievements. The fund is also a memorial to her husband, who was the first chair of the political science department.

Mark Denenberg W. J. Vroom 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 at, WMU, and complied a record of community service and service to others. The fund that supports the scholarship award was established in memory of Mark Denenberg, a graduate of the Department of Political Science, who died in 1985.

Howard Wolpe Assistantship or Scholarship—An endowed scholarship available to seniors majoring in political science who are U.S. citizens and, preferably, residents of the State of Michigan. Students must demonstrate high academic excellence at Western Michigan University and, in particular, in political science. The award was established by former Congressman Howard Wolpe, who endowed The Howard Wolpe Fund for the Study of Politics which supports the award.

Psychology

Departmental apprenticeships and assistantships—The Department of Psychology offers undergraduate teaching apprenticeships and undergraduate practice 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 each academic year.

Ance C. Mountjoy 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 student in the Haworth College of Business who has shown dedication to the profession.

Accountancy

Accountancy Scholarship—An annual scholarship awarded to an upperclass student majoring in accounting who has demonstrated academic achievement and professional responsibility in accounting.

Deloitte & Touche Accounting Scholarship—An annual scholarship awarded to an upperclass student majoring in accounting who has demonstrated academic achievement and professional responsibility in accounting.

Yeo and Yeo Certified Public Accountants Scholarship—An award to a senior majoring in accounting who has demonstrated academic achievement and professional responsibility in accounting.

Arthur Andersen Co. Scholarship—An award to a senior majoring in accounting who has demonstrated academic achievement and professional responsibility in accounting.

Business Information Systems

Data Processing Management Association Scholarship—The Southwest Michigan Chapter of DPMA offers this award in the spring semester to a senior who is majoring in accounting and has demonstrated academic achievement and professional responsibility in accounting.

The award will be presented to a student in the Haworth College of Business who has demonstrated academic achievement and professional responsibility in accounting. The award is presented to a student in the Haworth College of Business who has demonstrated academic achievement and professional responsibility in accounting.
Management
The Jeff Robideau Award for Mentitorious Scholarship—This award, established by an alumnus of the Department of Management, is given for academic achievement in the Department of Management each fall and winter semester to the male and female student with the highest G.P.A. in the junior and senior class. Each award currently includes a $625 stipend.

The Dr. Kimon Bournazos Award for the Study and Practice of HRM—This award, established by family and friends in memory of Professor Bournazos, is given to one male and female student who have demonstrated scholarship and leadership, interpersonal and communication skills and who plan to work as human resource managers.

The Redwood and Ross Management Achievement Award—This award, established by Kalamazoo based Redwood and Ross clothing, is given each fall and winter semester to management students for exceptional scholarship, leadership and service.

The Dean Arnold E. Schneider Management Achievement Award—Two awards, established by the faculty of the Department of Management, are given during the academic year to students who have distinguished themselves in scholarship, service to the department, or other worthy endeavors. Preference will be given to management majors, but others who have excelled in management as a minor or through contributions to student clubs may also be considered. Students must be nominated by a major or minor in the Department of Management faculty members to become eligible to receive this award.

The Distinguished Service Award for the Department of Management—This award, funded by an alumnus of the department, is given once annually to a management major or minor for distinguished service to the Department of Management.

Marketing
Robert B. Trader Marketing Scholarship—One or more scholarships of $500 per year in honor of Dr. Robert Trader, Professor Emeritus and founder of the WMU Marketing Department. Criteria: Majors in Marketing, Industrial Marketing, or Retailing; completion of 55 to 95 semester hours; minimum course load of 12 semester hours; cumulative GPA of 3.0; participation in University and community activities; related work experience.

Four Advertising scholarships are awarded annually during the winter semester for the following academic year to declared advertising majors who have completed fifty-five to ninety-five credit hours with a cumulative grade point average of at least 2.5. Recipients must enroll for a minimum of twelve credit hours. Consideration is also given to a demonstrated career interest in advertising/marketing, work experience, participation in University and community activities, and faculty recommendations. Application forms can be obtained from, and should be returned to, the Marketing Department by February 15.

1. Biggs/Gilmore Advertising Scholarship—This award provides a $500 scholarship and a two-semester paid advertising internship opportunity with Biggs/Gilmore Communications.

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


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

The following Food Marketing scholarships are awarded annually during the winter semester for the following academic year to declared 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, and faculty recommendations. Application forms can be obtained from the Marketing Department and must be returned by February 15.

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

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

Chicago Food Brokers Association Scholarships—Several $1,000 awards given to food marketing students affiliated with Chicago-based food companies.

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

Distinguished Order of Zorocrats Scholarship—Two (2) awards of $1,000 each given through funds donated by the Order of Zorocrats to honor the frozen food industry.

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

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

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

Julie Kravitz Memorial Scholarship—A renewable scholarship of at least $1,000 presented to a food marketing student from the Cleveland, Ohio area in honor of Mr. Kravitz, former chairman of P&G 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.

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

Richard Neschich Scholarship—A renewable scholarship of at least $1,000 awarded on the basis of scholarship and need in honor of Mr. Richard Neschich, Associate Professor Emeritus of Food Marketing.

Ralston-Purina Scholarship—One scholarship of $1,500 donated by the Ralston-Purina Company.

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

College of Education
The College of Education awards several scholarships annually to students who might not be recognized through other programs. These awards, ranging in value from $250 to $1,500, are divided equally between fall and winter semesters. Following is a list of the scholarships available and the amount of each.

Zora Ellsworth Memorial Scholarship—Two (2) awards of $1,000 each.

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

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

Meze Tate Undergraduate Scholarship—Four (4) awards of $250 each.

Dorothy H. and Cora Hurd Charles Scholarship—Two (2) awards of $500.

College of Education Undergraduate Scholarships—Six (6) awards of $250 - $1,000 each.

Lotfin Burge Educational Scholarships—Eight (8) awards of $1,000 each.

Katherine Pratt Burr Education Scholarships—Two (2) awards of $500 each.

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

Lucille Haines Scholarship—Four (4) awards of $500 each.

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

Alfred Griffin Scholarship Fund—One (1) award available every other year, one-half tuition.

Dorothy (Blatt) and Roy G. Frazn Endowed Scholarship for Graduates in Early Childhood Education—One (1) award of $500.

Homer Carter Scholarship in Reading—One (1) award of $500 each.

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

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

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

Florence and Vernon Martin Memorial Scholarship—Four (4) awards of $1,000 each.

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

Health, Physical Education and Recreation
Harriet Kiser Creed Scholarship—One (1) award (available), $500.

Home Economics
Chryslt I. Grady Scholarships—An endowment from the estate of Chrysal I. Grady has made possible an annual scholarship to students majoring in curriculum within home economics. Information is available from the Department of Consumer Resources and Technology.
Scholarships within the School of Aviation Sciences
Duke Harrah Memorial Scholarship—Junior status, aviation maintenance student, 3.0 GPA, apply by April 1, award varies from $250 to $500.

Herman Funder Award—Enrolled in or completed aircraft servicing courses, recipient selected by aviation faculty, awarded in April, award varies from $250 to $500.

Construction Engineering, Materials Engineering, and Industrial Design Department
American Foundrymen’s Society Scholarship—The Central Michigan and Detroit chapters of the society offer several scholarships each year to students in the foundry-related curriculum. Preference is given to AFS student chapter members. 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 in the materials engineering, applied materials science, or cast metals programs. 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 must be made to the College Scholarship Committee.

Aviation Science
Aviation Scholarships from Outside WMU—Applicants must be enrolled in an aviation program. Criteria details and applications available through the School of Aviation Sciences.

Aviation Distributors and Manufacturers Association—Junior/senior status, $1,000, apply by May 1.

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

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

Aircraft Association of Home Builders/Home Building Association of Kalamazoo Award—This award is presented to selected junior or senior class standing and is majors in the Construction Engineering and Management or the Construction Science and Management curricula. At least a $400 award is made annually to those individuals selected.

Applicants must be enrolled in or have completed aeronautical science courses approved by the department. Funds from this program are made available through donations of alumni and friends of the University. Apply to the College of Engineering and Applied Sciences.

Aviation Sciences
Aviation Scholarships from Outside WMU—Applicants must be enrolled in an aviation program. Criteria details and applications available through the School of Aviation Sciences.

Aviation Distributors and Manufacturers Association—Junior/senior status, $1,000, apply by May 1.

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

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

Aircraft Association of Home Builders/Home Building Association of Kalamazoo Award—This award is presented to selected junior or senior class standing and is majors in the Construction Engineering and Management or the Construction Science and Management curricula. At least a $400 award is made annually to those individuals selected.
Management programs sponsor a $1500 scholarship over four years to entering freshmen who make application to the BS in Industrial Engineering or the BS in Engineering Management programs. The scholarships are awarded based on high school academic achievement and high school participation in extracurricular activities. The awards are $250 per year the freshman and sophomore years and $500 per year for the junior and senior years.

David Laine Memorial Scholarship—These awards are made each year by the American Die Casting Institute. Selections are made from those students completing the Foundry Educational Foundation registration. Awards are usually $1,000 each. Apply to the Department of Industrial and Manufacturing Engineering or the Department of Construction Engineering, materials Engineering, and Industrial Design.

Society of Manufacturing Engineers Scholarship—This scholarship is available 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 school. 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 Applied Sciences and pursuing course work in plastics. Apply to the Department of Industrial and Manufacturing Engineering or the Department of Construction Engineering, Materials Engineering, and Industrial Design.

Mechanical Engineering

The Durametallic Corporation—Offers several scholarships each year to students in the mechanical engineering curriculum. Awards are given to those mechanical engineering students with at least 30 hours completed towards their major and a 3.5 or higher GPA. Award is not renewable.

Paper and Printing Science and Engineering

Paper Science and Engineering Merit Scholarship—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. College students already in the department or majoring in science or engineering and transferring to the department 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 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 128 Walwood, phone 387-8799.

Other paper science and engineering scholarships include:

Robert Caine Outstanding Student Award—A $250 scholarship to a junior/senior. Awarded on the basis of academic achievement and extracurricular activities. It is not renewable.

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.

Flexographic Technical Association—Thirty national scholarships of $1000 are available to freshmen through seniors. They are awarded on basis of need, academic achievement and extracurricular activities. It is not renewable.

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.

Flexographic Technical Association—Thirty national scholarships of $1000 are available to freshmen through seniors. They are awarded on basis of need, academic achievement and extracurricular activities. It is not 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 renewable.
College of Fine Arts

The Cornelio Leow Young Artist Scholarship—One $600 scholarship is awarded annually to an outstanding young student in art, music, or theatre. 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 Hearon/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. The Beverly A. Belson Scholarship Fund for Music Theatre is awarded to a senior preparing for a professional career in music theatre. The recipient will be selected by the Advisory Faculty Committee of the Music Theatre program or an appropriate interdisciplinarian committee appointed by the College of Fine Arts. The recipient must maintain good academic standing. One-half of the award is 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 beginning freshmen, admissible to the University and enroll for the upcoming fall and winter semesters as a full-time Art major. 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 Art Advising Office, 1406 Sangren Hall, Western Michigan University, Kalamazoo, MI 49008 or call (616) 387-2440.

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

Art Star Awards—The Department of Art offers yearly grants-in-aid to junior and senior art majors. Based on faculty recommendations, grants are awarded from the areas of drawing, painting, watercolor, sculpture, graphic design, photography, printmaking, ceramics, jewelry/metalworking, art history and art education. Recipients are notified prior to the Annual Art Awards Ceremony in late winter.

Mary Coutant Memorial Prize—The family of Mary Coutant established this annual prize to recognize an outstanding student within the Art Department. All sophomore art majors, enrolled as full-time students with a minimum overall GPA of 3.0 or above will automatically be considered. The recipient is notified prior to the Annual Art Awards Ceremony in late winter.

Walter Enz Memorial Award—The family of Walter F. Enz established this annual grant to honor the most outstanding student in the art department. The recipient is selected each year by a committee of art faculty, including Professor Donald E. King, and one member of the Enz family.

Scholastic Art Award—The Department of Art annually offers two $1,000 scholarships to entering freshmen who have been nominated for scholarship by the Scholastic Art Awards Competition, a nationally recognized art contest. For information on this competition or an application write to Scholastic Inc., 730 Broadway, NYC 10003, or ask your high school guidance counselor.

Angie Gayman Carmer Art Scholarship—The Department of Art annually offers several $1,400 scholarships to outstanding art students. Applicants must be currently enrolled, full-time art majors, with a minimum GPA in art of 3.5 for undergraduates or 3.6 for graduate students and be in financial need. A completed application form, a one-page typed, single spaced statement of the student’s creative and educational intentions, and 3 letters of recommendation are due in the Art Advising Office, 1406 Sangren Hall, or before February 1. The awards are made at the annual winter awards ceremony and are effective for the duration of the next academic year. Previous recipients may reapply in subsequent years.

James Kerr and Rose Netzorg Kerr Awards—These are annual awards granted to outstanding art students. Applicants must be art majors enrolled full-time. Recipients are selected on the basis of a portfolio review. A completed application form and portfolio of art work is due on or before February 1 in the Art Advising Office, 1406 Sangren Hall. The awards are made at the annual winter awards ceremony.

Rose Netzorg Kerr and James Kerr Awards—These are annual awards granted to outstanding art students in the area of graphic design. Recipients are selected by the graphic design faculty and are expected to fulfill several hours of service to the graphic design area in proportion to the amount of the award. These awards are given at the Annual Art Awards Ceremony in late winter.

Haig and Janette Teshjian Art Teaching Scholarship—The family of Haig and Janette Teshjian has established a scholarship to be awarded to an outstanding art teacher major in financial need. The recipient is selected on the recommendation of the Art Teaching Faculty and must be a current or enrolled, full-time, junior or senior art teaching major, with a minimum overall GPA of 3.5. This scholarship is awarded biennially in February and is effective for the upcoming fall semester.

Mary Smutz Award—This annual award was established to honor an outstanding Art Teaching Major. 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.

Royi Keo 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, merit of their submission, and evidence of commitment to their project and/or discipline.

Dance

Dorothy Uppjohn Dalton Young Artist Scholarships—These scholarships are awarded to dance majors in three categories. New dance major scholarships are given to incoming dance majors based on artistic and intellectual promise. Exceptional dance major scholarships are awarded to junior or senior dance majors who have demonstrated excellence in their dance participation at Western Michigan University. Dancers with musicians scholarships are granted to dance majors who have exhibited choreographic ability and musicality for proposed collaborative projects with musicians. 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 Chopper for Male Dance Majors and Ethnic Minority Dance Major Scholarships—These scholarships are awarded to new and/or 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 Dance Major Scholarship—These scholarships are granted to dance majors who are outstanding in their dance participation at Western Michigan University and have, thereby, enhanced the quality of the dance program. These scholarships are given to new students based on outstanding artistic and intellectual promise. Outstanding dance major scholarships are awarded in the following 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.

E. Eugene Mills Scholarship for Excellence in Ballet—This scholarship is awarded to a current dance major who has demonstrated excellence in the performance, choreography and/or teaching of ballet. An overall grade point average of 3.0 is required. Awards range from $100 to $1,000 and may be used either as tuition remission at Western Michigan University or to support tuition for summer study at a nationally recognized dance program. Students must apply for these scholarships by February 1.

Music

Music Scholarships—Western Michigan University’s School of Music makes annual awards of $500 to $3,000 a year for undergraduate and $500 to $5,000 a year for graduate students who demonstrate outstanding musical and academic potential as music majors. These awards are made in recognition of the variety of talents that are necessary for success in the various professional fields of music. Students will qualify to hold an award until graduation (four-year maximum for undergraduates and two-year maximum for graduates) provided musical and academic excellence are maintained.

Undergraduate students may receive consideration for a scholarship award at the same time they audition for admission to the curriculum. Decisions on music scholarships are made in mid-March.

Certain conditions for holding a music scholarship may be stipulated at the time of award. These conditions might include such requirements as maintaining a certain grade point average, being a full-time music major, performing in School of Music ensembles, library assistance, and accompanying or other professional service. All financial aid conditions relating to a scholarship are stated in writing prior to the student’s accepting the award.
Several music scholarships are awarded in the name of special persons or designated funds.

The Leon Daltom Music Scholarships are awarded to incoming music majors in memory of Dorothy U. Daltom, 1890-1981, a charter member of the WMU Board of Trustees and a long-time Kalamazoo philanthropist for arts and humanities. Funds are contributed by colleagues and friends of Dorothy U. Daltom.

Mae Arnold Thacker Scholarships come from an endowment established by Nelle M. Thacker (class of 1920) to honor the memory of her sister, Mae Arnold Thacker. Harper Maybee Scholarships are awarded to seniors in honor of the first head of WMU’s School of Music. Funds are contributed by music alumni.

Julius Stulberg Scholarships for violinists are funded by donations of music alumni and friends in memory of Julius Stulberg, a member of Western’s music faculty, 1945-1972.

Herbert G. Butler Scholarships recognize cellos who demonstrate high achievement in musical studies. Funds come from an endowment established in the name of Herbert Butler, professor of music (1860-1903), and conductor of the University Symphony Orchestra (1868-1903).

Michael Listiak Scholarships are awarded to music majors from southwestern Michigan who plan to pursue a teaching career. Funds from these scholarships are made available to WMU on a matching basis by the community of South Haven in honor of Michael Listiak, who taught music in their schools from 1929 to 1959.

The Beulah and Harold McKee Scholarship recognizes a senior music major who demonstrates outstanding accomplishment in his or her chosen field of music. Funds are made available through donations to the scholarship program in memory of Beulah and Harold McKee.

Nancy Ellis Memorial Scholarships are awarded to music therapy majors in memory of Nancy Ellis who was a WMU music therapy student.

The Gene Whitlefield 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 Whitlefield, a prominent and respected Kalamazoo jazz artist.

The H. Glenn Henderson Scholarship recognizes a keyboard music major who demonstrates major evidence of accomplishment in his or her chosen field of music. Funds are made available through donations to the scholarship program in memory 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 from students to help fund their activities.

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

The Theodore Presser Foundation Scholarships—annual awards presented to a senior who is majoring in music at WMU. The recipient is selected from a list of students who are nominated by School of Music faculty. In addition to showing outstanding promise, the recipient must carry an overall grade point average of 3.0.

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

The Boston 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 1982 to 1992. The winner is selected by the current Director of Bands. Funds come from an endowment established by donors 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 contributions from his patrons. Awards are available to trumpet, tuba, trombone, and horn students who perform in an Honors Brass Quintet.

The Sam B. Currie Memorial Vocal Endowed Scholarship is awarded to a senior who is majoring in music who demonstrates 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 1946 to 1972.

The Walter and Myrtle Owings Scholarship is awarded to a student attending the University of Michigan for studies in music. Funds are contributed by the family of a music student.

The Theodore Presser Foundation—annual awards are 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 annually 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 scholarship committee comprised of representatives of the University.

Gerontology

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

Ocasional Therapy

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

Kalamazoo AMBUCS (American Business Clubs)—a varying number of scholarships are awarded each year. Funds are based upon need and leadership potential.

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

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

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

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

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 students who have demonstrated academic excellence (minimum 3.2 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

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 contributions 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.
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.

Robert Barstow’s outstanding contribution to 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 international exchange scholarships awarded in a competitive process annually to qualified students for study in foreign universities in Asia and Europe. The Office also administers the K-S International Endowment Fund, which assists international students in their graduate studies at Western Michigan University.

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 awarded for merit (no financial need demonstrated), and for students who plan on less intensive language study. Grant awards will try to bridge the gap between student’s ability to pay and the cost of foreign study.

Free University of Berlin Exchange Scholarships—These scholarships enable two WMU students to study at the Free University in the city of Berlin, Germany, for an academic year beginning in October. Tuition, housing, and stipend are included.

University of Tübingen Exchange Scholarships—These scholarships enable two WMU students to study in Tübingen, Germany, for an academic year beginning in October. Tuition and housing are included.

Keio University Exchange Scholarship—This scholarship enables one WMU student to study Japanese language and culture at Keio University in Tokyo, Japan, for eleven months beginning in September. Tuition, housing and stipend are included.

Ryoji Koie Art Scholarships—These scholarships enable two WMU students to study in Japan under the noted ceramicist Professor Ryoji Koie. Travel and most living expenses are included.

University of Paderborn Exchange Scholarships—These scholarships enable two or more WMU students to study at the University of Paderborn in the city of Paderborn, Germany, for an academic year beginning in October. Tuition and fees are included.

University of Passau Exchange Scholarship—This scholarship enables one WMU student to study at the University of Passau in the city of Passau, Bavaria, Germany, for an academic year beginning in October. Tuition and housing are included.

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

Japan Center for Michigan Universities—Scholarships—The Japan Center for Michigan Universities was established in Shiga, Japan, in 1988 by Shiga Prefecture and the state of Michigan to mark twenty years of formal sister-state relationship. Educational programs at the center include credit courses of Michigan universities in Japanese language and culture. Contingent upon Michigan Japan Foundation funding, a limited number of partial scholarships, worth a maximum of $5,000 each for two semesters of study at the center, are available to students recommended by WMU.

International Affairs Scholarships—The Office of International Affairs offers a limited number of $250 to $500 scholarships to assist students to participate in WMU-sponsored study abroad programs.
Degree Requirements

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

University Requirements

1. The requirements in at least one of the University approved curricula must be fulfilled before graduation.

2. The student must complete a major with a minimum of 24 hours and, if required by the curriculum, a minor with a minimum of 15 hours. Courses elected to satisfy requirements in one major and/or minor may not be counted again to satisfy requirements in another major and/or minor. A 30-hour subject major or 36-hour group major is required of students in Elementary and Secondary Education, with a minor or minors of at least 20 semester hours. For further details see Curricula for Teachers. Some students may be excused from the requirement of declaring a regular major and/or minor field if they satisfy the requirements of their curriculum as set forth in the catalog, or that curriculum as modified by substitutions approved through normal channels.

3. Each student must complete the required General Education program. Beginning with the Fall Semester, 1973, students graduating with an Associate of Science degree from Michigan two-year colleges, which are 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 a major or minor(s) presented for graduation. Individual colleges, departments, or programs may have additional University approved requirements including a higher minimum grade point average.

5. A student must also have an overall University grade point average of 2.0 or higher to be graduated. If a student fails to meet minimum University academic standards, he/she goes on academic probation or is dismissed.

6. Each student will fulfill all requirements of the Intellectual Skills Development Program as outlined in this section.

7. Each student must satisfy the University computer literacy requirement as outlined in this section.

8. Each student must complete two semester hours of general physical education activity classes. First-year students are urged to arrange their schedules so that they complete their two-hour physical education requirement no later than their sophomore year. Persons 30 years of age or older at the time of graduation are not bound by this requirement. Such a waiver applies only to general physical education and not to specific curricular requirements or to total hours required for graduation. Veterans of military service (minimum of one year continues active duty) shall, upon request, be granted two hours of general physical education credit. A student limited in physical activity may require counseling for courses suited to his/her limitation through the Medical Recommendation Procedure. See "General Physical Education" exemptions §5. A maximum of eight hours of general physical education may be counted toward graduation.

9. 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.

10. A maximum of fifteen semester hours of credit in correspondence (self-instructional) courses may be applied to a degree. Individual colleges and departments may have restrictions on the application of correspondence (self-instructional) courses to degree requirements.

11. Students transferring from a two-year community college 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 (exclusive of the general physical education requirement).

12. Students may graduate under the WMU catalog in effect at the time of their initial registration or any succeeding catalog providing the catalog is not more than ten years old upon the completion of requirements for graduation. Students who have been gone from the University for ten years or more must enter the University under the catalog in effect at the time of re-entry. For exception see "Special Policy..." under "Graduate Requirements for a Bachelor of Science in Engineering" listed in the College of Engineering and Applied Sciences section.

13. 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.

14. As a requirement for graduation, all seniors must participate in the assessment program.

Intellectual Skills Requirements

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

WRITING

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

Basic writing course options are:

- 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)
  - HIST 106
  - PHIL 100

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.

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 who wish to proceed to other mathematics courses must earn a C or better in MATH 109.

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

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

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

Intellectual Skills Development Program for International Students

WRITING AND READING
Beginning undergraduate international students are placed into, or exempted from, English 160/161 or 360/361 based on the results of either the 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.

INTERNATIONAL TRANSFER STUDENTS
International transfer students will abide by the Intellectual Skills Development Program requirements for transfer students.

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

Intellectual Skills Development Program for Transfer Students
Transfer students entering under the 1983-84 and subsequent catalogs will participate in the program.

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

READING
Students who transfer thirty 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.

Computer Usage Requirement
Every undergraduate must demonstrate proficiency in computer usage through one of the following options:
1. Satisfactory performance on a proficiency test;
2. Satisfactory completion of an approved computer usage course; or
3. Meeting proficiency standards set by the college of the student's major.

Entering students should contact their college advising office or University Curriculum 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 normally 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 releasing 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
Western Michigan University requires a minimum of thirty-five semester hours of General Education courses in order for a student to graduate. These requirements are applied to all students in the University and are substantially the same for all curricula. The General Education program is designed to ensure academic breadth for every student at the University by requiring coursework in each of the following areas: (1) Humanities and Fine Arts, (2) Social and Behavioral Sciences, (3) Natural Sciences and Mathematics, and (4) The Non-Western World.

The General Education requirement is met by completing the Distribution Program. Honors College students may satisfy their General Education requirements through the Honors College General Education program. Graduates of the College of Arts and Sciences will satisfy their requirements through completing the Liberal Education Curriculum. Additional information may be obtained from your curriculum advisor.

THE DISTRIBUTION PROGRAM
This program includes courses offered for General Education by departments throughout the University. The courses offer a variety of approaches to introduce the student to the Humanities and Fine Arts, the Social Sciences, the Sciences, and the Non-Western World. There are introductory courses for students wishing to explore new areas of knowledge and there are more advanced courses for students wishing to develop in specialized areas. Many special-topic courses (for example, courses on the environment) are offered. In addition, interdisciplinary courses are offered that use skills and techniques of study from several fields. The essential goal of the Distribution Program is to extend the undergraduate experience beyond the student's area of concentration and provide students with the information necessary for synthesizing their experience into an understanding of themselves and their world.

Within the guidelines below, students may take classes in a number of departments. Courses may count toward a student's major or minor as well as for General Education credit. Curriculum advisors will assist students in selecting and planning their Distribution Program.

REQUIREMENTS FOR THE DISTRIBUTION PROGRAM
Beginning in the Fall of 1996, a new General Education program will become effective. At that time, the list below will no longer be in effect.

There are five stipulations:
1. Coursework must total a minimum of thirty-five semester hours.
2. At least six hours of appropriate course work in each of the three Areas (I, II, III), and at least one approved course in Area IV, must be taken.
3. Only one course from any one department can be applied toward an Area requirement.
4. At least two courses (minimum of six hours) must be taken from 300-400 level approved General Education course work.
5. No more than two courses from any one department count toward the total of thirty-five hours.

General Education Distribution Program

AREA I  Humanities and Fine Arts  A-S 330, 331, 405
ANTH 370
ART 120, 130, 140, 148, 220, 221
BAS 330, 400
COM 170
DANC 148
ENGL 107, 110, 111, 112, 150, 210, 222, 223, 252, 282, 307, 308, 311, 312, 315, 416, 484
HIST 145, 212, 300, 301
LANG 100, 101, 105, 350, 375, 376
FREN 100, 101
GER 100, 101
GREK 100, 101
JPNS 100, 101
LAT 100, 101
RUSS 100, 101, 310
SPAN 100, 101, 275
MEDV 145
MUS 148, 150, 151, 250, 450
PHIL 200, 201, 220, 225, 250, 300, 301, 303, 311, 312, 313, 314, 315, 316, 316, 350, 434
REL 100, 200, 305, 306, 313
THEA 100, 148
WMS 100

AREA II  Social and Behavioral Sciences  A-S 330, 331, 404
ANTH 100, 110, 140, 210, 240, 343
BAS 200, 210, 300, 301, 310, 314, 320, 350, 360
BUS 170, 220
COM 200
ECON 107, 108, 109, 201, 202, 309
EGEOG 102, 244, 311, 380, 383, 384
HIST 100, 101, 103, 120, 210, 211, 306, 313, 315, 316, 326, 328, 360, 364, 366
MGMT 404
PSY 100, 105, 200, 240, 250, 300, 340, 344, 350, 360, 361, 362, 363, 420, 422
PSY 100, 150
REL 323, 324, 332
SOC 100, 171, 190, 200
WMS 200, 300, 310, 450

AREA III  Natural Sciences and Mathematics  ANTH 250
BIOL 105, 112, 230, 234
CHEM 101, 102, 103, 107, 150
EGEOG 100, 105, 204, 306, 350
GEOL 100, 130, 144, 200, 222, 300
MATH 114, 116, 122, 200, 366
PHYS 102, 104, 105, 107, 109, 113, 205, 207
SCI 132, 133, 170, 185

AREA IV  Non-Western World  A-S 330, 331
ANTH 129, 339, 340, 341, 342, 344
ECON 381
ENGL 313, 314
EGEOG 381, 382, 386, 387, 389
HIST 270, 370, 376, 384, 385, 388
MUS 352
PSY 341, 342, 343, 346
REL 302, 303, 304, 307, 308
SOC 304, 334, 335, 336

AREA V  Optional Electives  BIS 142
BIS 160
CS 110
ENGL 105, 305
GEOL 312
IME 102
MLSC 150
PEFR 100
SWRK 100
SPPA 200
THEA 105

General Education Requirement for Transfer Students

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 receive thirty hours of General Education credit. The distribution of this credit is as follows: eight hours in each of Area I, II, III and six hours in Area V. Such students need only satisfy Western's requirements of six hours of 300-400 level General Education coursework, including one course from Area IV unless a substitute was transferred. In addition, the University will determine the equivalence and applicability of transferable community college courses in meeting other graduation requirements. Students who transfer from these community colleges and who have not fulfilled the requirements of the MACRAO Articulation Agreement will have their General Education coursework evaluated according to the General Education Distribution requirements as described in #5 below and in Western's General Education Transfer Guide available at individual community colleges. In order to determine remaining General Education requirements, students should consult their curriculum advisor.

Michigan Community College MACRAO Agreement Signatories:
Alpena Community College
Bay De Noc Community College
Delta College
Glen Oaks Community College
Gogebic Community College
Grand Rapids Community College
Henry Ford Community College
Highland Park Community College
Jackson Community College
Kellogg Community College
Kirtland Community College
Lake Michigan College
Lansing Community College
Macomb Community College
Mid-Michigan Community College
Monroe County Community College
Montcalm Community College
Mott Community College
Muskegon Community College
North Central Michigan College
Northeastern Michigan College
Oakland Community College
St. Clair County Community College
Schoolcraft College
Southwestern Michigan College
Washtenaw Community College
Wayne County Community College
West Shore Community College

2. Transfer Students from other Michigan Community Colleges: Students from these colleges will satisfy the General Education requirement by completion of the Distribution Program. Transfer work will be evaluated according to the General Education Distribution requirements as described in #5 below and in Western's General Education Transfer Guide available at individual community colleges. In order to determine remaining General Education requirements, students should consult their curriculum advisor.

3. Transfer Students from an out-of-state two-year college or from any four-year college. Students from these colleges will satisfy the General Education requirement by completion of the Distribution Program. Transfer work will be evaluated according to the General Education Distribution requirements as described in #5 below. In order to determine remaining General Education requirements, students should consult their curriculum advisor.

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

5. General Education Distribution Requirements for Transfer Students. Students not covered by the MACRAO Articulation Agreement described in #1 above must meet the following Western Michigan University General Education Distribution requirements. A minimum of thirty-five semester hours is required: two courses must be at the 300-400 level.

A. Humanities and Fine Arts—A minimum of six semester credits from the following fields: Art (studio-general, appreciation or history) Communication (interpersonal) Film (appraisal or history) Foreign Language (first-year only) General Humanities Linguistics (nature of language) Literature (English or English translation) Music (appraisal or history) Philosophy (and logic) Religion (non-doctrinal) Theatre (introduction or history)

B. Social and Behavioral Sciences—A minimum of six semester credits from the following fields: Anthropology (cultural general, archeology) Economics (principles, problems, and consumer education) General Business (social issues or consumer education) General Social Science Geography (regional, human) History Minority Studies (general) Political Science (introduction, principles, international relations, foreign and comparative political systems, general government) Psychology (general) Sociology (introduction, principles, social problems)

C. Natural Sciences and Mathematics—A minimum of six semester credits from the following fields: Anthropology (physical) Botany (introduction, general, outdoor science) Chemistry (general, college level)
Environmental Science (emphasis on chemistry, physics, biology, geology, or geography)
General Biological Science
General Earth Science
General Physical Science
Geography (excluding regional or human)
Geology (physical, historical, or oceanography)
Mathematics (college-level not beginning or intermediate algebra, finite mathematics, analysis, or statistics, calculus, survey of mathematical ideas)
Physics (general, non-major course, astronomy)
Philosophy or Methodology of Science

D. Non-Western World— in order to satisfy this requirement a student must have completed a minimum of three semester credits in a humanities or social science course emphasizing aspects of non-western regions and societies.

E. Optional Electives— credits from the following areas may be used as General Education elective credits towards the thirty-five hour credit minimum:

- Agriculture (introduction)
- Composition (freshman rhetoric, expository writing, informational writing, technical communication, etc.)
- Computer Science (computer literacy, introduction)
- Environmental Studies (fundamentals)
- History (introduction to the study of history, historiography)
- Military Science (military aspects of national power)
- Social Work (introduction)
- Speech Pathology (introduction to communication disorders)

F. All students must meet the minimum requirements of thirty-five semester hours in general education, and this must include at least two courses at the 300-400 level.

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

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

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

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

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

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

6. The following courses are not to be counted as satisfying major and minor requirements:

- a. Required professional courses in education.
- b. Required courses in general physical education.
- c. A combination of foreign language courses, or of English or American literature courses with a foreign language, is not permissible.
- d. Mathematics courses may not be counted towards a science (physics, geography, or chemistry) major or minor sequence, but may be required to satisfy curricula requirements.
- e. Courses elected to satisfy requirements in one major and/or minor may not be counted again to satisfy requirements in another major and/or minor.
- f. Only approved majors and minors listed in the catalog can be placed on a student record.

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

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

A listing of curriculum advisors may be found in the Schedule of Classes, which is published each semester and session.

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 registering for 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.

COLLEGE ADVISING OFFICES
College of Arts and Sciences
2060 Friedmann Hall, 387-4366
Haworth College of Business
2130 Schneider Hall, 387-5075
College of Education
2504 Sangren Hall, 387-3474
College of Engineering and Applied Sciences
2038 Kohrman Hall, 387-4033
College of Fine Arts
3001 Dalton Center, 387-5812
College of Health and Human Services
University Curriculum
203 Moore Hall, 387-4410
Lee Honors College
Main Office, Lee Honors College Building, 387-3230
General University Studies (GUS) Program
B-108 Ellsworth Hall, 387-4167

Freshman Graduation Rates
FULL-TIME DEGREE-SEEKING BEGINNING FRESHMEN, CLASS OF 1988
Number of Beginners: 3,332
6 years
Number of Graduates: 1,821 (54.7 percent)
Registration

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

Late Registration Fee
See Student Fees.

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

Students who withdraw (drop) on the 4th and 5th day of classes will not receive a refund, unless it is a complete withdrawal nor will the class show on the student's official transcript.

Students who withdraw (drop) during the first Friday past mid-semester at the Registrar's Office. The final date for dropping is published in the Schedule of Classes. Students may not withdraw from any class after this date without academic penalty.

Withdrawal From Classes After the Official Date to Drop

1. The final date to withdraw officially from classes without academic penalty is the first Friday past midsemester. The specific date is published in the Schedule of Classes each semester or session. (Each student is encouraged to confer with the instructor before withdrawing from class.)

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 file a written appeal on forms which may be secured at 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 Academic Records Office, Seibert Administration Building to pick up the authorization form.

Students who meet the following criteria are eligible to participate in this program:

1. Must have previously earned thirty hours of credit from WMU.

2. Must presently be enrolled and have paid for fifteen hours of credit for the semester they are seeking the tuition waiver.

3. Must have an overall G.P.A. of 3.25 at Western Michigan University.

4. Must be an undergraduate student in a degree program.

Undergraduate students who meet the qualifications may select one course per semester outside their major, in underenrolled courses, as determined by the department, 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 must then proceed to the department to see if the course they are interested in is available. If the course is available, the department will sign the authorization card and add the course via terminal. The student will present the signed authorization card to the Accounts Receivable Office, 1060 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, interaction with the faculty is essential in the development of a mutually acceptable project description. At a minimum, such a description should contain an outline of the study topic, specification of the work to be done and the materials to be read, the credit to be given, the type and frequency of faculty-student contacts, and a statement of the evaluative criteria to be used by the faculty member.

APPROVAL PROCESS

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

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

FACULTY RESPONSIBILITY

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

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

Institutional 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 courses not offered at WMU.

Grading
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></td>
<td>Extraordinary</td>
<td></td>
</tr>
<tr>
<td>BA</td>
<td>Extraordinary</td>
<td>3.5</td>
</tr>
<tr>
<td>B</td>
<td>Very Good, High Pass</td>
<td>3.0</td>
</tr>
<tr>
<td>C</td>
<td>Satisfactory, Acceptable,</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Poor</td>
<td>1.0</td>
</tr>
<tr>
<td>E</td>
<td>Failing</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Repeated Courses
Any course in which a student may have been enrolled more than once is considered a repeated course. A grade must be presented for each course.

The number of times a course can be taken is limited to three (including withdrawals). Appeals may be addressed to the department chairperson. The limitation on the number of times a course can be taken applies only to students enrolling in Fall 1989 or thereafter.

There is no limit on the number of different courses that can be repeated. A repeated course is not removed from the student's record. All grades earned are shown on the transcript.

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

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

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

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

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

Honors
Honors are conferred upon graduating students who have demonstrated high level of performance during their university career. Recipients of honors receive their 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-in-course, the following rules will 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 sixty semester hours of credits at Western Michigan University, of which fifty must be graded.

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 his/her overall grade point average is at least 2.0.
2. Warning
Whenever the grade point average for any enrollment period is less than 2.0, but the overall grade point average is 2.0 or above, the student will be warned.
3. Probation
The student will be placed on probation whenever his/her overall grade point average falls below 2.0.

4. Probation Removed
Whenever the conditions of Good Standing are restored, Probation will be removed.

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

6. Dismissal
The student who fails to increase his/her overall grade point average to 2.0 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 Admissions Committees if the increase has been substantial but still fails fractionally short of the minimum 2.0 requirement. Students may apply for re-admission through their college advising office. College committees are concerned with the extent to which the dismissed student has resolved the causes of past academic difficulty. It is required, therefore, that the student include a written statement with the re-admission application.

Credit By Examination

Advanced Placement Program (APP)
Western Michigan University participates in the Advanced Placement Program (APP) of the College Board. Students with scores of at least 3 (4 in the case of Physics) on any APP exam will receive college credit in the appropriate subject. Students should have College Board Reports of their test scores sent to the Office of Admissions and Orientation at Western Michigan University college code 1902.

After APP College Board Reports of examination scores are received and evaluated, the Office of Admissions and Orientation will notify students of the specific decisions regarding any credit award. After students’ enrollment at Western, the Office of the Registrar will post course credit to students’ transcripts. For more information on APP score requirements and equivalent credit awarded at Western, write to the Office of Admissions and Orientation.

College Level Examination Program (CLEP)
This program gives individuals the chance to earn college credit by examination in a variety of areas of study. There are two types of tests offered—General Examinations and Subject Examinations. Western Michigan University’s credit award policies are explained 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:
   a. Students who have already received credit for a college writing class cannot receive credit by passing the English examination.
   b. Students who have already received credit in a college mathematics course cannot receive credit by passing the mathematics examination.
   c. Students who have received college credit for two courses in any of three areas, the humanities, social sciences, or natural sciences (excluding mathematics and mathematics), from the Distribution Program 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:
   a. If a student passes the humanities examination with a score of 540 or above, three hours of credit will be awarded in Area I (humanities and fine arts) of the General Education Distribution Program.
   b. If a student passes the social sciences-history examination with a score of 520 or above, six hours of credit will be awarded. Three hours will be applied, to Area II (social and behavioral sciences), and three hours to Area V (optional electives) of the General Education Distribution Program.
   c. 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 Area V (optional electives) of the General Education Distribution Program.
   d. If a student passes the natural sciences-examination with a score of 489 or above, three hours of credit will be awarded in Area III (natural sciences and mathematics) of the General Education Distribution Program.
   e. If a student passes the mathematics-examination with a score of 497 or above, three hours of credit will be awarded in Area III (natural sciences and mathematics) of the General Education Distribution Program.
   f. *If a person receives credit for both the general natural sciences and mathematics exams, three of those hours will apply toward general education Area III and three hours will apply to Area V.

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 the scores 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 an equivalent course in that department through comprehensive examinations. All comprehensive examinations should be administered by authorized personnel determined by the department. Each department should determine those courses for which the comprehensive examination procedure applies.

1. All credit by examination is subject to the following requirements:
   a. 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.
   b. Credit by comprehensive examination is normally awarded undergraduate credit. Credit by comprehensive examination can be posted only for admitted students who have either previous or current enrollment.
   c. Credit by comprehensive examination can be posted only for admitted students who have either previous or current enrollment.
   d. Credit by comprehensive examination can be posted only for admitted students who have either previous or current enrollment.
   e. Credit by comprehensive examination can be posted only for admitted students who have either previous or current enrollment.

Records

Graduation

Summer Session
Apply no later than April 1st.

Fall Semester
Apply no later than August 1st.

Winter Semester
Apply no later than December 1st.

Spring Session
Apply no later than February 1st.

Completion of Work—Final Date

All work taken either on or off the campus must be completed by graduation 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 toward the completion 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 the graduation list automatically. Such students will be placed in the class of the succeeding semester or session only after reaplication for graduation; assuming requirements 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
A student desiring a transcript of his/her record in this University should write or go to the Office of the Registrar, giving dates of attendance and, if a graduate, the date of graduation. All names under which the student may have been enrolled and a social security number should be provided. All copies are $3.00 each. No transcript will be released except upon written authorization of the student. Official sealed transcripts are mailed only to third parties, i.e., employers, educational institutions, governmental units.

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

Lending this card to anyone, or failure to present it when requested by University officials, is a violation of University regulations and subjects the holder to disciplinary action.

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

Academic Skills Center
The Academic Skills Center, located at 1044 Moore Hall, is designed to offer students the opportunity to strengthen their learning skills and improve their academic performance. Programs are offered within the following framework:
1. All undergraduates are eligible to register for services; graduate students may register for specific workshops on a space available basis.
2. Programs and workshops carry no academic credit.
3. There is no charge for services. Telephone: 387-4442

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.

LEARNING STRATEGIES WORKSHOP
The Learning Strategies Workshop helps students learn how to use their time effectively and develop efficient study habits. Students practice techniques for time management, note taking, and test taking. Students also learn whether they are driven by internal or external motivators, as well as investigate their learning style preferences.

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

THINKING SKILLS WORKSHOP
The Thinking Skills Workshop introduces strategies for problem solving, making predictions, recognizing patterns, and metacognition.

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 E-LASSI, a well known study skills inventory, is available to all Western students for a $2.00 fee. Prior registration to use the E-LASSI is not required.

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

Career Education
All students are urged to make use of the career education facilities of the University for assistance in deciding upon a major and minor, planning for realistic entry-level jobs, and visualizing a career path for the future. The Career Center, located in A-90 Ellsworth Hall, is a walk-in, phone-in center for answers to student's career questions or for referral to the career-related offices indicated below. Career counseling and advising are available in the offices of Career Services, Student Employment Referral Service, Testing and Evaluation Services, the University Counseling Center and curriculum and departmental advisors. A course directly related to career education is UNIV 102, Career Exploration and Development. The Office of Career Services offers seminars and workshops to assist students in their transition from college to the world of work.

A suggested schedule of career education activities follows:

FRESHMEN AND SOPHOMORES
1. Be clear as to why you are in college, what a college education means to you, and what you hope the return on your monetary and psychic investment will be. Muddled thinking in any of these areas tends to take a toll on your grade point average, interest in and motivation to attend classes, and willingness to take responsibility for your own academic progress. Talking to a counselor in the University Counseling Center can help you more clearly think through these concerns.
2. Testing and Evaluation Services can help you assess your interests, skills, and abilities. Knowing about yourself in these terms provides vital information needed to make decisions about your education and/or career direction. Since you will be spending a great deal of your time in the next few years becoming knowledgeable in an academic discipline, it follows that you need to be interested in it, have the ability to master the material, and acquire the skills necessary to develop an initial competence in the field. The same things are important to consider in deciding what you will do after you graduate.
3. Discover what your values about work are. Since you will eventually be spending 40 or more hours a week engaged in some activity for which you will be paid, you need to be clear about what settings you prefer—outdoors or indoors, working with people or alone, supervised or being supervised, routine duties or constant change, staying in one place or traveling. These are just a few of the factors that contribute to satisfaction with your work.
4. Explore various academic and career areas. Take classes that will introduce you to a discipline, research careers that might logically be associated with the discipline, talk to people currently employed in those careers, and volunteer to work in areas that interest you. Contact the Student Employment Referral Service for assistance in locating internships, summer jobs, or part-time positions related to your career choice. This gives you a chance to explore your profession and provides you with practical experience, which is increasingly more important when seeking fulltime employment.
5. Get to know your major professors well. They can give you a lot of support, many valuable tips, and may recommend you to future employers.
6. Get involved in campus activities and/or classes that will help you develop the skills you have identified as being necessary to excel in a career which interests you.
7. Start getting familiar with the office of Career Services. Talk to the counselors, find out how they can help you negotiate the job market. Check on the market projections in your field of interest, learn how to conduct your part of a job interview, learn to write resumes and letters of inquiry and application. Sign up for on-campus interviews. Talk to as many people in your field of interest as you can.
8. Be able to articulate your job objectives—what you want to do, why you feel that you can do it well, and for whom you wish to do it. This is vital information to be able to give potential employers.
9. Career related work experience will help broaden your insights into employment areas.
By utilizing the following services, which are explained in more detail on succeeding pages, you will be able to fully integrate your academic education with career education:

Testing and Evaluation Services
Walworth Hall — East Campus 387 8900
University Counseling Center
2510 Faunce Student Services Building 387-1850
Career Services
B Wing Ellsworth Hall 387-2745
Student Employment Referral Service
A Wing Ellsworth Hall 387-2725
College Advising Offices
Departmental Advising Offices

Counseling Center

Many important decisions and situations will confront students while they are at Western Michigan University. They will need to make decisions regarding courses, curricula, and career exploration. They may become involved in social and personal situations that lead them to feel confused and upset. In addition, it may be likely that the inherent stresses of university life will, at some time, interfere with academic achievement and personal growth.

The Counseling Center, located on the first floor of Ellsworth Hall, adjacent to the Bernhard Center, is staffed with professionally licensed counselors and psychologists and is accredited by the International Association of Counseling Services. The Counseling Center is thoroughly committed to the need for confidentiality in client/counselor communications. Therefore, confidentiality of the 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 Center Policy on Confidentiality may be obtained at the Center’s reception desk.

Appointments may be requested by telephone, by signing in at the Counseling Center reception desk between 8 a.m. and 5 p.m., Monday through Friday. Students unable to utilize the Center’s services during regular hours may make arrangements for evening appointments. The Counseling Center attempts to service as many students as possible within staffing limitations.

Disability Services

Disability 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 accommodation, textbook taping, accessibility information, handi-van transportation, adaptive equipment, and referral to other campus and community agencies.

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

LEARNING DISABILITY SERVICES

Students with documented learning disabilities may contact the Coordinator of Services for Learning Disabled Students to discuss requests for accommodations or other services. Contact the Coordinator at the Center for Academic Support Programs, 203 Moore Hall, (616) 387-3331 or (616) 387-4411.

Housing

Western Michigan University students may live on or off campus. Two alternatives exist on-campus, Residence Halls and WMU Apartments, and both deliver tremendous value to their residents. The success rate in meeting the diverse needs of their residents is very high and improvements are constantly being made in the process. Students should carefully consider the benefits of on-campus housing when choosing where to live. The listed rental fees are complete. They include all utilities, cable TV, and in most cases, many extra benefits not available off-campus. Opportunities to develop interpersonal skills and interpersonal abilities are more available with an on-campus residence.

Your residence hall application will be sent upon admission to Western Michigan University. An apartment application may be submitted before you are officially admitted to the University. The application date is the basis for assignment of preferences of specific residence facilities. Assignment increases with early application.

Disability Services

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 facilities, aerobics, saunas, television viewing areas, refrigerator rental, pay-your-room program, free VCR use, and academic computer terminals. A variety of rooms are provided with beds, desks, study chairs, dressers and closets.

Any student enrolled at WMU for at least one credit hour may live in a hall. Newly admitted students are automatically sent information (fall during the month of February; winter-in November; spring and/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, women, or extended quiet hours, or international culture. Depending on the hall, men and women may be separated by suite or floor. Two separate halls are also reserved exclusively for men and women.

On 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 and some three or four person room assignments are made in the larger rooms.

Both undergraduate and graduate students are welcome in the halls. During the fall and winter semesters graduate and older students find Davis and Zimmerman Halls of special interest. Students must be at least twenty-one or junior status to live in these areas. French Hall is 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. Residents who must remain in the area make their own alternative housing arrangements during these periods. All residents are permitted to remain in their assigned rooms during the Thanksgiving and spring break recess periods.

RESIDENCE HALLS

Twenty-two residence halls in locations close to every academic hall on campus attract over 5,000 students each academic year. These students represent a variety of backgrounds, cultures, and academic interests.

SERVICES FOR STUDENTS
The award winning WMU Dining Service has an extensive menu developed in consultation with residents and professional dietitians. All hall residents (except those who live in the room-only hall) must choose between three available plans. Most residents select the Continuous Dining Plus Plan which provides all meals except Sunday evening. For persons leaving campus every weekend, the WMU Dining Service is especially unique Monday through Friday, 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 7:00 p.m., six days a week and from 8:00 a.m. until 2:00 p.m. on Sunday. Two dining halls are open until 8:00 p.m. Monday–Thursday. A ten meal per week plan (Monday–Sunday) is also available.

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

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

APARTMENT LIVING

Many students choose to live in one of three Western Michigan University Apartment complexes. Student families, single graduate and certain non-traditional undergraduate students are eligible. The apartments are inexpensive and convenient to campus. Rental rates, which include parking, all utilities and cable television, are about 25 percent less than area complexes.

The apartments are close to academic buildings, recreation areas, libraries, and the student center. Nearly 600 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 616-387-2175 or fax 616-387-4786.

OFF-CAMPUS HOUSING

Approximately 74 percent of Western’s students live off campus in privately owned housing. Thus, a unique service is provided to assist them in locating a place to live. Rental listings of apartments, houses, and sleep-in rooms are maintained and printed for distribution. Listings of students in need of roommates, as well as those available as roommates, are up-dated regularly and carried extremely the thousands of students who live off campus and share their housing costs.

The Office of Off-Campus Life is currently developing a database so that students can access rental or roommate listings from any campus computer terminal, or a home computer with a modem. Before accessing this database, you should have a WMU Student Personal Number (SPN). A SPN can be obtained from the University Computing Center (UCC). All you need is your student ID.

While most students look forward to off-campus living as an opportunity to pursue individual lifestyle, their experiences are often plagued by strained roommate relations and legal difficulties that interrupt their academic achievement. Recognizing the significance of an adequate housing environment for all students, the University’s rental listing program is team with conflict resolution and educational programs. For additional information regarding off-campus arrangements, contact the Office of Off-Campus Life, Room 3510, Faunce Student Services Building, Telephone: 616-387-2336.

SORORITY/FRATERNITY HOUSING

Most houses are privately owned and operated by various fraternity organizations for their members. Currently three fraternities and two sororities occupy on-campus housing. For more information, contact the Office of Student Life, Faunce Student Services Building,

International Student Services

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

OFFICE OF INTERNATIONAL STUDENT SERVICES

The Office of International Services handles the special needs of international students by processing applications for admission, conducting an orientation program for new foreign students, assisting with housing arrangements, and offering personal and social counseling. While at the University, International students are encouraged to participate in academic and social activities as their interests and time allow. International students interested in seeking admission to Western should contact the Office of International Student Services for an application form and instructions. To qualify for admission, a prospective student must demonstrate to the University that he/she is capable of undertaking the academic program being proposed. Before a student can be admitted and the Certificate of Eligibility for a visa (Form I-20 or IAP-66) issued, the following items must be on file: educational records documenting all previous secondary and post-secondary schooling, a financial statement that has been signed and returned from a sponsor showing that adequate funds are available to cover the student’s educational and living expenses for the duration of studies, and proof of English language proficiency (see below).

ENGLISH COMPETENCY OF STUDENTS FROM NON-ENGLISH SPEAKING BACKGROUNDS

Prospective students from non-English speaking countries must submit the scores of a recognized English language proficiency examination prior to initial registration. Applicants who have successfully completed at least forty-five semester hours at another accredited U.S. institution may be exempted from this requirement. If you are interested in enrolling in an English language program, the English as a Second Language (ESL) program for non-native speakers offers courses in English for Academic Study. To qualify for restricted full-time enrollment, a prospective student must present a TOEFL “total score” of at least 550 or MELAB “adjusted score” of at least 75. TOEFL test-takers must take the Test of Written English (TWE) when they take their exam, if available at that administration. To qualify for restricted full-time enrollment, a prospective student must present a TOEFL “total score” of at least 550 or MELAB “adjusted score” of at least 75.

TOEFL test-takers also need to take the Test of English as a Second Language (TEFL) exam, if available at that administration. Applicants can be granted conditional admission until English requirements have been met. (See Student Health Insurance for the University’s policy on health and accident insurance for foreign students.)

ENGLISH LANGUAGE INSTRUCTION FOR INTERNATIONAL STUDENTS

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

• Speaking and Listening Comprehension
• Grammar
• Academic Reading and Vocabulary
• Academic Writing
• Research Paper Writing
• Extra-curricular activities include weekly English table, conversation partners, home visits and various social, sport, and cultural programs.

There are four CELCIS terms per year, two 15-week terms and two seven-week terms (spring and summer). The University Testing and Evaluation Services Office offers the institutional TOEFL at the end of each term. The Certificate of Eligibility for a visa (Form I-20 or IAP-66) is issued by CELCIS for admission to the CELCIS program. Admission to CELCIS does not, however, imply admission to the University for academic study.

For further information and application forms, contact the Career English Language Center for International Students, Western Michigan University, Kalamazoo, MI 49008-3899. Telephone: 616-387-4800; fax: 616-387-4806
Internships
Students seeking information on internships, cooperative education, field placement, and practicum should visit the Student Employment Referral Service. Professional Practice Services, a part of the Student Employment office, is a centralized clearinghouse for employers seeking students to fill internship positions and for students seeking these opportunities.

Assistance with resume writing, letter writing, and application materials is available in groups and on an individual basis. The service also provides shadowing experiences where students can spend from ½ hour to 1 full day observing a professional in a field of interest to the student. The office is located in A-100 Elsworth Hall. Telephone 387-2725.

The Martin Luther King, Jr. Academy
(formerly MKL, Jr. Program)
The Martin Luther King, Jr. Academy is an accelerated teaching and learning development program that has been in existence at WMU since 1965. 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 designed to encourage "marginal" minority students to pursue a post-secondary education. Funded through a grant from the Kellogg Foundation, the program was able to provide scholarships as well as remedial help to its participants.

"Project 73," the original name of the program, began with sixty WMU freshmen coming from high schools throughout Southwestern Michigan. It now is a year-round program, beginning in the summer of the student's freshman year.

The primary purpose of the MLK Academy is to:
1. encourage students who would not otherwise pursue a higher education to do so;
2. provide supportive services—such as academic advising, vocational and personal counseling, and tutoring, to meet 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 Admissions process for freshmen students (a counselor, caseworker, minister, or other person familiar with the family's circumstances may request an application fee waiver). 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.

Students begin their freshman year in the Summer Academy, a three-week accelerated learning program beginning in August. Each student is assigned an Academy leader who is a graduate or upperclass student who functions as friend, student evaluator, liaison, and resource person to the new student. The leaders and the full-time administrative staff work in conjunction with other University departments to provide personal attention and supportive services as needed for each individual student.

The transition from high school to the University community is often a difficult one. By beginning during the summer, the student is allowed time to make some adjustments before the hectic pace of the fall semester begins.

During the summer session, students must take a minimum of six credit hours and a maximum of nine credit hours. A minimum of twelve hours is required during each semester, fall and winter.

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. Awards are made on the basis of need as determined by the Office of Students not eligible for monies based on federal guidelines may secure a Guaranteed Student Loan through a bank in his/her hometown. Telephone: 387-3362.

Minority Affairs, The Division of
The Division of Minority Affairs facilitates the development and continuance of a supportive environment for a diverse 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 this educational process.
2. Offers programs and services in response to ethnically specific student needs and concerns, including cultural awareness and student organizational support aimed at increasing minority student retention.
3. Monitors students impressions and satisfaction with delivery of services from other areas to which they have been referred. Provides feedback to these areas on students' perceptions.
4. Serves as advocate in presenting concerns that affect the quality of life for minority students on the campus of Western Michigan University, and works with students to identify concerns and to develop solutions.
5. Supports programs targeted at pre-college youth in order to increase the participation of minority students in higher education.
6. Provides information and on-campus programming related to the Office of Admissions and Orientation to help increase the recruitment and enrollment of minority students.

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

Off-Campus Life
The Office of Off-Campus Life at Western Michigan University is a service center for the approximately 17,000 students who live off campus and commute to classes from many distances and locations. It is located in Room 3510 of the L. Dale Faunce Student Services Building. Its primary function is to administer a complete rental program for students in need of off-campus housing. Car pools, share-a-ride, roommate listings, and tenant/landlord mediation, are just some of the other on-going services carried out by Off-Campus Life. The success or failure of a student's academic life can often be traced to the living environment. Don't minimize the importance of good housing. Telephone: 387-2336.

Religious Activities
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 including traditional, contemporary, and experimental worship, individual and small group Bible studies, workshops and retreats; study-travel experiences, social concerns, and action groups is available to interested students.

Various church groups provide support for clergy 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 their various churches.

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

The Kanley Memorial Chapel facility includes an interfaith chapel, several meeting rooms, and offices. It is maintained by the University as a center for religious activities and serves as the meeting place for most student religious organizations. It is also the home of Sunday worship services and provides a popular site for weddings. The Kanley Chapel coordinator and seven campus ministers have offices in the bottom level of the building.

In addition to Kanley Memorial Chapel, there are several student centers operated by specific denominations or near campus. Some of these groups offer off-campus groups or services on or near campus is available in the Office of Religious Activities. Telephone: 387-3501.

Sara Swickard Preschool
The Sara Swickard Preschool located at 1211 Knohlwood on campus, is open from 7:00 a.m. to 6:00 p.m. weekdays. The location is convenient for WMU employees and student parents who wish to leave their children on the way to work or class. Children 2½ to 9 years old and attending school full or part-time (2 to 11 hours each day). The program and environment are designed to minimize failure and competition while promoting cooperation, sharing, the thinking, problem-solving, and kindness. The Preschool is licensed by the state of Michigan. Application should be made well in advance. Information is available at the Preschool. Telephone: 387-3847.
Sindecuse Health Center

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

MEDICAL SERVICES

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

PHARMACY

A full-service pharmacy provides prescription medications at a cost savings to students. It also carries a limited amount of non-prescription medications. Prescriptions written by your personal physician from home can be filled, as well as prescriptions written by Sindecuse Health Center medical staff. You may pay for pharmacy items by cash, check, Master Card, Visa, Discover Card, or you may bill your student account. Many major insurance cards for prescription coverage are also accepted. If you have prescription drug coverage through outside insurance, bring the identification card with you.

LABORATORY SERVICES

The center’s full-service laboratory performs most standard diagnostic tests. These 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 personnel. 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

HIV testing is available to all students. For more information, call 387-4419.

SPORTS MEDICINE CLINIC

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

URGENT CARE

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

APPOINTMENT INFORMATION

Students are encouraged to choose a physician or physician assistant with whom they feel comfortable and request this clinician when scheduling appointments. Appointments may be scheduled by calling 387-3290, 8:00 a.m. - 5:00 p.m., Monday through Friday.

If you have an appointment, go directly to the clinician’s office. Plan to arrive ten minutes early for your appointment and plan on the visit lasting at least an hour. If you cannot keep your appointment, let the Sindecuse Health Center know so that your time may be used to help another student. There is a charge if you do not cancel an appointment.

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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 4:36 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. You may obtain a one and one-half hour parking permit at the Health Center parking area in the Lobby. Short-term parking is available in the semicircle drive while you receive your permit.

STUDENT HEALTH FEES

All Western Michigan University students enrolled for seven or more non-exempt credit hours per semester (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) for a minor charge. Part-time students, non-enrolled students, and spouses of WMU students pay the Student Health Fee on their first professional visit of the semester/session and receive the same benefits. Eligibility for use of the Health Center extends from the first day of the applicable semester/session for which the fee has been 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. Visit to hospital emergency rooms, urgent 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, or Discover Card; however, insurance claims will not be accepted. If you pay fees under $1 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.

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 services included in any insurance policy 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 priced 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 proof of minimum$50,000 hospitalization coverage 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.

The insurance coordinator at the Health Center is available to assist students weekdays from 8:11-11:30 a.m. Mondays, Tuesdays, and Fridays; 1:40-3:00 p.m. on Wednesdays, 8-11:30 a.m. on Thursdays, or by calling 387-3266.

STUDENT HEALTH ADVISORY BOARD

The Student Health Advisory Board is designed to bring a diverse group of students together to help plan ways in which Sindecuse Health Center can provide high-quality health services at the lowest possible cost for students. Its members become involved in the planning, service delivery, and funding allocation decisions of the Health Center and participate in continuing quality improvement activities. All students enrolled in Western Michigan University are eligible to serve on the Board as a representative of a Registered Student Organization or in an "at large" position. Any student wishing more information regarding membership is encouraged to contact the Office of Health Promotion and Education, Sindecuse Health Center, at 387-3263.

OFFICE OF HEALTH PROMOTION AND EDUCATION PROGRAMS, SINDECUSE HEALTH CENTER

The Office of Health Promotion and Education offers a wide range of educational programs, consultations, and materials to help students grow toward understanding, maintaining, and enhancing their current and future health. The following resources are offered as a Student Health Fee benefit:

- A Health Promotion Resource Center, located in the Sindecuse Health Center.
• Skill development for building healthy love relationships and making healthy sexual choices (single-session programs and educational materials).
• Information on a variety of sexual health concerns.
• Anonymous HIV Counseling and Testing (minimal fee).
• Nutrition counseling for healthful eating, vegetarian food planning, weight management, eating disorders, sports nutrition, and diet therapy for medical concerns. (minimal fee.)
• Single-session workshops for learning more about vegetarian food planning and reducing dietary fat.
• A five-week holistic approach to long-term weight management focused on skill-building for eating and nutrition management, stress management, increased physical activity, and building a healthy relationship to food.
• Cholesterol screening, scheduled by appointment (minimal fee).
• Stress management skill-building including time management, creative problem solving, changing negative thinking styles, relationship building, relaxation, and honest communication (group programs, personal manuals).
• Stop smoking skills (options include an eight-session group behavior change and recovery program, personal self-help manuals, a take home video, and nicotine patches).
• Self-esteem building programs and materials.
• Blood pressure screening and education.
• American Heart Association Adult CPR certification (minimal fee).

The Office of Health Promotion and Education can also design programs to meet special group needs. Achieving and maintaining optimal health involves appropriate utilization of preventive health care services and commitment to the creation of a healthy lifestyle. Physical, emotional, and spiritual well-being depend on how willing you are to invest in yourself and your quality of life both now and in the future. Call 387-3263 for more information.

_**IMPORTANT PHONE NUMBERS**_  
Appointments:  387-3290  
Information:  387-3287  
Insurance Information:  387-3266  
Pharmacy:  387-3301  
Health Promotion/Health Info:  387-3263  
Sports Medicine Clinic:  387-3248  
HIV Antibody Testing:  387-4HIV

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

**Student Life**  
The mission of the Office of Student Life is to enhance students’ out-of-classroom experience by providing opportunities for personal growth through diverse

Also, the Office of Student Life is responsible for building healthy love relationships and making healthy sexual choices. They offer single-session programs and educational materials. Information is provided on a variety of sexual health concerns. Students can access Anonymous HIV Counseling and Testing for free. Nutrition counseling is available, focusing on vegetarian food planning, weight management, eating disorders, sports nutrition, and diet therapy for medical concerns. A five-week holistic approach to long-term weight management is offered through single-session workshops. Cholesterol screening can be scheduled by appointment, and stress management skill-building programs are available. Smoking cessation skills are also provided, including an eight-session group program. Self-esteem building programs and materials are available. Blood pressure screening and education are offered by the American Heart Association. For more information, call 387-3263.

_**SERVICES FOR STUDENTS**_  

**CAMPUS ACTIVITIES**  
The Campus Activities Board (CAB) is a student agency that provides a variety of cohesive, diversified, and balanced entertainment/programming for the WMU community throughout the academic year. CAB sponsors special events each semester such as the back to school celebration, "Bronco Bash"; WMU Homecoming activities; and the College Bowl Tournament. CAB also sponsors two successful series each year, Bernie's Afterhours and Movies at Miller.

_**LESBIAN, BISEXUAL AND GAY ISSUES**_  
The Office for Lesbian, Bisexual and Gay Issues (L/B/G) exists to promote an open and supportive environment. Gay orientation is experienced as a positive aspect of individual identity. It 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 L/B/G 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 ongoing and collective voice for students in campus affairs. In addition, the WSA offers enrolled students free legal aid, interest free short term student loans, grading the 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 1115 Faunce Student Services Building.

_**WIDR-FM**_  
WIDR-FM, a student-operated radio station broadcasting on 89.1, provides a unique opportunity for Western Michigan University students to gain experience in programming, promotion, and station operation. Volunteers are trained to work with broadcast equipment and are given the chance to speak on air. WIDR offers opportunities in music, news and sports. In off-air volunteer positions, students gain valuable experience in organizing concerts and other public events. Radio broadcast experience is gained through grant writing, sales and the production of promotional materials for broadcasts. Contact WIDR-FM, located 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
Testing and Evaluation Services

Testing and Evaluation Services provides many self-assessment instruments for students interested in vocations or for those individuals who are looking for alternatives. Vocational interest inventories, personality measures, and achievement tests are administered in helping students to make a career decision. There is a minimal charge to cover the test scoring.

Testing and Evaluation Services has the most extensive "Test File" in this area. These files can be of assistance for class projects or general information. They are open to both students and faculty members at no cost and may be checked out.

Information and registration assistance can be obtained on most major required admission tests, including the Graduate Record Examination, Miller Analogies Test, and the College Level Examination Program. Testing and Evaluation Services is located at Pew Wood Hall, East Campus. Telephone: 387-8905

University Computing Services

University Computing Services (UCS) encompasses a wide spectrum of computing and information technologies on campus. Service areas include administrative data processing and academic computing. Various units provide mainframe computing with a variety of software applications and consulting support, workstation labs with software, microcomputing labs with software and consultants, instructional workshops, and instructional support.

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, handicapped services, advocacy, natural resources, and media/public relations. Individual volunteer opportunities typically require a two to four hour weekly time commitment; one-time group projects vary from three to eight hours.

Service projects coordinated by SVS include Alternative Spring Break, into the Streets, Service Week, and the Volunteer Opportunities Fair. Presentations are offered throughout the academic year and include information on service sites, volunteer positions, and how to get involved. Students are encouraged to visit our office located in the Lee Honors College. Telephone: 387-3230.
the Veterans Administration are advised of them shortly after the close of each semester.

Veterans' Assistance

Veterans benefits must be obtained at the Office of the Registrar.

grades received is maintained in the Office of the Registrar. Proof of a change in their additional rights and responsibilities.

The Office of the Registrar on the third floor of the Registrar. A student copy of this record is available upon personal request, with proper identification. Student copies picked up in person are free; there is a $3.00 charge for mailed copies.

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

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

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

Women's Resources and Services

Women's Resources and Services, a unit of the Office of Student Life, provides a variety of educational programs and supportive services to students that focus on women's concerns and gender issues. Programs and services are free and available to both women and men.

SEXUAL ASSAULT EDUCATION PROJECT

SAEP provides educational programs and materials focusing on acquaintance and date rape awareness and prevention. Programs are presented by female and male student Peer Educators for academic courses, residence halls, fraternities and sororities, athletic teams, and freshman orientation. The WRS office maintains a large collection of resource materials on this issue for student use.

SEXUAL ASSAULT VICTIM ASSISTANCE

The WRS office provides students who are victims of a sexual assault or sexual harassment with support, information, referral, and assistance. Staff offer emotional support; information on University policies and procedures, legal rights, and options for action; referral for counseling and other needed services; assistance with academic issues and Student Judicial Affairs hearings.

WOMEN'S ISSUES STUDENT EDUCATOR (W.I.S.E.) PROGRAM

The W.I.S.E. Program uses trained female student Peer Educators to present workshops for students on a variety of topics that are of special interest to women. W.I.S.E. workshops are available to residence halls, sororities, and other student organizations.

OTHER SERVICES

WRS serves as a clearinghouse for information about women's issues, organizations, activities, and services on campus and in the community. The WRS resource library includes information on special sources of financial aid for women.

VOLUNTEER OPPORTUNITIES

Both the Sexual Assault Education Program and the W.I.S.E. Program recruit and train female and male students to serve as Peer Educators. Students who serve as Peer Educators grow in self-confidence, improve their communication skills, learn how to facilitate a group discussion, and become very knowledgeable and articulate about an important issue.

Women's Resources and Services is located on the third floor of Ellsworth Hall. For information or assistance, students are invited to visit or call 387-2990.
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, softball, basketball, indoor and outdoor track, cross country, tennis, gymnastics, ice hockey, and soccer. Women's teams represent the University in basketball, cross country, gymnastics, softball, tennis, indoor and outdoor track, and volleyball.

Athletics are governed by the Athletic Board, which adheres to the policies and principles established by the National Collegiate Athletic Association. Western Michigan University is a member of the Mid-American Conference. Other members of the conference are Akron, Bowling Green, Central Michigan, Eastern Michigan, Kent State, Miami (Ohio), Toledo, Ball State, and Ohio. The teams winning Mid-American Conference championships in men's and women's basketball, baseball, and volleyball automatically qualify for the annual NCAA playoffs. The hockey team is a member of the Central Collegiate Hockey Association and the champion automatically qualifies for the annual NCAA Tournament.

The Athletic Board
The Mid-American Conference consists of ten universities associated for the purpose of intercollegiate sports competition. The league is organized and controlled by the Presidents' Council, which appoints a commissioner to oversee league activities.

On campus, policy relating to the conduct of men's and women's intercollegiate sports is recommended to the President by the Athletic Board.

External Affairs
The Office of External Affairs is responsible for cultivating productive relationships with a variety of University constituencies, for providing leadership to other offices of the University in matters relating to external constituent relations, and for projecting a positive image of the University to its constituents and to the general public. A significant portion of the total financial support and other forms of support for the University is directly related to the efforts of the Office of External Affairs.

The office is divided into three major areas, alumni relations, development (or fund raising), and legislative affairs. There are several other areas that report to the vice president for external affairs and general counsel, including the University's legal counsel, collective bargaining and contract administration, and affirmative action.

Legislative Affairs
Western Michigan University is a state-assisted university, deriving a significant percentage of its annual operating budget and capital improvement funds through allocations by the State of Michigan. The Office of Legislative Affairs is responsible for representing the needs, interests, and accomplishments of the University to appropriate elected and appointed state officials. The legislative affairs staff serve as an indispensable conduit or link between the University and the state government.

The activities of the foundation and the actual fund-raising programs on behalf of the University are supported by and administered by professional and clerical/technical employees in the Development Office of the University. The staff is responsible for fund raising in the areas of annual support and major gifts from alumni and other individuals and from corporations and other organizations. The staff is also responsible for gift accounting and record-keeping, gift acknowledgment and donor recognition, and a variety of fund-raising related activities and special events. The offices of the WMU Foundation and the Development Office are located in Walwood Hall.

Alumni Relations/WMU Alumni Association
There are more than 130,000 graduates of Western Michigan University. The Office of Alumni Relations is responsible for maintaining and enhancing the lifelong relationship that exists between the University and its former students. The office is located in the McKee Alumni Center in Walwood Hall. Approximately 80 percent of all alumni live in a six-state Great Lakes region, about two-thirds of Western's alumni are Michigan residents, and one out of every five reside in Southwest Michigan. The alumni relations staff endeavors to build strong relationships with alumni regardless of where they live. There are a growing number of regional alumni organizations (chapters) serving alumni in cities throughout the United States, and increasing efforts to build ongoing relationships with alumni in other countries. The responsibility for maintaining and enhancing the relationship between the University and its alumni is shared with the WMU Alumni Association, an organization of dues-paying members governed by volunteer alumni leaders who comprise the association's board of directors. Among the many activities that are jointly undertaken by the alumni relations staff and the WMU Alumni Association are Homecoming, a variety of class reunions and reunions of other alumni groups, regional alumni meetings and activities, and formation and development of constituent alumni societies. The Alumni Association sponsors annual recognitions for "Distinguished Alumni" and for "Excellence in Teaching" among members of the University faculty.

The association maintains a link with current students through the Student Alumni Association (SAA), which plans a variety of programs throughout the year designed to increase the interaction between current and former students.

Development/WMU Foundation
Private fund-raising efforts of the University fall under the authority and coordination of the Western Michigan University Foundation, an independent nonprofit 501(c)(3) corporation created in 1976 "to promote and to provide private financial support to Western Michigan University."

The WMU Foundation is composed of approximately 200 members—alumni, business and civic leaders, and major benefactors of Western. It is governed by a forty-two member volunteer board of directors. Under the charter of the WMU Foundation and by policy of the University, all private gifts to Western are processed through the WMU Foundation, regardless of the designation of the gift. In addition to its primary role of actively soliciting private support, the foundation is responsible for the management of gifts received and for appropriately distributing gift revenues to the University.

The activities of the foundation and the actual fund-raising programs on behalf of the University are supported by and administered by professional and clerical/technical employees in the Development Office of the University. The staff is responsible for fund raising in the areas of annual support and major gifts from alumni and other individuals and from corporations and other organizations. The staff is also responsible for gift accounting and record-keeping, gift acknowledgment and donor recognition, and a variety of fund-raising related activities and special events. The offices of the WMU Foundation and the Development Office are located in Walwood Hall.

Faculty Senate
The Faculty Senate is composed of members elected by the faculty to represent the departments and the University at large, and others appointed by the President. It meets each month to promote the common interests of the University and give the faculty a voice in the determination of institutional policy.

Faculty Senate Councils are composed of faculty members elected by the Faculty Senate for three-year terms, plus ex officio members, several members appointed by the President of the University, and student members selected by the Western Student Association and the Graduate Student Advisory Committee. The terms of elected members expire in April in a staggered year sequence. The Councils include: Admissions, Financial Aid, and Student Affairs; Budget and Finance; Campus Planning; Graduate Studies; Regional Education; Research Policies; and Undergraduate Studies. For names of members and further information, contact the Faculty Senate office. The Faculty Senate President for 1995-96 is Mary Anne
Bunda and the Senate Vice President is Robert Eisenberg.

ADMISSIONS, FINANCIAL AID AND STUDENT AFFAIRS COUNCIL
The Admissions, Financial Aid, and Student Affairs Council is responsible for initiating, reviewing, developing and recommending policies pertaining to the academic and student services at Western Michigan University.

BUDGET AND FINANCE COUNCIL
The Budget and Finance Council functions to: (1) review the budgetary process; (2) review and make recommendations concerning the funding of new academic programs, both on and off campus; and (3) conduct special studies as requested by the Executive Board of the Faculty Senate.

CAMPUS PLANNING COUNCIL
The Campus Planning Council serves as an advisory body to the administration and Faculty Senate on matters related to the acquisition, design, renovation, maintenance, and general use of all classroom buildings, faculty office space, residential units, recreational facilities, and lands owned by the University. In this capacity, the Council: (1) develops and recommends policies to provide a framework within which campus agencies may act in making administrative decisions; (2) develops procedures for the evaluation of policy decisions and administrative actions; (3) processes information brought before the Council from the administration, faculty, and students which will guide the Council in making informed recommendations in its areas of concern; and (4) reviews all major planning proposals of the University which call for decisions regarding building sites, space allocation, long-range campus growth and development, or which impair, limit, or have any major impact on the esthetic, physical, or socio-ecological environment of the campus, community, or region.

GRADUATE STUDIES COUNCIL
The Graduate Studies Council reviews, develops, and recommends policy regarding graduate education at Western Michigan University. Policy recommendations include, but are not limited to, the application of students to the graduate college, development of graduate curricula and approval of graduate programs, selection of graduate faculty, awards and fellowships, and graduate student personnel practices. Reviews include, but are not limited to, existing programs, proposed new programs, significant program changes, the academic standards of graduate level programs, and reports related to graduate programs that are submitted to accrediting bodies on behalf of academic units. The work of the Council is accomplished through standing and ad hoc committees which act on behalf of the Council, within the framework of its policies and subject to its review.

REGIONAL EDUCATION COUNCIL
The Regional Education Council is responsible for reviewing, developing and recommending policies related to continuing education, continuing education and other related public service at the University. Policy reviews and recommendations include, but are not limited to, off-campus credit courses and degree programs, and their relationship to on-campus offerings; non-credit programming, including conferences, seminars, workshops, and credit courses offered through the Division of Continuing Education; and public service programming.

RESEARCH POLICIES COUNCIL
The Research Policies Council is responsible for reviewing, developing, and recommending policies dealing with the enhancement and implementation of research and creative activity in the University.

UNDERGRADUATE STUDIES COUNCIL
The Undergraduate Studies Council is a policy recommending and review body with oversight over any matter related to the undergraduate curriculum at the University. Thus, for example, it is concerned with the establishment of new departmental programs, new interdisciplinary undergraduate programs, changes between existing programs or courses, and needs for additional or specialized instruction. The USC also serves as the appeal body for disputed recommendations of the Undergraduate Curriculum Committee.

Libraries, University
The University Libraries consist of the Dwight B. Waldo (Music and Dance Library, and the Education Library). The total collection, which numbers over three million bibliographic items, includes books, bound periodicals, manuscripts, maps, documents, and materials in microform. About 5,450 periodical and serial titles are currently received.

The main collection is housed in the Dwight B. Waldo Library, which is named for the first president of the University. Built in 1959, it was enlarged in 1967 to almost double its original size. A 105,000 square-foot addition and renovation of 145,000 square feet of existing space was completed in 1991. The new addition provides room for the ever-expanding collection as well as 1,500 student stations.

The Library system is a depository for United States and Michigan government documents. Microprint editions of selected United Nations documents and official records are also available.

A microform collection of more than 1,345,000 copies of such items as the Human Relations Area File, the American Periodical Series, Early American Newspapers of the 18th and 19th centuries, the U.S. National Archives, Early English Books printed in Great Britain from 1475-1700, and ERIC documents (documents in educational research published by the Educational Resources Information Center).

Some special collections are maintained by the library, and holdings have been especially strengthened in some subject areas to support University programs:

1. The Ann Kercher Memorial Collection is an extensive collection of materials on Africa south of the Sahara. Started more than two decades ago, the collection has grown rapidly to become a noteworthy addition to library resources.

2. Library holdings on Southern Asia are another area of special strength. Together with the Kercher African collection, they help support the University’s commitment to area studies.

3. Another area of collection strength is the history, religion, philosophy, and culture of the medieval period—holdings which help support the Medieval Institute at the University’s Medieval Institute. The collection also includes rare books, manuscripts, and incunabula, most of which are on an indefensible loan to Western from the Abbey of Gethsemane. Over 900 of the some 9,000 volumes in this collection are rare items of 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 Regional History Collection is a unique group of items on the thirteen counties of Southwest Michigan. In addition to books, this collection contains manuscripts of early area residents.

6. The C.C. Adams Ecological Collection consists of the personal collection of books and papers of the pioneer American ecologist, Charles C. Adams.

7. The Map Library, a unit of Public Services, is the second largest academic library in the State of Michigan and the third largest university library in the state. The present collection of about 190,000 items includes Army and U.S. Geological Survey maps, which are catalogued and readily available for use. In addition to the maps, the Map Library also possesses more than 1,000 atlases.

The Music and Dance Library is located in the Dorothy U. Dalton Center. In addition to more than 35,000 books and scores, and extensive holdings in music periodicals, this branch contains a collection of over 13,000 phonodiscs and tapes, and extensive listening facilities.

The Education Library in Sangren Hall has some 555,000 bibliographic items and receives more than 600 periodical titles.

The University Libraries have a number of computer-based services available to users. WESTNET, the West Michigan Information Network, provides access to the following databases: FINDER, Western’s online catalog, KELLY, a regional online catalog, and DataQuest, selected online indexes. FINDER is the online catalog with author, title, subject and keyword access to the University Libraries’ collections. KELLY is a regional online catalog containing the holdings of member West Michigan libraries. KELLY can also be searched by author, title, subject and keyword. DataQuest, a powerful retrieval service, contains online indexes to journal articles and report literature in select subject disciplines. Terminals located in Waldo Library and its branches give the user access to the databases. Users can personally search online for material in a subject area and compile and print the references to use in writing papers or completing reports or other projects.

Indexes on CD-ROM terminals provide additional automated access to periodical articles in general interest, science and technology journals, in business journals, and in education documents and journals. A special CD-ROM index provides access to the NEWSBANK database of articles from newspapers all over the country on a variety of topics.

General specialized reference service is provided at the main Reference and Information Desk, at the Science Reference Desk, in the Documents Department and in the Maps Department in Waldo Library. Reference collections of indexes, abstracts, dictionaries, handbooks, bibliographies, etc., are maintained in each of the University Libraries, and reference librarians offer personal assistance in finding the books, information, and other resources needed for class or research related problems.

An online automated retrieval system (OARS), offered by the library, accesses databases in nearly every subject. The computerized operation allows users to significantly shorten time spent conducting searches for research projects. It is available to faculty, staff, and students on a cost retrieval charge basis. Inquiries about this
service may be made at Reference Services in the main library and at all branch libraries. Interlibrary loan service is available to both students and faculty to provide access to materials owned by the University Libraries. Requests for loans may be initiated at public service desks in all libraries, as well as at the Interlibrary Loan office in Waldo Library.

Students enrolled in off-campus classes are always welcome at the libraries on campus. Remote access to the library’s online databases is available from the computers. Students are provided direct access to an online index to articles in over 13,000 journals with the option of ordering for a fee 24-hour delivery of an article to a fax machine of their choice. Information about library access and services is available at each of the regional centers and other sites designated by the regional centers.

Media-related Services

University Video Services
1450 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
0430 Dunbar Hall
(616) 387-4997

EduCABLE is a full service cable television, radio and audio distribution system serving 3900 residential units on campus and some academic buildings. The system offers forty-three channels of television ranging through education, instruction, information, enrichment and entertainment. Twenty radio stations, including Western’s WMUK and WDR, are retransmitted for best fidelity stereo reception in resident hall rooms along with five satellite delivered audio services. EduCABLE is operated in partnership with the Telecommunications Department.

EduCABLE Access Center (Channel 7) and Electronic Bulletin Board

The EduCABLE Access Center is designed to encourage the free flow of communication among students. Students and student organizations can create video programs to share with on-campus residents. Channel 28 is designed for general public viewing and is intended to promote WMU educational and cultural activities. Events such as public lectures, seminars, concerts, plays, film series and dance events are announced on this electronic bulletin board. EduCABLE Channel 28 will be displayed in a growing number of public areas on the WMU campus and events will be delivered to area cable systems for use on their higher education channels.

Video Production
1450 Dunbar Hall
(616) 387-5020

The Video Production area within the University Video Services, comprised of a team of media specialists provides professional support to departments, faculty and staff for the development of graphic, photographic, audio and/or video projects. Services include:
- Media consultation
- Photography (slide duplication, prints)
- Graphic design and production for video
- Audio production and duplication
- Video production
- Teleconferencing support services
- Telecourse design and production
- Multi-Media/Interactive Video production
- Computer animation

The primary mission of Video Production is to serve the instructional needs of the University community, however, other projects are welcome as long as they are of a non-profit, non-partisan or non-religious nature (except those designed by faculty for classroom use).

Dunbar Audiovisual Equipment Center
2420 Dunbar Hall
(616) 387-5060

The Audiovisual Unit of Technical services provides faculty, staff and students of the University with audiovisual equipment. The unit includes an audiovisual equipment distribution center in Dunbar Hall. Services include audiovisual consultation, maintenance service for audiovisual equipment, purchase recommendations, and trouble shooting.

AV Equipment
Faculty, staff and student organizations can request AV equipment by contacting the equipment room in Dunbar Hall at 387-5060. Twenty-four hour notice is preferred, but if the desired equipment is available, it can usually be picked up immediately. There is no charge for instructional use of AV equipment. For non-instructional use, there is a charge, which varies by equipment item requested.

Media Utilization
1450 Dunbar Hall
(616) 387-5003

The coordinator provides information on media resources and arranges satellite-delivered 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
1490 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 transmission/teleport and diverse video production capabilities.

Technical Services
1450 Dunbar Hall
(616) 387-5780

Technical Services offers engineering support for various media units within University Video Services and to the University community. The unit operates and maintains the various electronic facilities of the Video Services including the WMUK radio studios and transmitter/tower; television studios, cable television network, academic programming, electronic classrooms, lecture halls, satellite uplink and downlink equipment and audio-visual maintenance and repair services for the University. Staff of Technical Services also consult with other units of the University on Technical matters.

Musical Activities

Numerous musical activities and organizations at Western Michigan University are available for the cultural enrichment of the student. Faculty members, students, and guest artists provide a schedule of more than three hundred on-campus recitals every year, to which all University students are invited. Students may participate actively in musical life on campus by joining one of the many ensembles—the Marching Band, Symphonic Band, Concert Band, Orchestra, University Chorale, Collegiate Singers, Gold Company, Grand Chorus, Jazz Orchestra, Jazz Lab Band, Treble 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.

On-line Campus Kiosk Services

These free-standing, computerized information guide-posts (known as kiosks) are located in the Faunce Student Services Building, the Student Recreation Center and the Bernhard Center. These on-line, interactive multi-media kiosks provide quick access to a variety of campus information. Such information includes campus events, a current and complete listing of student organizations and agencies, building maps, WMU history, key people and places, and much more.

Parking

Detailed regulations concerning the use of motor vehicles on campus are available from the Parking Violations Bureau of the Department of Public Safety. All students are eligible to park a motor vehicle on University property: however, they must first register their motor vehicle, radio, and/or moped with the Parking Violations Bureau (located in the Public Safety Annex) and pay a registration fee. Information concerning parking regulations, permits, and use of parking violations can be obtained by visiting the office, located in the 2300 block of West Michigan Avenue across from Faunce Student Services Building or by telephoning 387-4609 during normal University business hours.

Police

Located at 511 Monroe, off the 1300 block of West Michigan Ave., the Department of Public
Safety is open 24 hours a day, providing a full range of police services through the use of a uniformed patrol divison, a detective divison, and a communications center. The Department of Public Safety is responsible for investigaitng 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. To that goal, the department's divisions and bureaus have coordinated their efforts to create and maintain a feeling of security and safety within the University community.

Information can be obtained by visiting the office, telephoning 387-5555 or 911 in an emergency. Questions concerning parking permits and parking violations should be directed to the Parking Violations Bureau in the Public Safety Annex located in the 2300 block of West Michigan Avenue across from Faunce Student Services Building. Telephone 387-4609 during normal University business hours.

### Publications

**Western Herald**, WMU's student newspaper, is published Mondays, Tuesdays, Wednesdays, and Thursdays during the fall and winter semesters, Monday and Thursday during the spring session, and Wednesday during the summer session. The Western Herald is made available to students partially through support from the general fund of Western Michigan University. All positions on the paper are filled by students with the exception of the general manager/advisor. Western News is the official publication for faculty and staff members. It is published each Thursday during fall and winter semesters and every other week during spring and summer when classes are in session, by the Office of Public Information, which also produces the student in association with the Office of Alumni Relations. The Westerner is published four times each year for alumni and other friends of the University.

**Reading Horizons**, a journal published five times per year is devoted to the teaching of reading at all levels, and is published by the Department of Education and Professional Development and the College of Education.

**The Dashing Poet**, a journal of English publishes a number of journals including: **Comparative Drama**, a scholarly journal, circulated nationwide, edited by members of the English Department.

Other academic areas that publish scholarly works include: Institute for Cisternia Studies, Department of Mathematics and Statistics, Evaluation Center, Medieval Institute Publications, and New Issues Press.

### Radio

**WMUK** is Western's full power stereo public radio broadcasting service, operating at 102.1 on the FM dial with a power of 50,000 watts. **WMUK(FM)** began broadcasting in 1951, with a power of 400 watts. In 1955 a Kellogg Foundation grant made possible a power increase to 33,000 watts. In 1973, through a federal grant, WMUK increased its power to 50,000 watts and moved its transmitting facilities to a site 10 miles north of campus. WMUK now serves an area 80 miles in radius, this area includes most of the southwestern quarter of the state.

**WMUK(FM)** provides a cultural extension of the University through its broadcasts of campus, community, and area events.

Through the satellite-linked National Public Radio network of stations, WMUK provides listeners with outstanding programming in the line 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.

**WMUK(FM)** is a charter member of NPR, the National Public Radio network of over 500 non-commercial radio stations.

**WMUK(FM)** has won many honors for its programming over the years, including the **Major Armstrong Award** for excellence in community service programming, the **Corporation for Public Broadcasting Award** for extraordinary service to the community, the **Allan P. Dalglish Award** for radio excellence in preschool education, and the **George Foster Peabody Award** for meritorious service in broadcasting.

**WIDR(FM)**, a 100-watt station operated by students, broadcasts on 88.1. 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.

### Substance Abuse Services

University Substance Abuse Services, located in the Sindecuse 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 Center, Division of Student Affairs, the program offers information assessment, training, counseling and supportive therapy, referral and follow-up services to individuals and groups. Also offered are support groups to those students seriously interested in exploring their relationship with mood altering drugs (alcohol, marijuana, stimulants, narcotics, depressants and barbiturates) as well as groups for children of alcoholics.

University Substance Abuse Services is licensed by the state of Michigan Department of Public Health and is directed by a nationally certified substance abuse therapist and professor of counseling. All services are free and completely confidential as required by state and federal law. Students are encouraged to make an appointment through the Sindecuse Health Center reception area, or, by calling 387-3257.

### Theatre

All students in good academic standing, regardless of major or minor, may participate in the University Theatre program of the Department of Theatre. Housed in the excellent and spacious Irving S. Gilmore Theatre Complex, opportunities each year include acting, arts management, design, and technical work in faculty-directed productions for public performance on the proscenium and arena stages, as well as student-directed "Footlight Productions."

### Informal Recreation

Informal recreation permits individual choice of activity. Various facilities are available on a drop-in or reservation basis including basketball courts, volleyball courts, racquetball courts, tennis courts, indoor and outdoor tracks, fitness/weight room, and swimming pools. Other open recreation opportunities include badminton, table tennis, climbing wall and wallyball. Equipment for various activities may be checked out with a valid ID card from Equipment Issue located in the Student Recreation Center.

### Outdoor Recreation

The University Recreation system also includes a lighted, competition-style outdoor track; tennis courts, soccer fields, intramural fields, and a sand volleyball court. Select outdoor equipment may be checked out with a valid ID card from the Student Recreation Center. Cross country ski equipment is available for weekend rental.

### Intramural Sports

Intramural Sports are available to students, faculty and staff who are interested in competitive activities. The program offers both team and individual sports, such as basketball, volleyball, soccer, softball, ice hockey, touch football, tennis, racquetball, badminton and much more. Intramurals provide opportunities for individuals to participate in sports experiences that will help them to develop team building and leadership skills. These experiences permit participants to set goals, relate to others, participate in physical activity, and enrich their lives.

Opportunities for leadership are available for students who wish to officiate contests.

### Fitness Programs

Fitness classes are available for individuals interested in improving their health and physical development through safe and effective exercise programs. A variety of instructor-led classes are offered, including back care, water exercise, high/low impact 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 at designated times to instruct on proper use of the equipment and to provide exercise training guidelines to meet personal goals.

PhytStyies
PhytStyies is a fitness testing program designed exclusively for Western Michigan University students. The program offers free-of-charge fitness assessments and individual exercise program development for students who wish to develop and maintain healthy levels of physical fitness. The testing package includes health risk screening, body composition analysis (% body fat), and physical assessments for flexibility, muscular strength and endurance, and cardiovascular endurance. A consultation is available to obtain personal exercise recommendations and guidelines based on current levels of physical fitness and personal goals.

Climbing Wall
The WMU Climbing Wall is designed to challenge and teach participants about the unique sport of indoor climbing. The wall is a top-rope system where climbers are harnessed in for safety. SRC members who wish to climb the wall must complete the URPF Climbing Clinic or pass the Department of Health, Physical Education and Recreation Climbing Class. Through the clinic or class, 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 or two special events each semester, such as National Girls and Women Sports Day, Spike Fest Volleyball Tournament, Jump Rope For Heart, Schick Three Player Basketball Tournament, and the Turkey Trot Two Mile 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.
ANNUAL SECURITY REPORT

September 1, 1994
Department of Public Safety

Western Michigan University is concerned about the safety and welfare of all students, faculty, staff, and visitors, and is committed to providing a safe and secure environment. Because no campus is isolated from crime, Western Michigan University has developed a series of policies and procedures that are designed to ensure that every possible precautionary measure is taken to protect persons on campus. Although we have been fortunate in not experiencing a number of serious crimes, it would not be honest to state that such incidents have not taken place. We have taken numerous steps to enhance security in our buildings and on our grounds. Additionally, we wish to provide all members of the University community with the facts about the policies and programs that are designed to increase safety and reduce crime.

THE DEPARTMENT OF PUBLIC SAFETY

The Department of Public Safety is located at 511 Monroe, just off the 1300 block of West Michigan Avenue, and is open 24 hours a day, providing around-the-clock protection and services to the University community. Officers are on duty 24 hours a day, 7 days a week, 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 while investigating 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 Sexual Assault Victim Guarantee for additional information.

The University's telephone system supports both 911 and 123 as emergency numbers that automatically ring in the police radio room. There are over 75 emergency police phones mounted on the outside of various buildings and in the two parking structures. These phones automatically call the police radio room when the red button is pushed. Eighteen police call boxes 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 is 387-5555, from on-campus phones dial 7-5555.

The non-emergency telephone number for 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 four 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. The student vehicle escort service consists of up to 4 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 any two locations on campus. 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 REPORTING

Numerous efforts are made to advise members of the University community on a timely basis about campus crime and crime-related problems. These efforts include the following:

- Annual Report A comprehensive annual report of crime-related information is compiled, published, and distributed. This annual report is available to any member of the University community.
- Student Newspaper The student newspaper Western Herald publishes a weekly summary of campus crime that occurred the preceding week. This summary is prepared by student reporters who have access to police crime reports.
- Special Alerts If circumstances warrant it, special printed crime alerts can be prepared and distributed either selectively or throughout the campus.
- Federal and State Crime Reports The University Police, since its inception in July 1973, have submitted crime data to the Michigan State Police which is also forwarded to the Federal Bureau of Investigation. Summaries of this crime data is released annually in the Annual Report of Crime in Michigan, Uniform Crime Report and Crime in the United States, Uniform Crime Reports.

CRIME STATISTICS

The following crimes were reported to the University Police.

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<tr>
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</thead>
<tbody>
<tr>
<td>Murder</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>Sex Offenses</td>
<td>1</td>
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<td>Robbery</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Aggravated Assault</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Burglary</td>
<td>14</td>
<td>26</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Motor Vehicle Theft</td>
<td>16</td>
<td>23</td>
<td>3</td>
<td>12</td>
</tr>
</tbody>
</table>

The following arrests were made by the University Police.

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Liquor Law Violations</td>
<td>30</td>
<td>48</td>
<td>54</td>
<td>69</td>
</tr>
<tr>
<td>Drunk Driving</td>
<td>102</td>
<td>159</td>
<td>152</td>
<td>128</td>
</tr>
<tr>
<td>Drug Abuse</td>
<td>5</td>
<td>8</td>
<td>16</td>
<td>18</td>
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<tr>
<td>Weapons</td>
<td>1</td>
<td>3</td>
<td>2</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, wherever 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:

- 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.
- 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.
- Operation Identification Operation Identification — the engraving of drivers license numbers on items of value — is strongly promoted and made available free-of-charge.
- 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 Sexual Assault — Statement of Guidelines, Programs and Procedures for more information.

Enhanced Telephone System

All on-campus telephone calls made to the Department of Public Safety's business number (387-555) or the emergency number (911) display the number of the originating telephone instrument. This enables the police dispatcher to determine the location of the call to Insure Public Safety's immediate response to 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.

Alarm System

A sophisticated alarm monitoring system, located in the Department of Public Safety, monitors a comprehensive network of security, fire, and panic alarm systems.

RESIDENCE HALL SECURITY

All interior residence hall doors to the living areas are locked 24 hours a day. Non-residents must be escorted through the lobby. All interior residence hall doors to the living areas are locked 24 hours a day, and non-residents must be escorted through the lobby. In most halls, exterior doors except the front door are locked 24 hours a day, and non-residents must be escorted through the lobby. Students are expected to enter only through lobby doors.

Signage

A guest log and are not permitted to come through the door. Non-residents must sign a guest log and are not permitted to enter unless accompanied by a resident host.

Door Locks

Keys to the front door (for entry during the period when the door is locked) and to their own rooms are provided to residents at the time of check-in and must 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 provides for a lock change within one hour of the report of a lost key.

All residence halls are equipped to accept emergency calls from people who are not residents. The remaining exterior doors cannot be opened by key.

Maintenance of Campus Facilities

The physical plant department maintains university buildings and grounds with a concern for safety and security. It inspects campus property promptly and repairs affecting safety and security, and responds immediately to reports of potential safety and security hazards, such as broken windows.

Public Safety staff (including student watch and escort service employees) residence hall staff, and building coordinators daily collect and report any suspicious looking people whom they feel do not belong in the area or any unusual incidents to the Department of Public Safety.

The University Substance Abuse Services located in the Student Health Center and the Campus Substance Abuse Service located in the Sindecuse Health Center staffed by licensed substance abuse therapists. They provide free confidential service to students who are referred for assessment or who seek assistance through the Student Conduct Office. They do not receive information about substance use and abuse and about relevant University services at an orientation program preceding their enrollment.

Weapons Possession

Unlawfully possessing or using of firearms, flammables, explosives, toxic or dangerous chemicals, or other dangerous substances or compounds, and other lethal weapons is prohibited on University property or in University housing. 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 necessary. Individuals must assume responsibility for their own personal safety and the security of their personal belongings by taking simple, common sense precautions. For example, although the campus is well-lighted, an individual—male or female—may feel more comfortable using the University Police escort service when returning to the residence halls late at night. Room doors should be locked at night and when the room is unoccupied. 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. Valuable items 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.

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 that occurs on campus, the Department of Public Safety guarantees you the following:

1. We will meet with you privately, at a place of your choosing in this area, to receive the information on the assault.
2. Your name will not be released to the public or media.
3. You will not be pre-judged, nor be blamed for what occurred.
4. Your complaint will be handled with sensitivity, understanding, and professionalism.
5. If you feel more comfortable talking with a female or male officer, we will do our best to accommodate your request.
6. We will assist you in arranging medical care or treatment that you need.
7. We will assist you with contacting a counselor and make available other resources to help you through this process.
8. Your complaint will be thoroughly investigated to help you achieve the best outcome. This may involve the arrest and full prosecution of the suspect responsible. You will be kept informed of the progress of the investigation and/or prosecution.
9. We will continue to be available to you. To answer your questions about the procedures, systems and processes involved (prosecutor, courts, etc.) and to be a listening ear if you wish.
10. Your complaint will be taken seriously, regardless of your gender or the gender of the suspect.

If you have been sexually assaulted, call the WMU Department of Public Safety at 387-5555 and say you want to privately make a sexual assault complaint. You may call any time of day or night.

If we fail to achieve any part of the above guarantee, the Director of Public Safety will meet with you personally to address any concerns. DPS wants to help make the WMU campus safe for all students, faculty, staff, and visitors.

Sexual Assault: Statement of Guidelines, Programs and Procedures

Western Michigan University recognizes that sexual assault is a serious social problem that occurs among college students as well as within other segments of our society. The University makes a strong commitment to work toward preventing sexual assault within our community, to provide support and assistance to sexual assault victims, and to impose sanctions on those who have been found guilty of committing a sexual assault. Our goal is to foster 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 sexual offenses, both forcible and non-forcible.

Prevention Efforts

The Sexual Assault Education Project (SAEP), an ongoing program of the 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 UNIV 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 campus groups as freshman orientation, resident and off-campus students, international students, specific campus departments, academic classes, and student organizations. Printed crime prevention materials are distributed during presentations and at various locations throughout campus.

RESPONDING TO SEXUAL ASSAULT

The University recognizes the right of a sexual assault victim to decide, without pressure or coercion, what action she will take following an assault. The University encourages students to report all crimes to the police and pursue action against offenders through the University judicial process. The University makes information available to students about sexual assault, victim rights, options, and resources for help. Staff also assist victims in carrying out their decisions and accessing needed services.

The University encourages victims of sexual assault to take the following steps following an assault:

1. Preserve physical evidence. A special physical examination performed at the hospital will be helpful if the victim later decides to prosecute the assailant. To preserve evidence, the victim should not wash, brush teeth, comb hair, use the toilet, douche, destroy clothing or straighten up the area where the assault occurred. The victim should also bring another set of clothing to the hospital, since the clothing a victim had on during the assault will probably be taken into evidence.

2. Report the assault to the police—dial 911. It is the victim’s decision whether or not to report the assault to the police. Reporting a sexual assault to the police will protect the victim and others from possible future victimization by helping public safety officers apprehend the assailant. A police report also maintains the victim’s future option of criminal prosecution, and helps support a University disciplinary action or a civil law suit against the perpetrator. Making a police report does not obligate the victim to prosecute the assailant. Whether or not the case will be prosecuted is a decision that is made later, based on a number of factors. Except as otherwise required by law or court order, the Department of Public Safety will not release the victim’s or the suspect’s name or any identifying information to the media or the 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, she should at least 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 Student Judicial Affairs, (387-2160). A detailed description of the process is included in the Student Code, copies of which are available at many offices on campus, including Women’s Resources and Services.

Sexual assault victims are assured the following rights within the University judicial process:

1. The right to be present during the entire proceeding.
2. The right to have a counselor, Sexual Assault Victim Advocate, support person, or lawyer present throughout the process to advise and provide support.
3. The right to not have their sexual history discussed during the proceedings, except as it relates to the specific incident in question.
4. The right to relate their account of the incident.
5. The right to be informed of the results of the judicial proceeding.
6. The right to have their name and any identifying information kept confidential, except as otherwise required by law, court order, or University policies or needs.
7. The right to a speedy hearing and decision.

A student charged with committing sexual assault is assured of the same rights. A student found guilty of committing a sexual assault or other sexual offense by Student Judicial Affairs will be given a penalty appropriate to the offense. Possible sanctions range from a reprimand to expulsion from the University.

RESOURCES FOR SUPPORT AND ASSISTANCE IN KALAMAZOO

Medical Care
Bronson Methodist Hospital 252 East Lovell, 387-6386
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 STIs; no emergency or trauma care; no rape evidence exam.

Sindecuse Health Center, WMU 387-3290 Testing and treatment for pregnancy and STIs; emotional support and referral for other assistance; no emergency or trauma care; no rape evidence exam.

Counseling Services
WMU Counseling Center 2510 Faunce Student Services, 387-1850 Free private and confidential counseling.

YWCA Sexual Assault Program 353 East Michigan, 345-9412 (office) 345-3036 (24-hour crisis line) Free, short-term counseling for victim, friends, and family, individual and group sessions; services on campus one day/week.

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 Elishworth Hall, 387-2993 Information, referral, emotional support, and assistance in regard to medical care, police involvement, counseling, academic concerns, University judicial process; free.

Victim Assistance Unit Kalamazoo Prosecuting Attorney’s Office 383-8677 Assistance to crime victims involved in a court case. Also provides assistance with filing Crime Victim’s Compensation claims which may compensate a victim for expenses related to medical and counseling services, and lost wages.

YWCA Sexual Assault Program 353 East Michigan, 345-9412 (office) 345-3036 (24-hour crisis line) 24-hour on-site support and assistance to victim and family/friends at hospital or police station; support and assistance to victim during all phases of prosecution, free.

Student Judicial Affairs University Judicial Officer Faunce Student Services 387-2160 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)

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.

Issued by Theresa A. Powell, Vice President for Student Affairs, July 1, 1993 Approved by Diether H. Haenicke, President
Student Academic Rights and Responsibilities

Western Michigan University defines the academic policy application as matters of student academic conduct.

1. Students have protection against prejudiced or capricious academic evaluation.
2. Students have the right to have all their academic exercise or University record.
3. Students may not have others conduct research or prepare work for them without advance authorization from the faculty member. This includes, but is not limited to, the services of commercial term paper companies.

Fabrication, Falsification and Forgery

Definition

Fabrication is the intentional invention and unauthorized alteration of information or citation in an academic exercise. Falsification is a matter of altering information while fabrication is a matter of inventing or counterfeiting information. Forgery is defined as the act to imitate or counterfeit documents, signatures, and the like.

Clarification

1. “Invented” information shall not be used in any laboratory experiment, report of results or academic exercise. It would be improper, for example, to analyze one sample in an experiment and then “invent” data based on that same experiment for several more required analyses.
2. Students shall acknowledge the actual source from which cited information was obtained. For example, a student shall not take a quotation from a book review and then indicate that the quotation was obtained from the book itself.
3. Falsification of University records includes altering or forging any University document and/or record, including identification material issued or used by the University.

Multiple Submission

Definition

Multiple submission is the submission of substantial portions of the same work (including oral reports) for credit more than once without authorization.

Clarification

Examples of multiple submission include submitting the same paper for credit in two courses without the faculty member’s permission; making revisions in a credit paper or report (including oral presentations) and submitting it again as if it were new work. (Different aspects of the same work may receive separate credit; e.g., a report in history may receive credit for its content in a history course and for its treatment of presentation in a speech course.

Plagiarism

Definition

Plagiarism is intentionally, knowingly, or carelessly presenting the work of another as one’s own (i.e., without proper acknowledgement of the source). The sole exception to the requirement of acknowledging sources is when the ideas, information, etc., are common knowledge.

Instructors should provide clarification about the nature of plagiarism.

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 acknowledgement 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 and endnotes One footnote or endnote 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 acknowledged made.

Complicity

Definition

Complicity is intentionally or knowingly helping or attempting to help another to commit an act of academic dishonesty.

Clarification

Examples of complicity include knowingly allowing another to copy from one’s paper during an examination or test; distributing test questions or substantive information about the material to be tested before the scheduled exercise; collaborating on academic work knowing that the collaboration will not be reported; taking an examination or test for another student, or signing another’s name on an academic exercise.

(NOTE: Collaboration and sharing information are characteristics of academic communities. These become violations when they involve dishonesty. Faculty members should make clear to students expectations about collaboration and information sharing. Students should seek clarification when in doubt.)
Computer Misuse

Definition
Computer misuse is disruptive or illegal use of computer resources.

Clarification
1. No student shall access, copy, examine, modify, utilize, or destroy any computer equipment, hardware, software, or file that is not specifically intended for his/her own personal use, without authorization.

2. Disruptive or illegal use of computer resources includes, but is not limited to: violating copyrights held on software or programs, tampering with computer equipment or hardware, or with the operation of any computer system or function/execution; plagiarizing or cheating in any form, acting in a manner disruptive to other users or operators; and invading personal or institutional privacy with the use or aid of any computer equipment.

Conduct in Research

Research and creative activities occur in a variety of settings at the University, including class, laboratory, classroom, seminars, discussions, reports or projects, grant funded projects and service activities. Research and creative activities rest on a foundation of mutual trust. Misconduct in research and creative activity destroys that trust and is prohibited. Students shall adhere to professional standards of integrity in both artistic and scientific research including appropriate representations of originality, authorship and collaborative crediting.

Definition
Misconduct in research is defined as serious deviation, such as fabrication or falsification of data, plagiarism, or scientific or creative misconduct or breaches of research or artistic ethics.

Clarification
Examples of misconduct in research include but are not limited to:
1. Fabrication of Data
   Deliberate invention or misrepresentation of data, or willfully providing false or misleading information.
2. Falsification of Data
   Dishonesty in reporting results, ranging from unauthorized alteration of data, improper revision or correcting of data, gross negligence in collecting or analyzing data, to selective reporting or omission of conflicting data.
3. Plagiarism and Other Misappropriation of the Work of Another
   The representation of another person's ideas or writing as one's own, in such ways as stealing others' work, copying or presenting the writing or ideas of others without acknowledgement, or otherwise taking credit falsely belonging to another, whether an artist's or technical work or creation as one's own. Just as there are standards to which one must adhere in the preparation and publication of written works, there are standards to which one must adhere in creative works in the tonal, temporal, visual, literary and dramatic arts.
4. Abuse of Confidence
   Concealing or revealing the ideas or data of others which were given in the expectation of confidentiality, e.g., stealing ideas from grants, reports, unpublished documents, or manuscripts intended for publication or exhibition/ performance when one is a reviewer for granting agencies or journals or when one is a juror.
5. Dishonesty in Publication or Exhibition/Performance
   Knowingly publishing, exhibiting or performing work that will mislead, e.g., misrepresenting material, particularly its originality, or adding or deleting the names of other authors without permission.
6. Deliberate Violation of Requirements
   Failure to adhere to or receive the approval required for work under research regulations of federal, state, local or university agencies, including guidelines for the protection of human subjects or animal subjects and the use of recombinant DNA, radioactive material, and chemical or biological hazards.
7. Failure to Report Fraud
   Concealing or otherwise failing to report known misconduct or breaches of research or artistic ethics.

Research Board Requirements
Misconduct in research includes failure to comply with requirements of the conduct of 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 to the attention of the University's Institutional Review Board, the Institutional Animal Care and Use Committee and the Institutional Biosafety Committee.

Academic Policy and Status
Academic policy includes any decision affecting a student's academic status other than academic evaluation, academic honesty, or conduct in research.

Examples of other academic policy and status matters include but are not limited to rulings on program admission, the application of program or University requirements or related academic policy approved through the faculty governance system.

Academic Conduct Violation: Consequences and Appeals

The student may request assistance from the University ombudsman at any point during the appeals procedure. The contact may be for the purpose of obtaining information, obtaining information, or requesting assistance through an informal resolution.

Consequences
A description of every violation of standards for academic honesty, conduct in research, University academic policy, or other academic status matters cannot be included in this policy statement. When the academic rules and guidelines set forth in this policy are violated, consequences may vary according to circumstances, but particular cases may involve very different situations. Faculty members may take those actions they deem appropriate; these may include: (a) a failing grade for the work involved, or (b) failure in the course. Faculty may recommend actions to responsible academic supervisors, and the supervisors may or may not refuse to follow the recommendation, take action including: (1) removal from the program, and/or (2) other sanctions up to and including academic dismissal from the University. The faculty member or academic supervisor will file a memo with the registrar, indicating the violation and sanction involved. Before the memo will be filed, the student's official academic file, the registrar shall provide an opportunity for the student to discuss the matter with him/her.

Appeals

1. Grade Appeals
   Students may appeal grading decisions under the "Academic Grade Appeals Procedure" detailed below.

2. All Other Appeals
   All other actions may be appealed under "General Academic Appeals Procedure." In cases where a grade and an academic status decision is involved, the General Academic Appeals Procedure will be used.

Academic Grade Appeals Procedure

1. Whenever a student feels that he/she has a grievance regarding a grade, he/she shall first arrange a meeting with the faculty member who will explain the reasons for the grade and, if warranted, recommend a change.

2. The student must initiate contact with the faculty member involved or in his/her absence the appropriate unit chair/director within 90 days of the end of the semester for which the grade was assigned. Failure to act within the ninety day time period will disqualify the student from further consideration of the matter.

3. If the student believes that he/she has not received a satisfactory resolution of the grievance from the faculty member he/she shall then meet with the academic unit chair/director, who may effect a satisfactory resolution.

4. If the student remains dissatisfied after meeting with the academic unit chair/director, the student may meet with the University ombudsman for an appeal. The function of the ombudsman in this situation is to collect information from the student, academic unit chair/director, and the faculty member. The University ombudsman may make a decision that: (a) the student's grievance is unwarranted and should not be considered further; (b) the student's grievance is warranted but an acceptable resolution cannot be reached, and the grade grievance will be referred to the Academic Fairness Committee.

5. The Academic Fairness Committee is appointed by the University President from a roster of faculty recommended by the Senate Executive Board and students recommended by the Western Student Association and the Graduate Student Advisory Committee. The Committee consists of four faculty, three undergraduate students, and three graduate students, with the chair appointed by the University President.

6. When a case is presented to the Academic Fairness Committee, the chair will call the Committee into session within 30 days of the referral. The Committee shall investigate the case, making sure that all interested parties have a full opportunity to present their positions. The Committee may decide upon: (a) no grade change; (b) a change of letter grade, (c) credit/no credit, or (d) any other grade used by the Records Office. The decision of the Committee is final and must be made within 60 days after the first meeting of the Committee on the case.

7. If the Academic Fairness Committee decides there should be no change of grade, it will so inform the faculty member, the academic unit chair/director, and the ombudsman. If the Committee recommends a change of grade, the Committee will first inform the
General Academic Appeals Procedure

Students may appeal charges of or sanctions for violations of the academic rules and guidelines concerning academic honesty, conduct in research, or applications of an academic policy using the following procedures.

1. A student who disagrees with the charge or decision shall first meet with the faculty member or an administrative official may wish to question a grade or a grade change independent of the appeals procedure (Sec. VI, A-G). In such instances, the faculty member shall be consulted.

2. If no resolution is reached and the student wishes to appeal the decision within 30 days of receiving notification of the action, the faculty member shall refer the appeal to the academic unit (e.g., academic unit within 14 calendar days of receiving notice of the first review. If the academic unit has approved procedures in place for considering such appeals, the chair/director shall refer the appeal to that process. If the unit does not have established procedures, the chair/director shall consider the appeal.

3. If no resolution is reached and the student wishes to appeal the unit level decision, he/she may request in writing a review by the college dean within 14 calendar days of receiving notice of the unit’s decision. In cases such as dismissal from an academic program or from the University, the college dean shall refer the student’s appeal to the College Academic Review Board under procedures outlined below. The College Academic Review Board will make a recommendation to the dean within 30 days for approval.

4. College Academic Review Board: Each college (excluding the Honors College and the Graduate College) will establish a College Academic Review Board consisting of five members, three faculty and two students. The three faculty members are elected by the college at large for one nonrenewable four-year term. One undergraduate student and one graduate student who are candidates for degree programs in the college are appointed by the Western Michigan University Student Association and the Graduate Student Advisory Committee respectively for one renewable two-year term. Terms run from September 1 to August 31 of each calendar year. The dean may accept the College Review Board’s recommendation or may forward the Review Board’s recommendation and his/her alternate recommendation to the provost. In a case involving a graduate student, the college dean will consult with the dean of the Graduate College before issuing a decision.

5. If the student wishes to appeal the decision of the dean or the College review Board, he/she may request in writing a review by the provost within 14 calendar days of receiving notification of the college level review. The provost’s decision will be final except for written appeal to the president, when academic dismissal from the University is the recommended penalty.

6. Students may appeal charges of academic dishonesty made by the registrar, Undergraduate Admissions, the Graduate Admissions, the Office of the Registrar, Academic Affairs, or institution change independent of the appeals procedure (Sec. VI, A-G). In such instances, the faculty member shall be consulted.

7. If the student wishes to appeal the recommendation made by the appeals procedure, the reviewer shall investigate the appeal, making sure that all interested parties have a full opportunity to present their position. The review will be able to recommend: (a) support for the initial charge and/or sanction; (b) modification of the initial charge; (c) no support of the initial charge and/or sanction. Records must be maintained at each review level.

8. Western Michigan University appeals to the next step of reviewing within 30 days of receiving notice of the second review. If no resolution is reached and the student wishes to appeal the decision within 30 days of receiving notification of the action, the faculty member shall refer the appeal to the academic unit (e.g., academic unit within 14 calendar days of receiving notice of the first review.

The Family Educational Rights and Privacy Act

The Family Educational Rights and Privacy Act of 1974 is a Federal law which states that (a) a written institutional policy must be established and (b) a statement of adopted procedures covering the privacy rights of students must be made available. The law provides that the institution will maintain the confidentiality of student education. Western Michigan University accords all rights under the law to students who are independent of the institution. No one outside the institution shall have access to, nor will the institution disclose, any information from students’ educational records without the written consent of the student, except to personnel within the institution, to officials of other institutions in which students seek to enroll, to persons or organizations providing students financial aid, to accrediting agencies and the student, persons in compliance with a judicial order, and to persons in an emergency in order to protect the health or safety of students or other persons. All these exceptions are permitted under the Act.

Within the Western Michigan University community, only those members, individually or collectively, in the institution’s 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, Controller, Financial Aid, and the 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, dates and place of birth, curriculum and major field of study, dates of attendance, degrees awarded, the most recent previous educational 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 Academic Records 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. The student is responsible for the change in the contents of these records, having a hearing if the outcome of the challenge is unsatisfactory, and to submit explanatory statements for inclusion in their files if they feel the decisions of the hearing panels to be unacceptable. The Registrar at Western Michigan University has been designated by the institution to coordinate the inspection and review procedures for student educational records, which include admissions, personal, academic, and financial files and academic, cooperative education, and placement files. Students wishing to review their educational records must make written requests to the Registrar. Only records covered by the Act will be made available within forty-five days of the request. Students may have copies made of their records with certain exceptions, e.g., a true copy of a transcript of an original or source document which exists elsewhere. These records contain information about more than one student, in which case the institution will permit the access to that part of the record which pertains to the inquiring student. The institution is not required to permit students to inspect and review confidential letters and recommendations placed in their files prior to January 1, 1975, provided those letters were collected under established policies of confidentiality and were used only for the purposes for which they were collected.

Students who believe that their educational records contain information that is inaccurate or misleading, or is otherwise in violation of their privacy or other rights, may discuss their problems informally with the person in charge of the records involved. If the decisions are in agreement with the student, the appropriate records will be amended. If not, the students will be notified within a reasonable 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 within ten days after receiving such request, will inform students of the date, place, and time of the hearing. The student must present evidence relevant to the issues raised and may be assisted or represented at the hearing by one or more persons of their choice, including attorneys. 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, will be 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 place with the educational records statements commenting on the information in the records or statements setting forth any reasons for disagreeing with the decisions of the hearing officer. The statements will be placed in the educational records, maintained as part of the students' records, and released whenever the records in question are disclosed.

Revisions and clarifications will be published as experience with the law and institutional policy warrants.

Sexual Harassment and Sexism

Western Michigan University is committed to an environment which encourages fair, humane, and beneficial treatment of all faculty, staff, and students. In accordance with that fundamental objective, the University has a continuing commitment to assure equal opportunity and to oppose discrimination because of race, sex, sexual orientation, age, religion, national origin, or handicap. Therefore, in that same perspective, neither sexual harassment nor sexism will be tolerated at Western Michigan University. It is expected that each member of the University community will consider himself/herself responsible for the proper observance of this policy.

Definitions

Sexual Harassment: Sexual harassment is defined as unwelcome sexual conduct which is related to any condition of employment or evaluation of student performance. This definition is intended to include more than overt advances toward actual sexual relations. It applies as well to repeated or unwarranted sex-related statements, unwelcome touching, sexually explicit comments, and/or graphics. All persons should be sensitive to situations that may affect or cause the recipient discomfort or humiliation or may display a condescending sex-based attitude towards the person. Sexual harassment is illegal under both state and federal law. In some cases, it may be subject also to prosecution under the criminal sexual conduct act. Conduct will be defined as sexual harassment when any or all of the following conditions exist:

1. The sex-related situations are unwelcome by the recipient.
2. A specific or implied connection with employment or student status is involved.
3. The sexual harassment continues after the recipient has made it clear that the conduct is unwelcome.

*Note: In cases of overt physical sexual conduct, a blatant threat if sexual favors are not given, or promised reward in exchange for sexual favors, no notice that the conduct is unwelcome shall be necessary and a finding of sexual harassment may be based on a single occurrence.

Sexism: Sexism is defined as the perception and treatment of any person, not as an individual, but as a member of a category based on sex. Whether expressed in overt or subtle form such as sex-related jokes or materials, sexism in the classroom or workplace is unacceptable at the University and its eliminations shall be the responsibility of the entire University community. Depending upon the severity of the misconduct, informal corrective action may be adequate.

Complaint Procedure

Sexual harassment and sexism constitute acts of misconduct. Therefore, whenever such acts are reported and confirmed, prompt, disciplinary action will be taken, up to and including discharging the employee. However, to enable the University to act through these formal procedures, employees and students are encouraged to report such incidents. Employees will report such conduct to the Director of the Affirmative Action Office.

Receiving Sexual Harassment and Sexism

Sexism and sexual harassment are prohibited at Western Michigan University. The University's policy on harassment and sexism states: "Sexual harassment and sexism constitute acts of misconduct. Therefore, whenever such acts are reported and confirmed, prompt disciplinary action will be taken, up to and including discharge."

You Could Be A Victim

Who are the victims? Anyone, male or female, young or old, can be the victim of sexual harassment from someone of the opposite, or even the same sex. But most often, women are harassed by men.

Any woman can be the target of harassment, but two groups are the most vulnerable: women entering male-dominated fields of study, and women from minority groups. Both of these types of women may feel uncomfortable and out of place in their environments. Experiencing this discomfort, they find it easy prey.

Taking Action Against the Sexual Harasser

If you are being harassed, take action to stop it. The University will support you.

Some options available to you are:

- Say no. Make it loud and clear. A harasser does not expect confrontation.
- Keep records of all incidents and confrontations.
- Find witnesses or others who will back up your claim.
- Get support from a friend, counselor, professor, or anyone else you trust. Make sure you don't keep it bottled up inside; the more help you get, the faster the harasser will stop.

Student Conduct

Rules and regulations in the Student Code covering student conduct are developed by the Division of Student Affairs and reviewed by the Admissions, Financial Aid and Student Affairs Council composed of faculty, administration, and students. The policies, when approved by the Board of Trustees, are published in The Student Code. Rules and regulations appearing in this code are developed under the philosophy reflected in this statement.

Western Michigan University is committed to maintaining an environment which protects the right of students to freely pursue academic inquiry and personal expression while encouraging them to develop critical judgment, civility, and self-discipline.

The Dean of Students has overall responsibility for student conduct and discipline. When infractions of rules and regulations occur, students will be referred to the Office of Student Judicial Affairs for disposition.

President's Statement on Racial and Ethnic Harmony

Discrimination: Complaints and Grievance Procedure

Western Michigan University, in accordance with the law, prohibits discrimination in the provision of all student instruction, activities, and programs. Discrimination based on race, color, religion, national origin, sex, sexual orientation, age, handicap, height, weight, or marital status shall not be a factor in the determination of eligibility, participation, or grading for any courses or program established for the benefit of students unless otherwise provided by law.

Students who have inquiries about the University's Anti-Discrimination Policy or about anti-discrimination laws, including Title IX and the Rehabilitation Act of 1973, or who have complaints or prohibited discrimination, may file their inquiries and complaints with the Student Conduct Officer, 274 Walwood Hall (387-8855)

The University's complaint and grievance procedures are designed to provide a non-adversary, informal environment to resolve complaints. Any student(s) who wants to file a complaint must do so in writing. 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 charge against the University, an employee(s), or agent, stating prohibited discrimination has occurred, may be filed with the Affirmative Action Officer or professor, instructor, or program director within fourteen (14) calendar days of events or knowledge of events giving rise to the complaint. A complaint must be filed by the student and discussed with the Affirmative Action Officer before any formal grievance can be initiated.

The Affirmative Action Officer will make reports and recommendations to the complaining students and to the academic dean or program director concerned. In the event the student's complaint is not satisfactorily resolved, the student may file a formal written grievance. Formal written grievances protesting prohibited discrimination shall be filed in accordance with the Anti-Discrimination Grievance Procedure for Students.

A grievance is defined as a formal written allegation by a student(s) that there has been a violation of the University's Anti-Discrimination Policy or a discriminatory application of the University's 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 (387-8855). The grievance must be filed with the Affirmative Action Officer on the official University Grievance Form and be signed by the student(s) involved. The grievance must...
be timely, state all facts relevant to the protested events, indicate when the incident(s) occurred, and specify the discriminatory acts and policies, rules, or regulations involved. The Affirmative Action Department will serve as an intermediary for written grievances and is to receive copies of all 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 requested), and any other individuals who may help resolve the grievance. This meeting must be held within fourteen (14) calendar days after the appropriate Vice President or his/her designee hearing the appeal receives the grievance from the Affirmative Action Department. Within seven (7) calendar days after this meeting, the appropriate Vice President or his/her designee hearing the appeal will communicate an answer in writing to the involved parties.

Step 3: Appeals to the Presidential Level
If the grievance has not been resolved at Step 2, it may be appealed to the University President. The Affirmative Action Department must receive the appeal within seven (7) calendar days after the grievant receives the Step 2 answer. The President, at his/her discretion, will handle the grievance personally or will designate a representative to conduct a hearing or investigation of the grievance, report findings, and recommend a decision. The President will make the final grievance decision and communicate it to the appropriate parties.

In addition to filing a grievance with the University's Affirmative Action Department, the student may file a complaint directly with the Office of Civil Rights, U.S. Department of Education or pursue both avenues of complaint resolution.
DEGREES AND CURRICULA

Bachelor’s Degrees

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

**BACHELOR OF ARTS**

**BACHELOR OF BUSINESS ADMINISTRATION**

**BACHELOR OF FINE ARTS**

**BACHELOR OF MUSIC**

**BACHELOR OF SCIENCE**

**BACHELOR OF SCIENCE IN ENGINEERING**

Aeronautical, Automotive, Computer Systems, Electrical, Material Science, Industrial, Mechanical, and Paper

**BACHELOR OF SCIENCE IN MEDICINE**

Physician Assistant

**BACHELOR OF SCIENCE IN NURSING**

**BACHELOR OF SOCIAL WORK**

**SECOND BACHELOR’S DEGREE**

A student may earn a second bachelor’s degree at Western Michigan University. In order to qualify, a student must meet all Western Michigan University bachelor degree requirements and earn a minimum of thirty semester hours of residence credit beyond those required for the first degree. The additional hours need not be taken after completion of requirements for the first degree. Students who are interested in a second degree must receive written approval before beginning their course work.

**DOCTOR OF EDUCATION**

Three doctoral degree programs are offered by the College of Education: Counseling and Personnel, Education Leadership, and Special Education.

**DOCTOR OF PHILOSOPHY**

Programs leading to the Ph.D. degree are offered in Biological Sciences, Comparative Religion, Computer Science, Economics, English, Geology, History, Mathematics, Political Science, Psychology, Science Education, and Sociology.

**DOCTOR OF PUBLIC ADMINISTRATION**

**Certificates**

**VALIDITY LEVEL OF MICHIGAN CERTIFICATES**

There are two basic levels of Michigan teaching certificates currently available:

1. **ELEMENTARY certificates issued after September 1, 1988** have the following validity: Kindergarten through eighth grades all subjects in a self-contained classroom; and sixth to, and including, eighth grades in the teachable major(s) and/or minor(s).

2. **SECONDARY certificates issued after September 1, 1988** have the following validity: Seventh through twelfth grade in teachable major(s) and minor(s).

**TYPES OF MICHIGAN CERTIFICATES**

There are four basic types of Michigan regular and vocational certificates currently available: the 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 Requirements” section below; the Temporary Vocational Authorization; and the Occupational Education certificate. The Professional certificate replaced the Continuing certificate and the Occupational Education certificate replaced the Full Vocational certificate on July 1, 1992.

**PROVISIONAL CERTIFICATE REQUIREMENTS**

A Provisional certificate is issued by the Michigan Department of Education upon satisfactory completion of an approved program, including a bachelor’s degree, offered by a teacher preparation institution and payment of a $125.00 certificate fee. An overall grade point average of 2.5 is required at Western Michigan University for a Provisional certificate. Beginning September 1, 1991, the Michigan Board of Education will issue a teaching certificate to a person only after passing both a basic skills examination and an appropriate subject area examination for each subject in which certification is granted.

**PROFESSIONAL CERTIFICATE REQUIREMENTS**

The requirements for the Professional certificate are:

1. **EXPERIENCE.** The candidate must have taught successfully for the equivalent of three years following the issuance of and within the grade level and subject area validity of the Provisional certificate.

   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).

   Graduates of WMU 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 at any stage of the candidate's college level preparation.

Individuals holding a Provisional certificate with a vocational education endorsement are required to complete ten semester hours of relevant vocational education credit within the eighteen semester hour planned program in order to earn an Occupational certificate.

Provisional Renewal Requirements

When the Provisional certificate expires before the holder is able to fulfill all requirements for the subsequent certificate, such holder can, at any future time(s), qualify in the following manner for a renewal of the Provisional certificate. The first three-year renewal is available any time after actual completion of the first ten semester hours of the eighteen semester hour “planned program.” After expiration of the first three-year renewal, if the holder has not completed the experience requirements for the Professional certificate, a second three-year renewal is available any time after actual completion of the entire eighteen semester hour “planned program.”

Certification Application Procedures

The Professional, Occupational, and Provisional Renewal will be recommended by the approved Michigan teacher education institution which “planned” or approved the eighteen semester hour program of additional credit. The candidate applies directly to such 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 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 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 Provisional certificate and the Temporary Vocational Authorization are valid for 2½ to 3 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 certificate), Permanent certificates (issued prior to July 1, 1976—predating the Continuing certificate), and Full Vocational Authorizations (issued prior to July 1, 1992—predating the Occupational Education certificate), have identical validity spans and identical reinstatement requirements. They automatically remain valid as long as the holder serves in an “educational capacity” (any full-time or part-time education employment at any level) for a minimum of 100 days (need not be consecutive days) in any given five-year period. (The “given five-year period” is determined by looking backward — NOT forward — from any current date to the equivalent date five years earlier.)

Professional Education and Occupational Education Certificates

Beginning July 1, 1992, persons receiving a Professional Education certificate or an Occupational Education certificate will be subject to the provisions of Rule 390.1135. The certificate(s) will be renewed 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) every five years.

Undergraduate Curricula and Approved Majors

College of Arts and Sciences

Students selecting a communications or psychology program will be placed in the (1) “PRE-COMMUNICATION” (PCM) or (2) “PRE-Psychology” (PPY) MAJOR respectively unless until otherwise referred to. 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
BMS Biomedical Sciences
BCP Broadcast Cable Production
BUC Business-Oriented Chemistry
CHE Chemistry
CSS Communication Studies
CPS Computer Science
CPU Computer Science—Theory and Analysis
CRJ Criminal Justice
EAR Earth Science
ECO Economics
ENG English
FRE French
FGE Geography
GEG Geophysics
GER German
HCS Health Chemistry
HIS History
HYG Hydrogeology
IPC Interpersonal Communication
LAT Latin
MAT Mathematics
MDS Media Studies
OCM Organizational Communication
PHI Philosophy
PHY Physics
POL Political Science
PRA Political Science in Public Administration
POM Pre-Communication
PPY Pre-Psychology
PSY Psychology
PSY Psychology
PUH Public History
PUR Public Relations
REL Religion
SOC Sociology
SPA Spanish
STA Statistics
SPM Student Planned Major
TCM Telecommunication Management
TOU Tourism and Travel
CURR: STC Student Planned Curriculum
Major: STC Student Planned Curriculum

Preprofessional Programs

PAH Pre-Architecture
PD Pre-Dentistry (Select a major from Liberal Education Curriculum)
PL Pre-Law (Select a major from Liberal Education Curriculum)
PM Pre-Medicine (Select a major from Liberal Education Curriculum)

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

AFS African Studies
AS ASIAN Studies
BAS Black Americana Studies
EVS Environmental Studies
EUR European Studies
LMS Latin American Studies
WMS Women's Studies

Haworth College of Business:

CURR: BAD Business Administration
Major: Must elect major from BAD Curriculum
CURR: ACT Accounting
CURR: ADM Administrative Systems
CURR: ADV Advertising and Promotion
CURR: BCM Business Communication
CURR: CIS Computer Information Systems
CURR: ECO Economics
CURR: FIL Finance
CURR: FMM Food Marketing
CURR: GBS General Business
CURR: IDM Industrial Marketing
CURR: INS Insurance
CURR: ISM International Supply Management
CURR: MGT Management
CURR: MKT Marketing
CURR: PAB Public Administration
CURR: REA Real Estate
CURR: RET Retailing
CURR: STB Statistics

College of Education:

CURR: CTE Career and Technical Education
Major: dra Drafting
CURR: CRA Graphic Arts
CURR: HEE Home Economics Education
CURR: HKW Metallurgy
CURR: PWV Power/Automotives
CURR: SEB Secondary Education in Business
CURR: SED Secondary Education in Marketing
CURR: WDK Woodworking
CURR: DI Dietetics
CURR: DDI Dietetics
CURR: EED Elementary Education
Major: EGM Elementary Group Minors
CURR: EEM Elementary Music
Major: MUS Music, Elementary
CURR: FSA Food Service Administration
Major: FSA Food Service Administration
CURR: FST Family Studies
Major: FST Family Studies
CURR: IET Industrial Education (Teaching)
Major: DRA Drafting
CURR: GIA General Industrial Education
CURR: GRA Graphic Arts
CURR: MWK Metallurgy
CURR: POW Power/Automotives
CURR: WDK Woodworking
CURR: ITD Interior Design
Major: ITD Interior Design
CURR: JHS Middle School and Junior High School
Major: ENG English
CURR: FRE French
CURR: GER German
CURR: MAT Mathematics
CURR: SPA Spanish
CURR: SED Secondary Education
Major: AMS American Studies
CURR: BIO Biology
CURR: CHM Chemistry
CURR: EAR Earth Science
CURR: ENG English
CURR: FRE French
CURR: GEG Geography
CURR: GER German
CURR: HIS History
CURR: LAT Latin
CURR: MAT Mathematics
CURR: SPA Spanish
CURR: TOU Tourism and Travel
CURR: PEP Physical Education
Major: CHE Community Health Education
CURR: SMH Special Education—Mentally Impaired
CURR: SDC Special Education—Emotionally Impaired
CURR: ASE Special Education—Visually Impaired
CURR: VTE Vocational-Technical Education

the 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 Pre-Program section for complete information on admission requirements.

CURR: AER Aeronautical Engineering
Major: AER Aeronautical Engineering
CURR: AE Air Traffic and Operations
Major: AE Aircraft Maintenance Engineering Technology
CURR: SMH Special Education—Mentally Impaired
CURR: SBE Special Education—Visually Impaired
CURR: TEX Textile and Apparel Studies
Major: TEX Textile and Apparel Studies
CURR: VTE Vocational-Technical Education (Non-Teaching)
Major: VTE Vocational-Technical Education (Non-Teaching)
CURR: AUM Automotive Engineering Technology
Major: AUM Automotive Engineering Technology
CURR: AFS Aviation Flight Science
Major: AFS Aviation Flight Science
CURR: AVO Aviation Tech and Operations
Major: AVO Aviation Tech and Operations
CURR: CSE Computer Systems Engineering
Major: CSE Computer Systems Engineering
CURR: CEM Construction Engineering and Management
Major: CEM Construction Engineering and Management
CURR: EE Electrical Engineering
Major: EE Electrical Engineering
CURR: EGR Engineering Graphics and Design Technology
Major: EGR Engineering Graphics and Design Technology
CURR: UEM Engineering Management
Major: UEM Engineering Management
CURR: GCA General
Major: GCA General
CURR: ID Industrial Design
Major: ID Industrial Design
CURR: IE Industrial Engineering
Major: IE Industrial Engineering
CURR: MFT Manufacturing Engineering Technology
Major: MFT Manufacturing Engineering Technology
CURR: MTE Materials Engineering
Major: MTE Materials Engineering
CURR: ME Mechanical Engineering
Major: ME Mechanical Engineering
CURR: PPA Paper Engineering
Major: PPA Paper Engineering
CURR: PSC Paper Science
Major: PSC Paper Science
CURR: RRIT Printing
Major: RRIT Printing
CURR: PRO Production Technology
Major: PRO Production Technology
CURR: PRO Production Technology
Major: PRO Production Technology

College of Fine Arts:

(6) Students selecting Graphic Design will be placed in the Art Curriculum until requirements have been met. See the Art section for complete information on admission requirements.

CURR: ART Art
Major: ART Art
CURR: ATE Art Teaching
Major: ATE Art Teaching
CURR: DAC Dance
Major: DAC Dance
CURR: MSC Music
Major: MSC Music
CURR: MUC Music Composition
Major: MUC Music Composition
CURR: MUJ Music Education
Major: MUJ Music Education
CURR: MJH Music History
Major: MJH Music History
CURR: MUJ Music—Jazz Studies
Major: MUJ Music—Jazz Studies
CURR: MUP Music Performance
Major: MUP Music Performance
CURR: MUS Music Theory
Major: MUS Music Theory
CURR: MTH Music Therapy
Major: MTH Music Therapy
CURR: MTP Music Theatre Performer
Major: MTP Music Theatre Performer
CURR: THR Theatre
Major: THR Theatre
CURR: THN Theatre Education
Major: THN Theatre Education

College of Health and Human Services:

Students selecting any Health and Human Services program will be placed in a "Pre-Program" until all requirements have been met. See the College of Health and Human Services section for complete information on admission requirements.

CURR: BRN Bronson Nurses (Application to this program is made through the Bronson Methodist Hospital School of Nursing)
Major: BRN Bronson Nurses
CURR: EAP Employee Assistance Programs
Major: EAP Employee Assistance Programs
CURR: NUR Nursing
Major: NUR Nursing
CURR: OT Occupational Therapy
Major: OT Occupational Therapy
CURR: PVA Physician Assistant
Major: PVA Physician Assistant
CURR: PTC Permission to Take Classes
Major: PTC Permission to Take Classes
CURR: PNC Police
Major: PNC Police
CURR: PTC Permission to Take Classes
Major: PTC Permission to Take Classes
CURR: RNN R.N. Nursing
Major: RNN R.N. Nursing
CURR: RPT Physical Therapy
Major: RPT Physical Therapy
CURR: SOC Social Work
Major: SOC Social Work
CURR: OT Occupational Therapy
Major: OT Occupational Therapy
CURR: PVA Physician Assistant
Major: PVA Physician Assistant
CURR: PTC Permission to Take Classes
Major: PTC Permission to Take Classes
CURR: SVN Speech Pathology and Audiology
Major: SVN Speech Pathology and Audiology

Honors College

CURR: HNC Honors College

College of Fine Arts:

(6) Students selecting Graphic Design will be placed in the Art Curriculum until requirements have been met. See the Art section for complete information on admission requirements.

CURR: ART Art
Major: ART Art
CURR: ATE Art Teaching
Major: ATE Art Teaching
CURR: DAC Dance
Major: DAC Dance
CURR: MSC Music
Major: MSC Music
CURR: MUC Music Composition
Major: MUC Music Composition
CURR: MUJ Music Education
Major: MUJ Music Education
CURR: MJH Music History
Major: MJH Music History
CURR: MUJ Music—Jazz Studies
Major: MUJ Music—Jazz Studies
CURR: MUP Music Performance
Major: MUP Music Performance
CURR: MUS Music Theory
Major: MUS Music Theory
CURR: MTH Music Therapy
Major: MTH Music Therapy
CURR: MTP Music Theatre Performer
Major: MTP Music Theatre Performer
CURR: THR Theatre
Major: THR Theatre
CURR: THN Theatre Education
Major: THN Theatre Education

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 Pre-Program section for complete information on admission requirements.

(5) Not available on-campus.

CURR: AER Aeronautical Engineering
Major: AER Aeronautical Engineering
CURR: AE Air Traffic and Operations
Major: AE Aircraft Maintenance Engineering Technology
CURR: SMH Special Education—Mentally Impaired
CURR: SBE Special Education—Visually Impaired
CURR: TEX Textile and Apparel Studies
Major: TEX Textile and Apparel Studies
CURR: VTE Vocational-Technical Education (Non-Teaching)
Major: VTE Vocational-Technical Education (Non-Teaching)
CURR: AUM Automotive Engineering Technology
Major: AUM Automotive Engineering Technology
CURR: AFS Aviation Flight Science
Major: AFS Aviation Flight Science
CURR: AVO Aviation Tech and Operations
Major: AVO Aviation Tech and Operations
CURR: CSE Computer Systems Engineering
Major: CSE Computer Systems Engineering
CURR: CEM Construction Engineering and Management
Major: CEM Construction Engineering and Management
CURR: EE Electrical Engineering
Major: EE Electrical Engineering
CURR: EGR Engineering Graphics and Design Technology
Major: EGR Engineering Graphics and Design Technology
CURR: UEM Engineering Management
Major: UEM Engineering Management
CURR: GCA General
Major: GCA General
CURR: ID Industrial Design
Major: ID Industrial Design
CURR: IE Industrial Engineering
Major: IE Industrial Engineering
CURR: MFT Manufacturing Engineering Technology
Major: MFT Manufacturing Engineering Technology
CURR: MTE Materials Engineering
Major: MTE Materials Engineering
CURR: ME Mechanical Engineering
Major: ME Mechanical Engineering
CURR: PPA Paper Engineering
Major: PPA Paper Engineering
CURR: PSC Paper Science
Major: PSC Paper Science
CURR: RRIT Printing
Major: RRIT Printing
CURR: PRO Production Technology
Major: PRO Production Technology
CURR: PRO Production Technology
Major: PRO Production Technology

College of Fine Arts:

(6) Students selecting Graphic Design will be placed in the Art Curriculum until requirements have been met. See the Art section for complete information on admission requirements.

CURR: ART Art
Major: ART Art
CURR: ATE Art Teaching
Major: ATE Art Teaching
CURR: DAC Dance
Major: DAC Dance
CURR: MSC Music
Major: MSC Music
CURR: MUC Music Composition
Major: MUC Music Composition
CURR: MUJ Music Education
Major: MUJ Music Education
CURR: MJH Music History
Major: MJH Music History
CURR: MUJ Music—Jazz Studies
Major: MUJ Music—Jazz Studies
CURR: MUP Music Performance
Major: MUP Music Performance
CURR: MUS Music Theory
Major: MUS Music Theory
CURR: MTH Music Therapy
Major: MTH Music Therapy
CURR: MTP Music Theatre Performer
Major: MTP Music Theatre Performer
CURR: THR Theatre
Major: THR Theatre
CURR: THN Theatre Education
Major: THN Theatre Education

College of Health and Human Services:

Students selecting any Health and Human Services program will be placed in a "Pre-Program" until all requirements have been met. See the College of Health and Human Services section for complete information on admission requirements.

CURR: BRN Bronson Nurses (Application to this program is made through the Bronson Methodist Hospital School of Nursing)
Major: BRN Bronson Nurses
CURR: EAP Employee Assistance Programs
Major: EAP Employee Assistance Programs
CURR: NUR Nursing
Major: NUR Nursing
CURR: OT Occupational Therapy
Major: OT Occupational Therapy
CURR: PVA Physician Assistant
Major: PVA Physician Assistant
CURR: PTC Permission to Take Classes
Major: PTC Permission to Take Classes
CURR: RNN R.N. Nursing
Major: RNN R.N. Nursing
CURR: RPT Physical Therapy
Major: RPT Physical Therapy
CURR: SOC Social Work
Major: SOC Social Work
CURR: OT Occupational Therapy
Major: OT Occupational Therapy
CURR: PVA Physician Assistant
Major: PVA Physician Assistant
CURR: PTC Permission to Take Classes
Major: PTC Permission to Take Classes
CURR: SVN Speech Pathology and Audiology
Major: SVN Speech Pathology and Audiology

Honors College

CURR: HNC Honors College

Division of Continuing Education:

CURR: GUS General University Studies
Major: AMT American Studies
CURR: ALS Applied Liberal Studies
Major: APS Applied Professional Studies
CURR: CCJ Criminal Justice
Major: HTH Health Studies
CURR: SOT Social Science Studies
Major: TAS Technical and Scientific Studies
CURR: CE Continuing Education
Major: PTC Permission to Take Classes
CURR: UHY University Curriculum
Major: PTC Permission to Take Classes

Other Curricula

CURR: UVA University Curriculum
Major: APS Applied Professional Studies
CURR: GUS General University Studies
Major: APS Applied Professional Studies
CURR: PTC Permission to Take Classes
Major: PTC Permission to Take Classes
CURR: UNV University Curriculum
Major: APS Applied Professional Studies

Students not selecting a curriculum will be placed in the UNIVERSITY (UNV) CURRICULUM until a selection can be made. Students are encouraged whenever possible to select a specific curriculum.
 Programs Requiring Major and Minor Slips

(In All Cases Check Catalog Requirements)

Note: "No" means that a slip is not required for the major, curriculum, or minor. "None" means that a major, curriculum, or minor is not offered.

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<th>CODE</th>
<th>DESCRIPTION</th>
<th>MAJOR SLIP REQUIRED</th>
<th>MAJOR AND/OR CURRICULUM SLIP REQUIRED</th>
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Student Planned Curriculum

The Student Planned Curriculum (STC) provides students the opportunity to pursue educational goals which cannot readily be accommodated in other university curricula. It offers students the opportunity to pursue suspended within this program. Instead, the program consists entirely of elective courses which must be sufficient in number to meet general intellectual skills requirements, the major, 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 interdisciplinairy undergraduate education without particular concern for career possibilities. Non-traditional students are often especially attracted to it for this latter reason.

Any undergraduate student in good academic standing, with 75 or fewer semester hours earned, is eligible to enter the STC. Students may initiate this process by contacting the University Counseling Center (387-1850) and requesting an appointment with one of the designated STC counselors. Those applying for admission into the program are expected to develop a written statement outlining educational goals as well as the proposed course of study.

General University Studies

The Division of Continuing Education has developed a baccalaureate degree program which especially serves those with a community college background or its equivalent. This undergraduate degree program is known as the General University Studies curriculum, which leads to either the Bachelor of Arts or the Bachelor of Science degree, depending upon the subject matter content of the program. Specific course requirements vary with the selected area of concentration. All programs must be planned with an academic advisor for the area of concentration. Arrangements for consultation with an advisor will be provided at the student's convenience. Inquiries about the General University Studies programs may be directed to any of the Division's offices.

The Division of Weekend College and Special Programs is located in B-218 Eellsworth Hall on Western's main campus in Kalamazoo. The Division's five regional centers are located as follows:

- Grand Rapids Regional Center 2323 East Beltline, SE Grand Rapids, MI 49546-5936
- Lansing Regional Center 300 N. Washington Square, Suite 200 Lansing, MI 48933-1204
- Muskegon Center for Higher Education 221 S. Quarterline Road Muskegon, MI 49442-1742
- Battle Creek Kendall Center 50 West Jackson Battle Creek, MI 49017-3505
- Southwest Regional Center 2510 Lakeview Avenue St. Joseph, MI 49085

GENERAL REQUIREMENTS

The general requirements for a bachelor's degree in the General University Studies curriculum include the following:

1. Complete at least 122 hours of credit, with a minimum of 60 hours of academic work from an accredited four-year, degree-granting institution including Western Michigan University residency requirements.
2. Completion of a planned area of concentration, involving a minimum of 45 semester hours of credit. Some work may include credit completed in the first two years of the student's preparation or credit given for non-accredited training or experience.
3. Completion of the General Education requirement of 35 semester hours of credit. This work does not have to be of exclusive work included in the area of concentration.
4. Complete the University's Computer Literacy, Intellectual Skills, and Baccalaureate Writing requirements.

AREAS OF CONCENTRATION

American Studies

Applied Liberal Studies

Applied Professional Studies

Criminal Justice

Health Studies

Social Science Studies

Technical-Scientific Studies

Please see section on the Division of Continuing Education elsewhere in this catalog.

Preprofessional Programs

Every professional school has prescribed the nature and amount of academic work to be completed as a prerequisite to the professional training for a particular vocation. Four years of higher education are generally required by most professional schools for a degree, depending upon the subject matter content of the program. Specific course requirements vary with the selected area of concentration. All programs must be planned with an academic advisor for the area of concentration. Arrangements for consultation with an advisor will be provided at the student's convenience. Inquiries about the General University Studies programs may be directed to any of the Division's offices.

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- Battle Creek Kendall Center 50 West Jackson Battle Creek, MI 49017-3505
- Southwest Regional Center 2510 Lakeview Avenue St. Joseph, MI 49085

1. CHEM 101 or 102, 120, 360, and 361
2. PHYS 113/114 and 115/116 or 205/206 and 207/208
3. ENGL 105 plus a literature course.

LAW

Advisors: Haworth College of Business

N. Batch, T. Gossman, N. Hawker, F. W. McCarty, L. Stevenson, N. Batch, T. Gossman, N. Hawker

F. W. McCarty, L. Stevenson, N. Batch, T. Gossman, N. Hawker

Although it is relatively unimportant what the student’s major and minor, as well as appropriate prerequisites, Western Michigan University requires that all students interested in health science careers. Students should complete the minimal requirements by the end of their junior year or before they take the Dental Admission Test. The sequence of courses will depend on the student’s major and minor, as well as their professional school requirements, and also provide a good foundation for the Dental Admission Test, are as follows:

1. CHEM 101 or 102, 120, 360, and 361
2. PHYS 113/114 and 115/116 or 205/206 and 207/208
3. ENGL 105 plus a literature course.
MEDICINE AND OSTEOPATHIC MEDICINE
Maria McGurn
Medical Sciences Advisor
2046 Friedmann Hall
387-4366

Medical schools increasingly want students with diverse backgrounds and a wide variety of skills and interests. They expect good basic training in chemistry, biology, physics, and mathematics, but also want students to have well-developed communication skills and long-term interests in the humanities and social sciences. In general, medical schools require two semesters each of English, Physics, Biology, Inorganic Chemistry, and Organic Chemistry. Since minimum course requirements vary among medical schools, you should find out specific requirements by consulting the publication, Medical School Admission Requirements, which is on reserve in Waldo Library (card catalog No. R745.A8) and is also available in 2046 Friedmann Hall. The Medical College Admission Test (MCAT) is required by nearly all medical schools, and is offered at Western Michigan University each spring and fall.

Most premedical or osteopathic students at Western Michigan University major in either Biology, Biomedical Sciences, or Chemistry. However, medical schools look with equal favor on other majors, as long as students complete the minimal premedical requirements. It is important that preprofessional and osteopathic students see the preprofessional advisor on a regular basis for curriculum guidance. The advisor is located in the College of Arts and Sciences Advising Office, 2046 Friedmann Hall. Also available through the advising office are Premedical Advisory Booklets, Medical College Admission Test application forms, centralized application service forms, and Preprofessional Evaluation Committee services. Premedical and preosteopathic students are encouraged to join the Medical Sciences Association, which is composed of students interested in health science careers.

Students should complete the minimal requirements by the end of their junior year or before they take the Medical College Admission Test. In addition, courses in genetics, physiology, and biochemistry are recommended. The sequence of courses will depend on the student’s major and minor, as well as appropriate prerequisites. Western Michigan University courses which fulfill minimum medical school requirements, and also provide a good foundation for the Medical College Admission Test, are listed below:

1. CHEM 101 or 102, 120, 360, and 361
2. BIOS 150, 151, 250, and 350
3. PHYS 113/114 and 115/116 or 205/206, 207/208
4. ENGL 105 plus a literature course

PRE-ARCHITECTURE
Norma Hayes, Advisor

A preprofessional program in architecture is outlined in this catalog in the College of Arts and Sciences section.
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 teachers/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 arenas for learning without compromising educational rigor. A variety of programs and activities is available to members of the Lee Honors College. Independent study, special Honors seminars, inter-university enrollment at local colleges, and undergraduate internships in the community may be arranged by Honors students. The Undergraduate Research and Creative Activities Award, administered by the college, provides financial support for a variety of supervised undergraduate projects.

Student involvement is an important aspect of Honors education. Students become involved with the college not only through courses but through the Honors Student Association and Honors housing. The college sponsors trips, speakers, a newsletter, and other cultural and social activities. Through these activities students enhance their affiliation with the University and prepare themselves for leadership positions in their professional lives.

A special focus for the Lee Honors College is community involvement and volunteerism. The Office of Student Volunteer Services housed in the college provides all University students with information and referral services to over 150 local agencies and to state, national and international volunteer opportunities. Student Volunteer Services also sponsors campus-wide service events such as the College Volunteer Opportunities Fair, Hunger Cleanup, 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 Cari 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 to 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 which coordinates with other University requirements. At the freshman-sophomore level, it consists of courses which 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 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.

**Baccalaureate Writing Requirement**

Students who have been accepted into the Lee Honors College, or those who successfully complete 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 list printed each semester. All Honors courses are so indicated in 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HNRS 299</td>
<td>Honors Seminar Variable Credit</td>
</tr>
<tr>
<td>HNRS 399</td>
<td>Field Experience (Community Participation) Variable Credit</td>
</tr>
<tr>
<td>HNRS 490</td>
<td>Honors Seminar Variable Credit</td>
</tr>
<tr>
<td>HNRS 492</td>
<td>Visiting Scholars Variable Credit</td>
</tr>
<tr>
<td>HNRS 495</td>
<td>Individual Studies Variable Credit</td>
</tr>
</tbody>
</table>

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 allied discipline. A copy of the final project must be filed with the Lee Honors College. Prerequisite: approval of the thesis project by the Dean.
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 administer, orchestrate, assist, and encourage the development of WMU's international programs and activities and to work on a cooperative basis with all the colleges and departments of the University.

Under the direction of the Executive Director of International Affairs, the responsibilities of the office include the initiation and maintenance of linkages with foreign universities and agencies as well as American universities and agencies operating abroad. The office administers the University's foreign study programs, faculty and student exchanges, study abroad scholarships, field courses and seminars abroad, and study tours. It assists in the recruitment of foreign students, and aids faculty and administrators in developing technical assistance projects and in preparing proposals for funding international projects from off-campus sources. The office also sponsors conferences and symposia on international issues, provides small grants for professional international travel of faculty, and assists with applications for international fellowships for faculty and students. All inquires, contracts, negotiations, requests and the like are to be channeled through the Executive Director and the Office of International Affairs.

All courses offered abroad, faculty and student exchanges, study tours, affiliations, and consultancies conducted in the name of Western Michigan University must be authorized by the Executive Director. This provides protection for scholars and students and allows for an accurate record system regarding the University's endeavors. It also assures that the legal and financial responsibilities of the University are properly understood.

The Office of International Affairs supervises the units responsible for serving the needs of foreign students: the International Student Services Office, which handles the admission and special circumstances of foreign students, and the Career English Language Center for International Students, which provides intensive English instruction for foreign students seeking admission to U.S. institutions of higher learning.

Institution-to-Institution Linkages

The Office of International Affairs negotiates formal linkages with educational institutions abroad. These institutional affiliations involve direct operational ties, arrived at through mutual agreement and providing mutual benefit. Western Michigan University's interest in institutional affiliations around the world is a logical outgrowth of the University's integrated, international perspective on education. These linkage contracts have facilitated faculty and student exchanges, teaching and research opportunities for professors and students, visiting scholar programs, scholarships for students, and the development of library resources. The University assigns a high priority to establishing academic cooperation agreements which involve mutual collaboration and benefits and institutionalize a "Michigan connection" with the world.

Western Michigan University's "twinning program" with Sunway College in Kuala Lumpur, Malaysia is a good example of a mutually beneficial linkage contract. Through this cooperative degree program, Malaysian students who seek undergraduate degrees in business, mass communications, computer science, pre-engineering, sciences, and general education take their first two years of courses at Sunway College and the final two years at WMU. A full-time resident director from Western Michigan University supervises the curriculum to ensure that WMU-modelled courses at Sunway are exact equivalents of those at WMU. Owing to 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, hundreds of students have passed through this innovative program.

CURRENT LINKAGE PARTNERS

Africa
- Addis Ababa University, Addis Ababa, Ethiopia
- Obafemi Awolowo University, Ile-Ife, Nigeria

Americas
- University of Quebec at Trois Rivieres, Quebec, Canada
- Autonomous University of Queretaro, Queretaro, Mexico
- Autonomous University of Guadalajara, Guadalajara, Mexico

Asia
- Guangxi University, Nanning, 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
- Aoyama Gakuin Women's Junior College, Tokyo, Japan
- Daito Bunka University, Tokyo, Japan
- Japan Aviation Academy, Yamanashi and Chihose, 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 Junior College, Tokyo, Japan
- Sookmyung Women's University, Seoul, Republic of Korea
- Sunway College, Kuala Lumpur, Malaysia

Europe
- Sibelius Academy, Helsinki, Finland
- University of Tubingen, Tubingen, Germany
- Fachhochschule Kiel, Kiel, Germany
- Free University of Berlin, Berlin, Germany
- University of Paderborn, Paderborn, Germany
- University of Passau, Passau, Germany
- Institute of Nuclear Research of the Hungarian Academy of Sciences, Debrecen, Hungary
- Norwegian School of Management, Oslo, Norway
- Yago School, Madrid, Spain
- University of Leicester, Leicester, United Kingdom
- University of Nottingham, Nottingham, United Kingdom
- University of Latvia, Riga, Latvia
- Institute of Spectroscopy, Russian Academy of Sciences, Moscow, Russia
- Växjö University, Växjö, Sweden
- Inter-University Center, Dubrovnik, Croatia
Area Studies Programs

On campus, the International and Area Studies Programs serve as the focus of four specialized studies: African, Asian, European, and Latin American Studies. The course offerings for these interdisciplinary programs are selected from more than a dozen offerings for these interdisciplinary programs, culture, languages, some languages spoken in the region, philosophies, religions, history, geography, economic conditions, political systems, social changes, and international relations. Full descriptions of the area studies options are given in the interdisciplinary programs section of this catalog.

Study Abroad

Throughout the world, growing numbers of students are crossing borders to participate in international educational experiences. Each year more than 70,000 Americans study abroad, part of a larger global flow of over 10 million students who are learning about the world outside their home country. Western Michigan University considers study abroad an integral part of formal education complementing and enhancing study in Kalamazoo. To help prepare WMU graduates for this era of global affairs and multinational business, the Office of International Affairs offers a variety of opportunities for study, work, and volunteer service in foreign countries. Qualified students may study abroad by attending a program sponsored directly by Western Michigan University or another American institution, or by enrolling in a foreign university. In all cases students must enroll with the advice and guidance of the Foreign Study Coordinator in the Office of International Affairs.

Locations Abroad

Western Michigan University undergraduates regularly study in approximately 30 countries and enroll in programs and universities throughout the world. The university has established a number of its own foreign study programs and affiliations with selected institutions abroad. In addition to a challenging course of study at a foreign institution of higher learning, these programs offer the experience of immersion in the life and culture of the host country.

Asia

JAPAN

JCMU: Japan Center for Michigan Universities, Hikone, Shiga Prefecture. The JCMU is a joint project of Shiga Prefecture, the State of Michigan, and Michigan's 15 public universities, offering a two semester program in Japanese language and culture, and intensive summer Japanese language programs. Course offerings include Japanese (4 levels), Japanese society and culture, and courses taught by visiting scholars e.g. Japanese business, technology, management, Japanese politics and government, and conversation 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. This competitive scholarship covers tuition, room, and board.

The Japan Adventure/Japan Horizon Programs in Osaka, Kyoto, and Hakone. This program combines study and work in this unique, low-cost program sponsored by Keio University. Participants take Japanese language and culture classes with Japanese instructors while working on 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 Japan. This is a reciprocal exchange program in which participants pay tuition, fees, and room, and board to their home university and switch places.

Josa International University Student Exchange Program offers the opportunity to study Japanese language and culture, humanities, management, and information sciences in Togane, Oita in Kyushu. This is a reciprocal exchange program in which participants pay tuition, fees, and room, and board to their home university and switch places.

Nagoya Gakuin University Student Exchange Program offers the opportunity to study Japanese language and culture, economics, and commerce in Seto, Aichi, in the Kansai region. This is a reciprocal exchange program in which participants pay tuition, fees, and room, and board to their home university and switch places.

Otani University of Commerce Student Exchange Program offers the opportunity to study in Japan. Student and business in Oita, on the northern island of Hakkoaido. 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.

AIEJ (Association of International Education, Japan) Student Exchange Scholarships may be awarded to participants in exchange programs with WMU “sister schools”. Living expenses in Japan and airfare between U.S. and Japan are covered.

Ryoji Koie Art Scholarships enable two WMU students to study in Japan under the noted ceramist Professor Ryoji Koie. Travel and most 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 WMI Resident Director on-site. All courses are duplicates (same numbers, texts) of WMU home campus courses, including business, communications, computer science, pre-engineering, sciences, and general education. Fall, winter, and spring-summer semesters. Instruction in English.

Australia

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.

Monash University, Melbourne, Victoria offers a full curriculum, with special strengths in Australian literature, business, Southeast Asian studies, Japanese Studies, Asian languages, Australian studies, anthropology, administrative sciences, biology and mathematics. Melbourne has been called “the world’s most liveable city.” One and two semester programs.

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 and Goethe on the classic itinerary of the Grand Tour: The Netherlands, France, Germany, Austria, Switzerland, and the ultimate destination: Italy. Offered bi-annually in even numbered years.

AUSTRIA

Vienna: Semester or Year Abroad offers courses in business and liberal arts taught in English, plus German language (3 levels). Fall, winter, or academic year options. Sponsored by the Midwest Consortium for Study Abroad (MCSCA).

BELGIUM

“European Culture and Society” Program at KU Leuven, near Brussels. Founded in 1425, the Katholieke Universiteits Leuven (KUL) is situated in a “uni-verse” of world class twenty minutes from Brussels, capital of the European Community (EC). Courses focus on the development of the European Community, with offerings in business, history, international relations and the European Community, literature, communications, sociology, philosophy, theology (all in English), plus Dutch (Flemish), French and German language courses. Fall, winter, or academic year options; must be junior or senior.

CROATIA

A Future of Religion Seminar is offered each spring at the Inter-University Center of Post-Graduate Studies in Dubrovnik.

CZECH REPUBLIC

Charles University, Prague offers courses in economics, politics, history, culture (all taught in English), Czech language. Fall, winter, or academic year options. Sponsored by C.I.E.E.

ENGLAND

The 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, medieval social history, history, law, and psychology. Personal tutors are allocated to each student each semester. Fall, winter, or academic year options.

University of Nottingham Student Exchange Program offers a full curriculum including archaeology, languages, history, economics, geography, law, management and finance, politics, psychology, medicine, computer science, and the physical and life sciences. Nottingham is famous as the home of the legendary Robin Hood and Sherwood Forest. This is a reciprocal exchange program in which participants pay tuition, fees, and room, and board to their home university and switch places.
The American College in London offers The WMU Oxford Summer Seminar, offered winter, spring, and summer quarters. Decades, it is WMU’s oldest and most commercial art, fashion design, fashion theory, merchandising, and interior design. Fall, while in residence at a college of the education, opera, orchestra and choir instruction in the language, history, politics, all taught in English. Semester, academic year, and summer options.

FINLAND
The Abo Akademi Academy, Helsinki, offers studies in performing music, jazz, folk music, music education, opera, orchestra and chor conducting, and composition and music theory.

FRANCE
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 (Britanny) offers courses in advanced French language, culture, civilization. Fall, winter, or academic year options. Sponsored by C.I.E.E.

GERMANY
The Free University of Berlin, the University of Paderborn, the University of Passau, and the University of Tubingen participate in student exchange programs with WMU. Competitive scholarships are available for some of these exchanges provided by the Office of International Affairs.

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. Sponsored by the Cleveland Institute for the Arts.

RUSSIA
With spring or summer field courses offer instruction in the language, history, politics, and culture of Russia and other members of the Commonwealth of Independent States.

SPAIN
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 y Pelayo offer course options in: 1) advanced Spanish language and liberal arts, 2) business and advanced Spanish, and 3) a student teaching program. Semester or academic year options. Program sponsored by C.I.E.E.

SWEDEN
Vasa University Student Exchange Program offers the opportunity to study in Sweden’s “international” university south of Stockholm. Participants enroll in an integrated English-language program which includes programs in business, comparative politics, international economics, and Scandinavian culture, intensive Swedish language course is also available as a reciprocal exchange program in which participants pay tuition, fees, and room, and board to their home university and switch places.

Latin America and the Caribbean
MEXICO
Universidad Autonoma de Queretaro, in the colonial city of Queretaro, northwest of Mexico City, is the site of WMU’s study abroad program in Mexico. Participants take a course in Spanish language and culture, and then other courses of their choice with Mexican students in the Colleges of Sociologia (humanities and social sciences) or Business. Intermediate to advanced Spanish skills required. Winter semester or academic year. The Universidad de las Americas (UDLA), Puebla offers a full curriculum taught in Spanish, including: business 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 summer options.

ISRAEL
Tel Aviv University offers courses in Arabic and Hebrew languages (3 levels), archaeology, arts, business/management, Israeli studies, Jewish/Judaic studies, life sciences, Middle East studies, taught in English. Semester or academic year options.

MEDITERRANEAN INSTITUTE
WMU’s Summer Institute on the Mediterranean World is a ship-based program which cruises to archaeological sites in Italy, Southern France, Greece, Turkey, Egypt, and Israel.

Other Locations
I.S.E.P. Programs
Western Michigan University is a member of the International Student Exchange Program (ISEP), which was established in 1979 under the Fulbright-Hays Act. ISEP is an organization of more than 200 universities around the world that exchange students on a reciprocal basis for a semester or academic year, participants pay tuition, fees, and room, and board to their home university and switch places. WMU students can choose from more than 100 universities worldwide, including non-traditional sites in Africa, Asia, Eastern Europe, Latin America, and the South Pacific. Full information and application materials are available in the Office of International Affairs.

C.I.E.E. PROGRAMS
Western Michigan University is a member of the Council on International Educational Exchange (C.I.E.E.), which through its Cooperative Centers for Study Abroad offers a variety of international opportunities. C.I.E.E. has developed programs for students of many different academic areas, programs in developing countries, and programs that include an experiential learning component. In addition to the C.I.E.E. programs in the Czech Republic, France and Spain noted above, WMU students may participate in programs in Argentina, Brazil, China, Costa Rica, Ghana, Hungary, Indonesia, Poland, Russia, Thailand, and Vietnam. Full information and application materials are available for these programs at the Office of International Affairs.

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 are offered in cooperation with universities and social services agencies abroad. Locations vary from year to year; past sites include England, Nicaragua, and Russia.

SPRING AND SUMMER FIELD COURSES
In addition to these programs, Western Michigan University sponsors a variety of overseas courses and study-tours in spring and summer designed for students, teachers, alumnae, and friends of the University. Sites of past programs include China, Kenya, and Vietnam.

Since Western Michigan University’s study abroad offerings are subject to change, interested students are urged to contact the Office of International Affairs for up-to-date information.

About Studying Abroad
WHO STUDIES ABROAD
WMU undergraduate students from all colleges and majors are eligible to study abroad. Approximately 70,000 American college students study abroad each year. Given the growing interdependence of the world community, overseas experience is becoming an important component of a complete college education.

WHEN STUDENTS STUDY ABROAD
WMU students usually study abroad their sophomore, junior, or senior year. Many students find that their sophomore or junior year is the most satisfactory time to study abroad. To ensure adequate preparation, it is useful to begin planning for study abroad six to twelve months before the intended semester(s) abroad.

TRANSFER OF CREDITS AND GRADES
Students participating in study abroad through the Office of International Affairs will receive credit for their work abroad. The Foreign Study Coordinator 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 Foreign Study Coordinator, and must arrange
credit transfer with the FSC before leaving for study abroad. The Foreign Study Coordinator will assist students through the process of applying, pre-arranging, and transferring credit.

FOREIGN LANGUAGE REQUIREMENTS
Many foreign study programs do not require any previous experience with a foreign language, while other programs require up to two years or the equivalent of college-level language study. Students should begin 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.

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 in Belgium, Egypt, Israel, and Malaysia, including many of the options listed above. Some students do not start studying 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 Foreign Study Coordinator 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 which enables U.S. students to work abroad legally on a temporary basis in Britain, Canada, Costa Rica, France, Germany, Ireland, Jamaica, and New Zealand. Information is also available about International Workcamps and other opportunities for voluntary service abroad.

Summer Institutes
Summer Institutes in “English Language and American Culture,” “Business and American Society,” “Law and American Society,” and/or “Technology and American Society” are offered by the Office of International Affairs in cooperation with the Career English Language Center for International Students (CELICS) each year in June, July, and August. A combination language and lecture program is tailored to the interests and schedule of each group. Subjects covered may include American English, Business English, American national character, history, politics, social issues, international relations, business practices, arts, and music.

The Business, Law, and Technology Programs include visits to factories, offices, and farms, including such places as General Motors, Nippondenso, Pioneer Seed Company, and the Chicago Board of Trade. The extracurricular program includes home visits with American families, a picnic at a Lake Michigan beach, local touring and visits to such places as the President Gerald R. Ford Museum in Grand Rapids and the Henry Ford Museum (Greenfield Village) near Detroit. Summer Institutes are often combined with tours around the United States.

Fulbright Campus Office
The Office of International Affairs is the official campus liaison office with the Council for the International Exchange of Scholars (CIES) and the Institute of International Education (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 25 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 Columbia, a teaching assistantship in Germany, archaeology in Italy, and theatre in England and South Africa.

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, American Council on International Education, the Council on International Educational Exchange, the Association of Collegiate Registrars and Admissions Officers, and NAFSA: The Association of International Educators.

Directly and through constituent units of the University, the Office of International Affairs builds linkages with organizations engaged in providing international services to U.S.-based and foreign clients. It also distributes information about the international professionalization of African Studies, Asian Studies, European Studies and Latin American Studies. Every semester, more than 140 courses are offered in international and Area Studies by faculty in 13 departments. Area Studies programs operate under the aegis of the Office of International Affairs. Detailed descriptions of the major and minor requirements for these programs may be found in the College of Arts and Sciences interdisciplinary programs section of this catalog.

Canadian Studies Committee
Inayat Mangla, Chair
Finance and Commercial Law
3242 Schneider Hall
(616) 387-5693

The Canadian Studies Committee promotes teaching and research in Canadian history, culture, and contemporary affairs. It sponsors course offerings in Canadian subjects, and organizes symposia on Canadian subjects and U.S.-Canadian relations.

International and Area Studies
Howard J. Dooley, Executive Director
2090 Friedmann Hall
(616) 387-3951

Office of International Affairs assists in overseas informational and recruiting activities.
MILITARY SCIENCE

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 offers a four year and a two year Military Science program, which can lead to an officer's commission in the Army Reserve, Army National Guard, or Regular Army upon successful completion of the program. ROTC scholarships are available to students, and a student need not be enrolled in the military science program to compete for the ROTC scholarship.

The chair of the department and all instructors are officers or noncommissioned officers of the United States Army assigned to the department by permission of the University. They administer the military science program and conduct all classes offered by the department. The government provides uniforms for all Advanced Course students as well as additional financial assistance for students in the last two years of the program.

Career Opportunities

Army ROTC increases opportunities for students by giving them options and by developing leadership potential for a civilian and/or military career. To enter the Advanced Course, a student agrees to finish the ROTC instruction, then accept a commission and an assignment in either active or reserve forces duty.

The active duty career option is usually three years for non-scholarship students, and an assignment to a leadership position similar to the junior management level in the civilian sector. Starting salary for a second lieutenant on active duty is approximately $26,000, plus benefits.

The reserve forces career option combines the benefits of a civilian job with the leadership and management experience gained in the Army Reserve or National Guard. The reserve forces obligation is three to six months on active duty (attending a military branch school for the Officer Basic Course) and the remainder of an eight-year obligation in the reserve forces.

ROTC Admission Requirements

ROTC courses are open to all university students with no obligation.

To be eligible to enter into the Advanced Course (Commissioning Program) students must: be a full time student; be a U.S. Citizen, not be more than 27 years of age; have a minimum cumulative GPA of 2.0; not be a single parent; satisfy the Basic Course requirements either through attendance at ROTC Basic Camp, prior military service, or successfully passing all Basic Course academic requirements; be able to pass the Army Physical Fitness Test; be of good character as evidenced by no record of disciplinary problems or civil convictions; not be an alcohol abuser or drug user; and pass a Military Entrance Physical Exam.

Scholarships

Army ROTC has one of the largest scholarship programs in the nation.

Awards are competitively based on ability, not on income. ROTC scholarships are offered for two, three, and four years.

Four-year scholarships are awarded to incoming college freshman. Three year and two year scholarships are awarded to students already enrolled in the university. It is not a requirement to be enrolled in ROTC to compete for a scholarship.

ROTC scholarships pay for 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. Additionally, WMU provides ROTC scholarship recipients with a $1000 annual incentive award.

Facilities

The department is located in Oakland Gym, with an indoor marksmanship range and classroom facilities. Special training is also conducted at Fort Custer Army Reserve Training Center near Augusta, Michigan.

More information about the ROTC program is available at the ROTC office in Oakland Gym by calling 616-387-8120 or 616-387-8122.

Four Year Program

The four year military science program is divided into a Basic Course (first two years) and an Advanced Course (last two years) and is offered as a minor program by the University. Students who participate in the Basic Course are under no obligation to the active Army or the reserves.

Basic Course

The Basic Course is designed to give students a general knowledge of the role of national defense and also provides knowledge of leadership skills needed by military officers. Students completing the Basic Course have an opportunity to be considered for the Advanced Course program and obtain the commission in the active Army or Reserve Components. ROTC students take at least one military science course each semester. First year students normally take MLSC 140 in the fall and MLSC 150 in the winter semester. Sophomore students take MLSC 240 during the fall and MLSC 250 during the winter.

Exceptions to the above requirements must be approved by the chair of the department. Students who have had three
years of junior ROTC (High School JROTC) or more than six months of active military service may, with the approval of the chair of the department, have 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 school is in session (up to $1,500 a year). The major emphasis of the Advanced Course is the development of individual leadership and military skills. During the junior year, students complete MLSC 340 and 350. Between the junior and senior year, students will receive pay for attending a six week camp which can qualify for academic credit (MLSC 390). During the senior year, students complete MLSC 440 and MLSC 450. Course work is also required of students in the areas of history, behavioral sciences, written communications, mathematics, and computer science in order to complete the Military Science minor. These courses will be taken in the general education distribution program areas. The Department of Military Science advisor should be consulted on the specific courses which satisfy these requirements. Exceptions must be approved by the chair of the department.

Two Year Commissioning Program
For those students who are transferring into the University, graduate students, and currently enrolled students who have not taken military science courses, but desire to be commissioned as a second lieutenant, a two year program is available. Students enter this program by applying for attendance at no obligation, to a six week ROTC Basic Summer Camp at Fort Knox, Kentucky. Attendance and successful completion of Basic Summer Camp is substituted for the Basic Course classes. At the basic camp, which can qualify for academic credit (MLSC 290), the student is trained, fed, and housed at the expense of the government. The student also receives travel pay plus a salary of approximately $761. Contact the Department of Military Science for details.

Veterans need only to complete the Advanced Course requirements while he or she is finishing the overall degree requirements in order to be eligible for a commission.

Contracted students in the two year program receive uniforms and a non-taxable subsistence allowance of $150 per month while school is in sessions (up to $1,500 a year).

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.

SECOND YEAR COMMISSIONING PROGRAM
In addition to the courses listed above, all students in the minor program must complete one course from each group below:

A. History
HIST 330 3 hrs.
HIST 414 3 hrs.

B. Mathematics
MATH 111 3 hrs.
MATH 116 3 hrs.
MATH 366 4 hrs.

C. Political Science
PSCI 250 4 hrs.
PSCI 350 4 hrs.

D. Psychology/Sociology
PSY 100 3 hrs.
SOC 171 3 hrs.

Military Science Courses (MLSC)
A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture-lab hours).

BASIC COURSE
MLSC 140 Military Survival Skills (2-2) 2 hrs. Fall, Winter
Emphasis is placed on outdoor survival skills; including land navigation, survival cooking, cold/hot weather injury prevention, basic first aid, CPR, and physical fitness. An off-campus exercise will put to use skills acquired during the course.

MLSC 150 Military Aspects of National Power (2-2) 2 hrs. Fall, Winter
A study of the factors contributing to national and international power, and an introduction to the principles of warfare and the causes of international conflict.

MLSC 240 Basic Leadership (2-2) 2 hrs. Fall
A study of leadership principles and methods of instruction. Includes a study of the evolution, purpose, and organization of the military.

MLSC 250 Basic Tactics (3-2) 3 hrs. Winter
A study of tactical considerations and employment of small military units to include their movement based on topographic map reading and land navigation techniques.

MLSC 290 Basic Leadership Field Experience 3 hrs. Spring, Summer
A six week summer camp designed for students who were unable to take the Military Science Basic Course on campus. The students receive practical experience and instruction in tactical and technical subjects, with specific emphasis on leadership training in the form of problem analysis, decision-making, and troop-leading experiences. Prerequisite: Approval of department chair.

MLSC 299 Studies in Military Science 2 or 3 hrs. Fall, Winter, Spring, Summer
An opportunity for students who have been unable to take military science courses in sequence to obtain needed course work at more convenient times. Course content is adapted to meet the individual needs of the student. Prerequisite: Approval of department chair.

ADVANCED COURSES
MLSC 340 Advanced Leadership (3-2) 3 hrs. Fall
Studies of authority and responsibility, communication, leadership fundamentals, planning, counseling skills coordination, and ethical decision-making with emphasis on practical application to military situations. Prerequisite: Approval of department chair.

MLSC 350 Advanced Concepts of Tactical Employment (3-2) 3 hrs. Winter
A study of tactical situations. Development of planning and coordination sequences applicable to the employment of military resources. Prerequisite: Approval of department chair.

MLSC 390 Advanced Military Leadership (3-0) 3 hrs. Spring, Summer
A six week training session designed to supplement current instruction by providing the cadet practical experience and instruction in tactical and technical subjects with specific emphasis on leadership training in the form of problem analysis, decision-making, and troop-leading experiences. Prerequisites: Approval of department chair.

MLSC 440 Command and Staff (3-2) 3 hrs. Fall
A comprehensive course in the fundamentals of military administrative, logistical, training management, and the Army Officer Evaluation Reporting Systems. Prerequisites: Approval of department chair.

MLSC 450 Military Law, Ethics and Professionalism (2-2) 2 hrs. Winter
Course content includes a survey of military justice, ethics, and professionalism required of military leaders. Prerequisite: Approval of department chair.

MLSC 499 Studies in Military Science 1-4 hrs. Fall, Winter, Spring, Summer
An opportunity for students who have been unable to take military science courses in sequence to obtain needed course work at more convenient times. Course content is adapted to meet the individual needs of the students. Topics may vary from semester to semester and students may repeat the course. Prerequisite: Approval of department chair.

MLSC 299 Studies in Military Science 2 or 3 hrs. Fall, Winter, Spring, Summer
An opportunity for students who have been unable to take military science courses in sequence to obtain needed course work at more convenient times. Course content is adapted to meet the individual needs of the student. Prerequisite: Approval of department chair.
A Program For Students Who Choose To Explore Academic and Career Options

University Curriculum provides beginning and transfer students who wish to explore academic and career options with advising, assessment, and referral services designed to help them select a curriculum. The program is designed with a sensitivity to students' developmental as well as academic needs.

Students in the University Curriculum are assigned advisors who are specialists in academic planning, human development, and career planning. Help is provided for course selection, academic program planning, interpreting skills and interest assessments, exploring academic and career alternatives, and establishing goals.

In addition to academic advising and career counseling, opportunities available for University Curriculum students include:

- UNIV 101: Freshman Seminar, 1-3 hours
- UNIV 102: Career Exploration and Development, 1 hour
- Academic Skills Center Programs and Workshops
- Career Exploration and Media Center
- Skills and Interest Assessments
- Specially-designed freshman curriculum options suited to skills and interests.

Course Options

UNIVERSITY (UNIV)

UNIV 101 Freshman Seminar
1-3 hrs.
This course is designed to assist students to encounter experientially, intellectually, and emotionally the various avenues of learning, and to foster the academic, personal, social, and career development of each student. The activities and assignments of the course aid students in the development of an intellectual awareness and provide the skills and self-management required for a successful transition from high school to the University. The course is intended to excite students about learning and living in the new and challenging world of Western Michigan University. **For freshmen only.**

UNIV 102 Career Exploration and Development
1 hr.
This course is designed to help the undecided student assess and develop skills in self-awareness, career awareness, decision-making, and planning. It will include activities to identify and explore the following areas: values, interests, career information, decision-making, and University resources. Assignments will involve written exercises and research in the Career Media Center.
College Mission Statement

The mission of the College of Arts and Sciences, in accordance with the traditional stewardship of the College, is to engender in students those skills, attitudes, and habits of mind which permit them to function responsibly in a profoundly complex and changing world. The College of Arts and Sciences at Western Michigan University offers undergraduate courses and programs of study in the humanities, the social and behavioral sciences, and the physical, biological and mathematical sciences. In addition to providing specialization in its many disciplines, the College contributes to the basic knowledge and the general liberal education of all students attending Western Michigan University.

The goals of the College for the undergraduate student, while including professional, pre-professional or vocational training, are specifically focused on developing the liberally educated adult. To this end, the College seeks to ensure that its students learn the skills necessary for critical thinking, decision making, problem solving and adapting to change; that they explore broadly in areas that will encourage understanding of their western and/or global heritage; and that they develop a respect for diversity in the world and the pluralism in this society. The College strives to encourage the growth of persons who have the self-confidence that comes with knowledge and the ability to seek out, analyze and evaluate information; persons who are 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.

Curriculum and Majors

The College of Arts and Sciences has a single, unified curriculum, LEC. All students who graduate from the College of Arts and Sciences will be enrolled in the LEC curriculum. For a list of Arts and Sciences majors, see "Undergraduate Curricula and Approved Majors" in the Degrees and Curricula section of this catalog.

College Degree Requirements

1. The Liberal Education Curriculum. Students who enter with the 1995 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 catalogues 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 no later than prior to completion of 35 semester hours. Transfer students with more than 35 hours should apply before matriculation. Failure to do this may mean that a student will not be permitted to enroll in major core courses. Change of curricula during the junior or senior year will be accommodated where possible.

3. Students who will graduate through the College of Arts and Sciences may use courses offered through Self-instructional programs according to the following distribution of the 15 credits allowed in the Undergraduate Catalog. Up to 9 credit hours taken through Self-instructional Programs may be used in fulfillment of the LEC Distribution Core and Academic Proficiency Areas; 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 LEC Distribution Core and Academic Proficiency Areas. Students with unusual circumstances rendering Self-Instruction temporarily appropriate for work in a major or minor in Arts and Sciences must have written approval from the department chairperson or department advisor before registering for those courses.

4. The Credit/No Credit option is not applicable to Liberal Education Curriculum Distribution or Proficiency requirements for students who will graduate through the College of Arts and Sciences.

5. The College Level Examination Program (CLEP) is not permitted in fulfillment of Liberal Education Curriculum Distribution or Proficiency requirements for students who will graduate through the Arts and Sciences curriculum.

The Liberal Education Curriculum

All students at Western Michigan University must satisfy the University General Education requirements. The Liberal Education Curriculum 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 through completion of the Liberal Education Curriculum (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. The LEC 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 course work from a foreign college or university, is encouraged.

The LEC is composed of the Distribution Core and the Academic Proficiencies. Students must complete a minimum of 37 credit hours in fulfilling this program, exclusive of the Baccalaureate-Level Writing proficiency which is a requirement for a major.

Distribution Core

Courses in the Distribution Core fall into three categories: Arts: Creativity and Expression (Areas 1-3); Science: Context and Institution (Areas 4-7); and Society: Heritage and Prospect (Areas 8-12). These courses represent a wide range of the interests of faculty in the College of Arts and Sciences, and students are encouraged to browse among the courses listed in each area to choose those that are most suited to their own interests. At the same time, the area descriptions should focus students' attention on the educational goals presented by the courses in each group.

• At least one course must be elected from each of the twelve areas of the Distribution Core.

• At least one science course must have a laboratory; these courses are marked t.

• Courses marked * are approved in Area VII of the new University General Education Program (effective Fall 1996); students following the LEC must select one of these courses to fulfill the LEC area in which it is listed.

• Some courses are listed in more than one area. Credit toward fulfillment of the Distribution Core will only be given for one of the listed areas; students choosing such a course must select the area they wish it to fulfill.

• Students who graduate from the College of Arts and Sciences and complete the LEC may elect up to but no more than three courses from any one department to fulfill the Distribution Core Areas 1-12. Courses in the Proficiency Areas are not included in this restriction.

• At least six credits of the LEC Distribution Core must be completed at the 300-400 level.

AREA 1. FORMATIVE IDEAS

Courses in this area examine ideas that have had a recognized influence on Western or world society and their repercussions. These ideas have shaped major social institutions, defined central values or prompted new methods of inquiry and scientific discovery.

Courses at 100-200 level

BAS 210 Black Nationalism in America

PHIL 200 Introduction to Philosophy

PHIL 201 Introduction to Ethics

REL 100 Religions of the World

Courses at 300-400 level

ENGL 315 The English Bible as Literature

PHIL 300 Ancient and Medieval Philosophy

PHIL 311 Political Philosophy

PHIL 350 Foundations of the Modern Worldview

PSCI 360 Introduction to the History of Political Theory I: Political Theory to Thomas Hobbes

PSCI 361 Introduction to the History of Political Theory II: Political Theory from Thomas Hobbes to Karl Marx

PSCI 362 Theoretical and Ideological Bases of Contemporary Politics

WMS 401 Foundations of Feminist Theory

AREA 2. THE HUMAN CONDITION

Courses in this area enhance the student's awareness of the dilemmas, ironies, and triumphs of human existence. While courses may be in various disciplines and may draw upon either textual materials or the dramatic and plastic arts, course materials are examined specifically for their depictions of human experience.

Courses at 100-200 level

ENGL 111 Myth and Folk Literature

ENGL 112 Literary Classics

ENGL 252 Shakespeare

ENGL 282 Children's Literature

HIST 100 Early Western Civilization

HIST 101 Modern Western World

WMS 100 Media and the Sexes

Courses at 300-400 level

ENGL 307 Literature in Our Lives

ENGL 308 Out of the Self

ENGL 416 Women in Literature

HIST 300 Arts and Ideas: Ancient/Medieval

HIST 301 Modern Arts and Ideas

LANG 375 Foreign Language in English Translation: Views of Humanity

PHIL 303 Existentialist Philosophies

AREA 3. MEDITATIONS OF EXPRESSION

Courses in this area develop a student's appreciation for aesthetic creativity and for the many ways humans have found to express their emotions and intellects. Either appreciation courses or experiential courses that teach specific creative or expressive skills are appropriate.

Courses at 100-200 level

ART 120 Introduction to Art

ART 130 Studio Experience (3d)

ART 140 Studio Experience (2d)

ART 148 Direct Encounter with the Arts

ART 220 History of Art

ART 221 History of Art

DANC 145 Experiencing Dance

DANC 148 Direct Encounter with the Arts

DANC 181 Dance Improvisation

ENGL 110 Literary Interpretation

ENGL 150 Literature and Other Arts

ENGL 210 Film Interpretation

MUS 148 Direct Encounter with the Arts

MUS 150 Live Music Appreciation

MUS 151 Jazz/Pop Music Appreciation

MUS 152 Rock Music: Genres and Development

THEA 100 Introduction to Theatre

THEA 105 Introduction to African American Theatre

THEA 148 Direct Encounter with the Arts

Courses at 300-400 level

BAS 330 History and Significance of the Black Pop Culture

BAS 400 Blacks in the Arts

HIST 315 Popular Art and Architecture

LANG 376 Foreign Literature in English Translation: Form and Meaning in Literature

MUS 450 Music Appreciation: The Symphony

PHIL 312 Philosophy of Art

AREA 4. PHYSICAL SCIENCE

Courses in this area introduce students to fundamental concepts of physical science and their significance for modern society.

Courses at 100-200 level

CHEM 101 General Chemistry I

CHEM 102 General Chemistry II

CHEM 103 General Chemistry III

CHEM 107 Chemistry of Textiles and Design

CHEM 150 Chemistry in Society

PHYS 105 Introductory Astronomy

PHYS 109 Elementary Physics

PHYS 113 General Physics I

PHYS 114 General Physics II

PHYS 205 Mechanics and Heat

PHYS 206 Mechanics and Heat

Laboratory (Must be taken with PHYS 113) t

PHYS 207 Evolution of Life t

PHYS 222 Ocean Systems-Resources, Technology and Challenges

Courses at 300-400 level

GEOL 312 Geology of the National Parks

AREA 5. LIFE SCIENCE

Courses in this area introduce students to fundamental concepts of the life sciences and their significance for modern society.

Courses at 100-200 level

ANTH 250 Introduction to Biological Anthropology

BIOS 105 Environmental Biology

BIOS 110 Biology Laboratory (Must be taken with BIOS 105 or BIOS 112) t

BIOS 112 Principles of Biology

BIOS 151 Organismal Biology

Bios 234 Outdoor Science t

PSY 100 General Psychology

AREA 6. EARTH SCIENCE

Courses in this area introduce students to fundamental concepts of earth sciences and their significance for modern society.

Courses at 100-200 level

GEOG 101 World Ecological Problems

GEOG 105 Physical Geography

GEOG 108 Contemporary Domestic Economics

GEOG 130 Physical Geography

GEOG 200 Evolution of Life

GEOG 222 Ocean Systems-Resources, Technology and Challenges

Courses at 300-400 level

GEOL 301 Physical Geology

AREA 7. SOCIAL SCIENCE

Courses in this area concern the nature of society's principal institutions such as family, religion, polity and the economy either in the United States or in a comparative setting. When primary concern is upon one institution, its relationships with other major institutions must be explicitly recognized.

Courses are not limited to the social science disciplines.

Courses at 100-200 level

ANTH 100 Human Origins

ANTH 110 Lost Worlds/Archaeology

ANTH 210 Introduction to Archaeology

ANTH 240 Principles of Cultural Anthropology

ANTH 270 Evolutionary Theory

COMM 200 Introduction to Communication Theory

ECON 107 Contemporary Domestic Economics

ECON 108 Contemporary International Economics

ECON 109 History of Modern Economic Society

ECON 201 Principles of Microeconomics
ECON 202 Principles of Macroeconomics
GEOG 102 World Geography/Maps
GEOG 244 Economic Geography
PSCI 100 Introduction to Political Science
PSCI 240 Introduction to Comparative Politics
PSCI 250 International Relations
SOC 200 Principles of Sociology

Courses at 300-400 level
PHIL 313 Philosophy of Law
WMS 310 Women and Social Institutions

AREA 8. SOCIAL PLURALISM
Courses in this area introduce students to the perspectives of diverse peoples of the United States and instill an appreciation of the social tensions and cultural richness produced by such diversity. Courses may cover such topics as race, gender, class, ethnicity, age, religion or sexual preference.

Courses at 100-200 level
BAS 200 Black Presence
ENGL 222 American Literature and Culture
ENGL 223 Black American Literature
SPAN 275 Latino Writing/Latino Culture
WMS 200 Introduction to Women's Studies

Courses at 300-400 level
ANTH 347 Cultural Anthropology
PSCI 341 African Political Systems
PSCI 342 Asian Political Systems
PSCI 346 Women in Developing Countries
REL 301 Black World in the Indian Tradition
REL 303 Chinese Religion
REL 304 African Religions
REL 307 The Islamic Tradition
REL 308 Japanese Religion
SOC 304 Nonwestern World
SOC 334 Pacific Rim Asian Societies
SOC 336 Modern Japanese Society

AREA 11. WESTERN HERITAGE
Courses in this area study extend a student's understanding of the Western tradition beyond but not necessarily excluding the United States. "Western" is understood to comprise Europe and the Western Hemisphere. Courses cover the history of a significant period or the culture of a specific locale.

Courses at 100-200 level
ECON 109 History of Modern Economic Society
HIST 145 Heroes and Villains in the Middle Ages

Courses at 300-400 level
ANTH 339 Cultures of Latin American
ANTH 343 Cultures of Eastern Europe
ANTH 344 Indians and Eskimos
ENGL 312 Western World Literature
ENGL 330 British Literature I
ENGL 331 British Literature II
ENGL 381 South America
ENGL 382 Mexico and the Caribbean
ENGL 383 Western and Southern Europe
ENGL 384 The Post-Soviet States
HIST 336 Women in European History
HIST 349 Ancient Near East
HIST 350 Ancient Greece and the Hellenistic World
HIST 351 Ancient Rome
HIST 360 The Medieval World
HIST 361 Society and Culture
HIST 362 History of England
HIST 363 Britain and the British Empire
HIST 364 Modern Europe: Culture and Society
HIST 366 Russia: Yesterday and Tomorrow
HIST 370 History of Latin America
LANG 350 Classical Greek and Roman Mythology
PHIL 300 Ancient and Medieval Philosophy
PHIL 301 History of Modern Philosophy
PSCI 340 West European Political Systems
PSCI 343 Latin American Political Systems
PSCI 344 Russian and East European Politics
REL 305 The Christian Tradition
REL 306 The Jewish Tradition
RUSS 310 Russian Civilization

AREA 12. RESPONSIBLE DECISION MAKING
Courses develop students' powers of evaluation and judgment in making ethical decisions. A course may focus on the process of ethical reasoning per se, or it may be applied to some specific content such as medical ethics, international relations, or appropriate applications for technology.

Courses at 100-200 level
ANTH 140 Anthropology in Action
GEOG 100 World Ecological Problems*
GEOG 144 Environmental Earth Science*
PHIL 201 Introduction to Ethics
PHIL 220 Critical Reasoning
PHIL 250 Science, Technology, and Values

Courses at 300-400 level
BAS 314 The Black Community
BAS 320 Ecology of the Black Community
BAS 360 Black Women and Black Relationships
ENGL 311 Our Place in Nature
GEOG 350 Conservation and Environmental Management*
HIST 306 Technology and Culture
HIST 313 American Diplomatic History
HIST 318 Environment and the American Experience
PHIL 314 Philosophy and Public Affairs
PHIL 316 Ethics in Engineering and Technology
PHIL 434 Biomedical Ethics*

College Academic Proficiencies
All LEC students must satisfy the following Academic Proficiency Requirements.

1. COLLEGE-LEVEL WRITING: (a) Complete ENGL 105 with a passing grade or (b) if qualified by virtue of ACT English score, demonstrate superior writing skills sufficient to warrant exemption from the University College Writing Requirement by taking the Writing Placement Examination prior to attaining sophomore status. When they are offered, HIST 106 or PHIL 100 may be substituted for ENGL 105.

2. BACCALAUREATE-LEVEL WRITING: Complete, with a passing grade, at least one writing intensive course above the level of ENGL 105. Normally this will be a course in the major, designated as writing intensive and fulfilling the University Baccalaureate Writing Requirement. See departmental advisor for a list of approved courses for the major.

3. COLLEGE-LEVEL MATHEMATICS OR QUANTITATIVE REASONING: (a) Complete, with a passing grade, a college-level mathematics or quantitative reasoning course other than MATH 111 requiring MATH 110 or its equivalent as a prerequisite, or (b) place into MATH 122 or higher on the Mathematics Placement Examination.

MATH 114 Excursions in Mathematics
MATH 116 Finite Mathematics with Applications

MATH 118 Precalculus Mathematics
MATH 160 Statistics and Data Analysis
MATH 190 Survey of Mathematical Ideas

MATH 200 Calculus with Applications

4. COMPUTER USAGE: Demonstrate competency in computer usage by (a) attaining an appropriate score on the University Computer Proficiency Examination or (b) completing, with a passing grade, one of the computer usage courses listed below. Students are urged to select the course that most nearly relates to the area(s) in which they expect to major.

CS 105 (Humanities Section)
CS 105 (Social Science Section)

CS 105 (Mathematics, Statistics, and Natural Sciences)
5. FOREIGN LANGUAGE: (a) Complete two semesters of college level study of any one foreign language with a passing grade, or (b) place into a foreign language course at the 200 level or above on the Foreign Language Proficiency Examination.

6. CRITICAL THINKING: Complete, with a passing grade, a 3- or 4-credit hour course specifically designed to develop the skills of critical or analytical thought processes. This proficiency requirement may be met with courses in Critical Thinking programs per se or courses within subject areas that have been designated as fulfilling the requirement; a course approved for both critical thinking and a distribution area may be counted toward both requirements.

Note: The following courses are currently approved to meet this requirement. It is expected that additional courses will be approved. Check with advisor for updated list of approved courses.

PHIL 205 Critical Reasoning
PHIL 225 Deductive Logic
PHIL 320 Introduction to Formal Logic
PSCI 105 Critical Thinking About Politics

7. HEALTH AND WEL-BEING: Complete courses as needed to fulfill the University Health and Well-being requirement.

The Academic Advising Office

George H. Demetropoulos
Kate Hayes
Maria McGurn
2046 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 Academic Advising Office. Students interested in this option should contact the Director of Advising in the College of Arts and Sciences. Those entering the SEMINARS

1. Arts and Sciences Seminar (A-S)
   A-S 320 Interinstitutional Study
   1-12 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. 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. May be repeated for 1-6 credit hours.

2. Arts and Sciences Seminar (A-S)
   A-S 330 Study Abroad—WMU Programs
   1-16 hrs.
   Student participation in an approved study abroad program of study in a foreign college or university organized through Western Michigan University's Office of International Affairs. 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. May be repeated for up to 32 credit hours.

3. Arts and Sciences Seminar (A-S)
   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. May be repeated for up to 32 credit hours.

4. Arts and Sciences Seminar (A-S)
   A-S 390 Arts and Sciences Seminar
   1-4 hrs.
   A variable topics course in interdisciplinary studies or other subjects that fall outside the traditional disciplines. May be repeated 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.

5. Arts and Sciences Seminar (A-S)
   A-S 399 Field Experience (Community Participation)
   2-8 hrs.
   A program of independent study combining academic work with social, environmental, civic or political field work. May be used as elective credit only. Prerequisites: A written outline of the student's project, approved by a faculty supervisor, with approval from the office of the Dean.

6. Arts and Sciences Seminar (A-S)
   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 of investigation, determining appropriate products or results, and securing the cooperation of a faculty member to supervise the work must be obtained from the student. The proposal 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 recommendation of the proposal. Repeatable up to the maximum of 6 credit hours. Prerequisite: Approval of the instructor.

FOREIGN STUDIES SEMINARS

Students may receive up to six hours credit in any combination of departments as described herein 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.
   Students 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 Sociology, 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 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. American Studies Program
2. Black Americana Studies Major and Minor
3. Criminal Justice Program
4. Environmental Studies Program
5. International and Area Studies Programs: African, Asian, and Latin American Studies
6. Medieval Institute Program
7. Science and Mathematics Teaching
8. Social Science Teaching Minors
9. Women’s Studies Major and Minor
10. World Literature Minor

American Studies Program
Ronald Davis, Advisor
4075 Friedmann Hall (387-4650)

Students in American Studies follow an interdepartmental program bringing to bear the insights of art, music, drama, literature, and the social sciences on the problems of American life. A broad-ranging study of American culture can provide an excellent background for students preparing for careers in education, advertising, journalism, research, communications, and publishing.

The Minor requires 20 hours from four participating departments, houses, politics, public relations work, and government and industry, the foreign service, mass communications, or law.

American Studies also offers perceptive students an opportunity to evaluate the forces shaping American life. A broad-ranging study of American life is generally considered a prerequisite.

MAJOR IN AMERICAN STUDIES
Students majoring in American Studies are expected to complete:
1. At least 36 hours in five approved fields.
2. At least 18 hours in courses numbered 300 or above.
3. At least 12 hours in one participating department.
4. An interdepartmental course dealing with basic issues in American culture.

Baccalaureate Writing Requirement
Students who have chosen the American Studies major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:
HIST 390 Introduction to the Study of History
PHIL 410 Professional Ethics

MINOR IN AMERICAN STUDIES
The Minor requires 20 hours from four approved fields of American Studies and one two-hour interdisciplinary independent study (Arts and Sciences 501). Approval of the advisor is required for entry into the program. Minor slip is required.

Black Americana Studies
LeRoi R. Ray, Jr., Director and Advisor
815 Sprau Tower
(616) 387-2664

Leander C. Jones, Advisor
819 Sprau Tower
(616) 387-2668

Benjamin C. Wilson, Advisor
818 Sprau Tower
(616) 387-2667

Program
The BAS coordinate major requires a minimum of 24 credit hours to be taken in conjunction with a disciplinary major. Course work in the Black Americana Studies major includes an interdisciplinary core consisting of a core of courses in Black Americana Studies including one with a methodological focus (see offerings below marked with an asterisk), a selection of courses from other departments as listed, and a concluding capstone experience. Students must meet with the program advisor to declare a major before registering for the third course in the BAS core.

BAS COORDINATE MAJOR
24 credit hours minimum including Capstone Experience
1. The BAS core courses listed below will provide the necessary background to better comprehend the nature and history of the African experience in the Americas. Students will choose at least three from the courses listed below. Selection must include at least one course marked with an asterisk. Some of these courses can be double counted in General Education and BAS coordinate major up to a maximum of two courses, or Liberal Education Curriculum and BAS coordinate major up to a maximum of three courses.

   - BAS 200 Black Presence
   - BAS 210 Black Nationalism
   - BAS 300 Black Experience
   - BAS 301 Black Experience: From 1865 to the Present
   - BAS 310 Black Woman: Historical Perspective and Contemporary Status
   - BAS 314 Black Community
   - BAS 320 Ecology and the Black Community
   - BAS 330 History and Significance of Black Popular Culture
   - BAS 350 Blacks in Michigan
   - BAS 360 Black Woman / Black Man Relationships
   - BAS 400 Blacks in the Arts

2. Students must choose at least four courses from the two areas below. The choice must include at least one course from the Social Sciences and one from the Humanities.

   a. Social Science courses:
      - ANTH 311 African Archaeology
      - ANTH 312 African Art
      - ANTH 341 Cultures of Africa
      - GEOG 361 Population: The Crowding World
      - GEOG 386 Sub-Saharan Africa: Man, Environments, Resources
      - HIST 210 American History to 1865
      - HIST 211 American History since 1865
      - HIST 250 Michigan History

   b. Humanities courses:
      - COM 305 Special Topics
      - ENGL 223 Black American Literature
      - ENGL 314 African Literature
      - ENGL 484 Multicultural American Literature
      - LANG 375 Foreign Literature
      - MUS 151 Music Appreciation
      - REL 100 Religions of the World
      - REL 307 The Islamic Tradition
      - REL 304 African Religions
      - THEA 105 Introduction to Black Theatre

3. Capstone Experience—This is an opportunity 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 with a seminar 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 advisor.

Black Americana Studies Courses (BAS)
A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

   BAS 200 Black Presence
   3 hrs.
   A survey of the impact of the physical presence of people of African ancestry and descent in the European colonies of the Western Hemisphere from the earliest days of the age of exploration to the present.
Historically oriented, the course is designed to be interpretive rather than chronological, to deal with Black presence as party to the expansion of Western Europe in the New World, as active participation in settling and developing the colonies, as a people apart or of contrast. How did the presence of Africans influence the development of the life and institutions of the country in Colonial, National and later years?

BAS 210 Black Nationalism in America 3 hrs.
An interdisciplinary study of Black Nationalism as an important, persistent and substantive ideology of Black America. This course analyzes and explores ideas and programs of Black leaders.

BAS 300 Black Experience: From the African Beginnings to 1865 3 hrs.
This course will examine the myriad patterns of adaptation and 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-cultural presence. This course aims to examine how the Black presence altered the idea of race and how this alteration became a function of the institutional forms that Black Americans have shaped to survive in a hostile environment.

BAS 301 Black Experience: From 1866 to 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 effects of slavery on both the victims and the victimizers, the search and the rise of Black Messianic leaders, the migration from the rural-agricultural South to the urban-industrialized North, the emergence of Black Nationalism-Civil Rights Movement and the non-Black backlash. BAS 300 is highly recommended.

BAS 310 The Black Woman: Historical Perspective and Contemporary Status 3 hrs. This course is an examination of the historical perspective and contemporary status of the Black woman and her story, paying critical attention to her image as reflected in her role in the American society. The course emphasizes the problems, issues, and concerns of the Black woman. Students will participate in securing visiting Black female speakers and documenting their story as Black women.

BAS 314 The Black Community 3 hrs.
An investigation of the social forms and structures within the Black community from the Black perspective. The course will focus on the sociological, political, economic, psychological, and physical aspects of community building by a subordinated group.

BAS 320 Ecology and the Black Community 3 hrs.
This course is the study of the relationships of local Black residents within their social and physical environments. The course focuses on the individual's status in the community through an evaluation of the social, political, economic and physical aspects of the environment as influenced by the social order of American society and its philosophy. Students are expected to complete a research study of a special ecological issue and to document the contributions of African Americans to Western Michigan University through the Annual W.E.B DuBois Conference.

BAS 330 History and Significance of Black Pop Culture — 1906 to Present 3 hrs. This course will focus on the continuum to Black Pop Culture in the twentieth century, its developmental stages and its emergence as the nucleus of Pop Culture in "mainstream" America. Students will survey Black theatre, art, music, and literature in twentieth-century America and study the institutions, persons, sites, and traditions that it inspired.

BAS 350 Blacks in Michigan 3 hrs.
A survey of the significance of Blacks in the making of Michigan history. We will trace the movement of Blacks into Michigan, investigate patterns of settlement, reactions to the emigrants, and the development of the Black families and church as principal forces in the Black community. We will study the political, social, and economic implications of being Black in Michigan, both in urban and rural areas from 1790 to the present. The student will be introduced to the varieties of historical sources available for such study.

BAS 360 Black Woman-Black Man Relationships 3 hrs.
This course is a study of the dynamics of the Black male/Black female relationships in a variety of contemporary settings. Students are expected to assist in the conduct and documentation of the proceedings of the annual Black Male-Female Panel Discussion of social issues of special interest to the Black community, including family dynamics, male-female relationships and strategies for the improvement of those relationships.

BAS 400 Blacks in the Arts 3 hrs.
An examination of the creative dimension of the Black Experience as found in music, art, literature, religion, and dance. This course will 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.

BAS 510 Multicultural Education 3 hrs.
This course is designed to prepare teachers and administrators who will work in a multicultural setting. The course is primarily aimed at helping teachers at any level who teach a social studies component, but teachers of all other subjects, e.g. physical and biological sciences and social education and school administrators, will find the course useful. Students will learn how to compile data on the ethnic makeup and resources of the local community, and develop instructional packages and evaluation materials for use in multiculturist courses.

Criminal Justice Program
Ronald C. Kramer, Director
2408 Sangren Hall
(616) 387-5284

Michelle Volkmer, Advisor
2407 Sangren Hall
(616) 387-5286

Criminal Justice is an interdisciplinary curriculum designed to provide perspective on the entire criminal justice system. The program is designed to provide a well-rounded, theoretical and practical education necessary for careers in criminal justice and/or graduate work in law, criminology, or other areas.

The Criminal Justice Major requires thirty-three hours of core and specialized classes including: Criminology, Criminal Justice Process, Sociology of Law Enforcement, Juvenile Delinquency, Correctional Process, Advanced Criminal Justice, and Criminal Law. Specialized work in juvenile justice, courts, probation, and corrections is available as well as certification as a Michigan police officer.

Curriculum and program details may be found under Sociology/Criminal Justice.

Environmental Studies
Dave Hargreave, Director
240 Moore Hall
(616) 387-2723
Molly Cole, Program Coordinator
239 Moore Hall
(616) 387-2716

Attached faculty: David Hargreave, Amanda McConney, Michael D. Swords

Faculty with Joint Appointments: Richard D. Brezina (Geology), John Cooley (English), Kenneth A. Dahnberg (Political Science), Elwood B. Ehrle (Biology)

Associate Faculty:
Arthur Heilig (Anthropology), Alain Jacobs (Anthropology), Michael E. McCarnville (Chemistry), Stephen B. Malcolm (Biology), Philip Micklin (Geography), Peter Schmitt (History), Larry Syndergaard (English)

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 promote and protect 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 (involving 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 ENV 420 Internship, or ENV 430 Environmental Projects.

Program details and course descriptions for Environmental Studies may be found under the Department of Science Studies located elsewhere in this Undergraduate Catalog.

International and Area Studies

Howard J. Dooley
Executive Director of International Affairs,
International and Area Studies

AFRICAN STUDIES PROGRAM
Siissay Asefa, Advisor
ASIAN STUDIES PROGRAM
Michitosh Soga, Advisor
EUROPEAN STUDIES PROGRAM
William Ritchie, Advisor
LATIN AMERICAN STUDIES PROGRAM
Claudio Milman, Advisor

The International and Area Studies Programs were established by the Trustees and Administration in an effort to examine, analyze, and hopefully—understand the peoples and institutions of the world in cross-disciplinary perspective. The programs seek to provide students with a broad variety of intellectual and experiential stimuli designed to promote an understanding of areas—their history, languages, literature and fine arts, social institutions, political processes, major

intellectual currents, geography, economic problems, and the relationship of these factors to the role of these nations in the world community. Students enroll in relevant departments and coordinate major courses.

The International and Area Studies Programs are designed to provide undergraduate students who plan to pursue careers in international business, education, government, or the professions in which success would be enhanced by an understanding of peoples whose values, traditions, customs and institutions differ markedly from those with which most of us are familiar. These programs seek to promote the following educational objectives:

1. To assist Western Michigan University students achieve a better understanding of other peoples and institutions.
2. To explore, analyze, and evaluate the impact of specific areas on the course of world events.
3. To stimulate acquisition of foreign language skills by Western Michigan University students.
4. To provide a forum for the exchange of views between students and faculty concerned with contemporary world affairs.
5. To encourage cross-disciplinary research and study by both students and faculty of issues affecting the contemporary world.

A language is required in some majors. However, any student planning the study of an area at the graduate level or the pursuit of a foreign-related career should obtain as much fluency in a language as possible as an undergraduate. To avoid studying a language only makes the successful pursuit of a related career more difficult.

The International and Area Studies Programs develop and promote opportunities for students enrolled in these programs to study and travel in foreign countries—thereby acquiring a firsthand understanding of contemporary conditions while further developing facility in one or more foreign languages. Academic credit earned as a result of study or research undertaken abroad may be accepted toward completion of requirements for the coordinate major or minor.

Students should consult the appropriate area advisor or the African Studies Program Advisor for the development of a program of study and for each registration if necessary.

AFRICAN STUDIES PROGRAM

COORDINATE MAJOR
Siissay Asefa (Ethnolinguistics), Advisor
5023 Friedmann Hall
387-5545

The African Studies Program is an interdisciplinary international 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 the student's ideas concerning U.S.—African relations and the importance of Africa in the world.

This program is ideally organized for the student who wishes to take advantage of the Student-Planned Curriculum available at Western. A student who enrolls for the coordinate major in African studies must also have a disciplinary major in any college of the University. The program requires 24 semester hours of courses for the major and 15 semester hours for the minor.

Courses for the coordinate major or minor must be taken from the following list of courses and departments. Students must have their program of study approved by the African Studies Program Advisor.

A-S 330-331 Study Abroad 1-16
A-S 404-405 Foreign Studies Seminars 1-6
ANTH 341 Cultures of Africa 3
ANTH 542 Development Anthropology 3
BAS 200 Black Presence 3
ECN 106 Contemporary Introductions 3
ECN 484 Comparative Economic Systems 3
ECN 588 Economic Development 3
ENG 314 African Literature 4
GENL 305 Non-Western Societies in the Modern World 4
GEOG 386 Sub-Saharan Africa 3
GEOG 309 Studies in Regional Geography—Africa 3
HIST 388 Introduction to African Civilization 3
HIST 485 Early Islam 3
HIST 488 History of West Africa 3
HIST 489 Topics in African and Asian History** 1-3
HIST 585 Topics in African and Asian History** 3
PSCI 250 International Relations 3
PSCI 341 African Political Systems 3
REL 304 African Religions 4
SOC 430 Sociology of Development 3

* Core Courses
** Only related to African Studies

Baccalaureate Writing Requirement

Students who have chosen the African Studies coordinate major will satisfy the Baccalaureate Writing Requirement by successfully completing the designated course in their standard major.

STUDY ABROAD

Core requirements for the African Studies major or minor may be satisfied in part by appropriate course work undertaken in approved study abroad programs. Consult the Foreign Study Coordinator for study abroad opportunities in Africa, and the African Studies Program Advisor for applicability.

ASIAN STUDIES PROGRAM

Michitosh Soga (International Affairs), Advisor
2092 Friedmann Hall
387-3969

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 complex processes and how going on in this region stretching from Mongolia to Australia and Micronesia to the Middle East.
COORDINATE MAJOR
Undergraduates may choose an interdisciplinary coordinate major in Asian Studies. This is a double major program. In addition to fulfilling the requirements of a disciplinary major in any college of the University, the student is required to take 24 credit hours of approved Asian Studies courses. An Asian language e.g. 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 Seminars .................. 1-6
ANTH 240 Principles of Cultural Anthropology* ........ 3
ANTH 340 Cultures of Asia* ...................................... 3
ANTH 332 Topics in World Cultural Areas .................. 3
ANTH 370 Cultural Communication ............................ 3
ANTH 545 Topics in Ethnicity* ................................. 3
BUS 594 International Business Seminar* ............... 1-6
COM 474 Intercultural Seminars ................................. 3
ECON 380 International Economics* .......................... 3
ECON 387 Studies in Asian Economics ..................... 3
ECON 588 Economic Development* .......................... 3
ENGL 313 Asian Literature ........................................ 3
GEOG 385 The Pacific Realm ................................... 3
GEOG 389 Monsoon Asia ........................................ 3
GENL 305 Non-Western Societies in Modern World* .... 4
HIST 349 Ancient Near East .................................... 3
HIST 376 Modern East Asia ...................................... 3
HIST 385 Modern Middle East .................................. 3
HIST 476 Traditional China ...................................... 3
HIST 477 Modern China .......................................... 3
HIST 479 Modern Japan ........................................... 3
HIST 485 Early Islam .............................................. 3
HIST 489 Topics in Asian and African History* ........... 3
HIST 585 Studies in Asian and African History* .......... 3
JPNS 100 Basic Japanese I** ..................................... 4
JPNS 101 Basic Japanese II** .................................... 4
JPNS 200 Intermediate Japanese I** ......................... 4
JPNS 201 Intermediate Japanese II** ....................... 4
JPNS 316 Japanese Composition* ............................. 3
JPNS 317 Japanese Conversation* ............................ 4
JPNS 477 Foreign Study** ....................................... 1-16
LANG 100 Basic Critical Languages* ......................... 4
LANG 101 Basic Critical Languages* .......................... 4
LANG 200 Intermediate Critical Languages I* ............. 4
LANG 201 Intermediate Critical Languages II* ............ 4
LANG 300 Advanced Critical Languages* .................... 4
MUS 352 Non-Western Music .................................... 4
PSCI 250 International Relations ............................... 4
PSCI 342 Asian Political Systems .............................. 4
PSCI 450 Seminar on International and Comparative Politics* .......................... 3
PSCI 536 Comparative Public Administration ............... 3
PSCI 549 Problems of Foreign Political Systems* ......... 3-4
REL 302 Religion in the Indian Tradition ................... 4
REL 303 Chinese Religion ........................................ 4
REL 307 The Islamic Tradition ................................ 4
REL 308 Japanese Religion ...................................... 4
REL 500 Historical Studies in Religion ....................... 2-4
SOCI 304 Introduction to Non-Western World* ............ 4
SOCI 334 Pacific Rim—Asian Societies ....................... 3
SOCI 336 Modern Japanese Society* ......................... 3

* Only topics related to Asian Studies
** If you choose a Japanese Minor, you cannot use the same credits for an Asian Studies Major or Minor

Study Abroad
Core requirements for the Asian Studies major or minor may be satisfied by appropriate course work at Asian universities or in approved study abroad programs. For example, the Japan Center for Michigan Universities offers a minimum of 13 credit hours for two semesters of studies in Japanese language, Japanese history, and other subjects. Transfer credits earned at WMU's "sister school" Keio University in Japan and Sunway College in Malaysia can be applied to the Asian Studies major or minor. Consult the Foreign Study Coordinator in the Office of International Affairs for study abroad opportunities in Asia, and the Asian Studies major/minor advisor for applicability.

EUROPEAN STUDIES PROGRAM
COORDINATE MAJOR
William Ritchie (Political Science), Advisor 3025 Friedmann Hall 387-5698

The courses for this program concentrate on the European area. They are drawn from thirteen departments of the University which offer subject matter focused on the European area. The program is designed to appeal to those students who have an interest in Europe and wish to transcend the disciplinary boundaries of any one field of study. The European Studies coordinate major will satisfy the Baccalaureate Writing 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 language, the required hours will be drawn from an appropriate list of core courses by the European Studies advisor.

STUDY ABROAD
The European Studies major or minor in any of the options may be satisfied in part by appropriate course work at European universities or in approved study abroad programs. For example, participants in the "European Culture and Society Program" at the University of Leuven, Belgium may be awarded a "Diploma of European Studies" by Leuven as well as earn credits towards their WMU program. Consult the Foreign Study Coordinator in the Office of International Affairs for study abroad opportunities in Europe, and the European Studies advisor for applicability.

British Studies Option
Dr. Dale Pattison (History), Advisor British Studies Program 4006 Friedmann Hall 387-4639

Dr. William Ritchie (Political Science), Advisor European Studies Program 3025 Friedmann Hall 387-5698

The Coordinate Major in British Studies is designed to complement, not substitute for, conventional major programs in the various colleges of the University. Undergraduate students having a strong interest in Britain may pursue an interdisciplinary curriculum tailored by the student and the advisor to further the student's interests and career needs. Twenty-four credit hours must be selected from several of the departments participating in the program. More than forty separate courses constitute the total British Studies option of the European Studies Coordinate Major-Minor Program.
The Coordinate Minor program in British Studies may be chosen by the student in consultation with the advisor. A minimum of 15 credit hours of approved British Studies courses must be accumulated successfully. Courses in British Studies currently approved are included in the list below. Students should consult with the advisor as to additions or changes.

A-S 330-331 Study Abroad 1-16
A-S 404-405 Foreign Studies Seminars in Literature, Music, Art, Literature, and Mass Communication 1-6
ECON 484 Comparative Economic Systems 3
ENGL 252 Shakespeare 4
ENGL 442 Modern Drama 4
ENGL 444 The British Novel 4
ENGL 532 English Renaissance Literature 3
ENGL 534 Restoration and 18th Century Literature 3
ENGL 536 19th Century British Literature 3
ENGL 538 Modern Literature 3
GEOG 383 Western and Southern European Systems 3
HIST 362 History of England 3
HIST 364 Britain and the British Empire 3
HIST 460 Europe: 1945-Present 3
HIST 462 Great Ages in English History 3
HIST 561 Victorian England 3
PSCI 340 West European Political Systems 4

In addition to the above courses many departments offer seminars, independent study, and variable topic courses which may be included in this program when they concentrate on the British Isles.

Germanic Studies Option

Dr. Johannes Kissel (Foreign Languages and Literatures), Advisor

Germanic Studies Program

419 Sprau Tower
387-3010

Dr. William Ritchie (Political Science), Advisor

European Studies Program

3025 Friedmann Hall
387-5698

Students in Germanic Studies usually combine a major in a regular 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. Students are encouraged to take courses in Germanic Studies in conjunction with a minor, minor subjects, accounting, English literature. 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 community can be useful in future employment and travel. The Coordinate Major consisting of 24 credit hours must include three core courses as well as 8 credit hours (or equivalent knowledge) of a Romance language above the 100-101 basic level. To complete the major or minor the student chooses from the list of optional courses.

CORE COURSES

GEOG 383 Western and Southern European Systems 3
HIST 460 Europe Since 1945 3
PSCI 340 West European Political Systems 4

OPTIONAL COURSES

A-S 330-331 Study Abroad 1-16
A-S 404-405 Foreign Studies Seminars 1-6
ANTH 346 Cultures of Europe 3
ART 220-221 History of Art 6
ART 585 History of Renaissance Art 3
ART 586 History of 19th Century Art 3
ART 589 History of 20th Century Art, 1900-45 3
ART 590 History of 20th Century Art, 1945-Present 3
ECON 484 Comparative Economic Systems 3
ENGL 342 Modern Drama 4
FREN 200-201 Intermediate French 4
FREN 322 French Civilization 3
FREN 328 Introduction to French Prose, Poetry and Drama 6
FREN 344 Summer Study in France 4
FREN 477 Foreign Study 1-16
HIST 452 The French Revolution and Napoleon 3
HIST 456 Europe: 1815-1871 3
HIST 457 Europe: 1871-1919 3
HIST 458 Europe: 1919-1945 3
HIST 468 Topics in European History 1-3
HIST 565 Studies in Modern European History 3
LANG 375 Foreign Literature in English Translation (French, German, and Spanish) 3
MKTG 575 International Marketing 3
MUS 270-271 Music History and Literature 8
MUS 572 Baroque Music 3
MUS 573 Classical Music 3
MUS 574 Romantic Music 3
PHIL 301 History of Modern Philosophy 4
PHIL 303 Existentialist Philosophies 4
PSCI 555 International Law 3
REL 305 The Christian Tradition 4

In addition to the above courses many departments offer seminars, independent study, and variable topic courses which may be included in this program when they concentrate on Germanic areas.

Romance Studies Option

Dr. Joseph G. Reisch (Lee Honors College), Advisor

Romance Studies Program

Lee Honors College
387-3230

Dr. William A. Ritchie (Political Science), Advisor

European Studies Program

3025 Friedmann Hall
387-5698

Romance Studies is a coordinate major or minor program emphasizing an interdisciplinary approach to the study of France, Italy, Spain and its aims is to present an integrated course of instruction in the arts, sciences, and philosophies of these modern-day nations linguistically and culturally linked to ancient Rome. The program offers a variety of options to the student interested in broadening his/her knowledge of the cultural life of Western Europe. Core courses include music, political science, history, and Romance languages (French, Italian, and Spanish). A student selects a program of study in consultation with the Romance Studies advisor.

The Coordinate Major in Romance Studies (24 credit hours) must include the following:

- Core Courses
- A Selection of Romance Studies Courses
- Optional Courses

In addition, departments frequently offer seminars, independent studies, and variable topic courses which may be included in this program when they concentrate on Romance Studies.
topic courses with direct emphasis on the political, economic, and cultural life of France, Italy, and/or Spain. Students are strongly encouraged to participate in study abroad programs, many of which are sponsored by the Office of International Affairs.

Slavic Studies Option
Dasha Nisula (Foreign Languages and Literatures), Advisor
413 Sprau Tower
387-3005

John Norman (History), Advisor
4029 Friedmann Hall
387-4656

Slavic Studies as an option of European Studies, is an interdisciplinary program which focuses on the Russia and Eastern Europe. This region which is undergoing rapid social, cultural, and political change is increasingly a center of world attention. The program is designed for students who are considering careers in international law or business, government, or journalism. It would also be of interest to those who are considering graduate studies, or those who wish in-depth interdisciplinary study of the Russian and East European geographical area.

A student who enrolls in this Coordinate Major in Slavic Studies must take at least 24 credit hours of coursework distributed as follows:

**REQUIRED COURSES**—All students must take the following:
- RUSS 200 Intermediate Russian I ........... 4
- RUSS 201 Intermediate Russian II .......... 4
- RUSS 310 Russian Civilization ............... 3

**ELECTIVE COURSES**—The remaining 13 hours are to be taken from among the following courses and/or others as approved by a Slavic Studies advisor.
- ECON 484 Comparative Economic Systems .......... 3
- ENGL 510 Special Topics in Literature: Russian Literature ................... 4
- GEOG 384 Post-Soviet States ................. 3
- HIST 366 Soviet Union ......................... 3
- HIST 466 Russia to 1855 ....................... 3
- HIST 466 Russia Since 1855 ................. 3
- LANG 375 Foreign Literature in English Translation .................. 3
- PSCI 344 Russian and East European Politics .......... 4
- PSCI 544 Political Change in Russia .......... 3
- RUSS 344 Summer Study in the Soviet Union .................. 4
- RUSS 477 Foreign Study ......................... 1-16

The Coordinate Minor in Slavic Studies requires 15 credit hours as follows:

**REQUIRED COURSES**
- RUSS 100 Basic Russian I ..................... 4
- RUSS 101 Basic Russian II ..................... 4

The balance of the courses must be taken from the electives listed under the major.

**LATIN AMERICAN STUDIES PROGRAM**

**COORDINATE MAJOR**
Claudio Milman (Management), Advisor
3243 Schneider Hall
387-5839

Students enrolled in this coordinate major must select at least 24 hours from core and cognate courses available from the program advisor. Students must demonstrate intermediate-level proficiency in Spanish or Portuguese, and HIST 370, PSCI 343, and either GEOG 381 or GEOG 382 are recommended.

Students wishing to enroll in the Latin American studies coordinate major should make this intention known to the Latin American studies advisor by no later than the first semester of their junior year—and preferably earlier.

**HONORS CERTIFICATE PROGRAM**
A Certificate in Latin American Studies will be awarded from Western Michigan University on graduation to those who have completed the 24 hour coordinate major requirements as well as an oral and written examination by three members chosen from the Latin American Studies Committee. A grade point average of 3.50 and intermediate level proficiency in Spanish is a prerequisite in this program. The certificate is designed for students whose interest in Latin America goes beyond the usual academic programs. The program is flexible involving independent studies and is, above all, tailored to each individual’s interest.

**BACCALAUREATE WRITING REQUIREMENT**
Students who have chosen the Latin American Studies coordinate major will satisfy the Baccalaureate Writing Requirement by successfully completing the designated course in their standard major.

**MINOR**
Fifteen semester hours taken from the list of Latin American studies courses are required for completion of a minor concentration in Latin American studies. HIST 370, PSCI 343, and either GEOG 381 or 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 a concentration that is linked to Spanish Language courses and complemented by majors or minors in other fields. Especially appropriate choices would be Spanish, international business, tourism, or economics. In addition, secondary education certification would be especially relevant. Individual directed readings courses are also available on Latin American topics from a wide range of faculty.

A special feature of this program is the opportunity to spend a semester or year abroad in approved programs in Latin America or Spain. 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 320-321 Study Abroad ..................... 1-16
A-S 404-405 Foreign Studies ................. 1-6
ANTH 345 Topics in Anthropology (if appropriate) .......... 3
GEOG 381 South America ....................... 3
GEOG 382 Mexico and the Caribbean (and Central America) ........ 3
HIST 370 History of Latin America .......... 3
HIST 471 History of Latin America Nations .......... 3

**STUDY ABROAD**
Core requirements for the Latin American Studies major or minor may be satisfied in part by approved course work at Latin American universities or in approved study abroad programs. Participants must consult the Foreign Study Coordinator or the Office of International Affairs for study abroad programs in Latin America, and the Latin American Studies major/minor advisor for applicability.

**The Medieval Institute**
Paul E. Szarmach, Director and Advisor
Knowledge of medieval and Renaissance culture is being increasingly recognized as essential to an understanding of modern culture. The Medieval Institute was established by the University to develop and coordinate interdisciplinary programs in Medieval and Renaissance Studies. In addition to an undergraduate minor, the Institute offers a graduate program leading to an M.A. in Medieval Studies.

Western Michigan University has library resources and faculty to provide a good academic environment for the study of the Middle Ages and Renaissance. The Institute organizes and hosts the annual International Congress on Medieval Studies which has brought the University wide recognition throughout the United States, Canada, and Europe. The Institute's publishing program, Medieval Institute Publications, publishes significant current research in all areas of medieval studies.

The headquarters of the Medieval Institute is in Walwood Hall.

**MINOR PROGRAM**
Students with an undergraduate minor must elect twenty hours, to include the following:
1. One history course chosen from the approved list.
2. One literature course chosen from the approved list.
3. One course in intellectual history, philosophy, or religion chosen from the approved list.

Electives from the approved list with the approval of the advisor.

**INTERDISCIPLINARY PROGRAMS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSCI 343</td>
<td>Latin American Political Systems</td>
<td>4</td>
</tr>
<tr>
<td>REL 313</td>
<td>Religion in America</td>
<td>4</td>
</tr>
<tr>
<td>REL 520</td>
<td>Methodological Studies in Religion</td>
<td>2-4</td>
</tr>
<tr>
<td>SOC 335</td>
<td>Modern Latin American Societies</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 323</td>
<td>Life and Culture of Latin America</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 477</td>
<td>Foreign Study</td>
<td>1-16</td>
</tr>
<tr>
<td>SPAN 526</td>
<td>Survey of Spanish American Literature</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 598</td>
<td>Special Studies (various departments)</td>
<td>3</td>
</tr>
</tbody>
</table>

* Must consult Latin American Studies advisor.

**APPROVED COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 220</td>
<td>History of Art to the Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>ART 502</td>
<td>Independent Study in Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 583</td>
<td>History of Medieval Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 585</td>
<td>History of Renaissance Art</td>
<td>3</td>
</tr>
<tr>
<td>Course Number</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>A 404</td>
<td>Foreign Studies Seminar: Social Sciences</td>
<td>1-6</td>
</tr>
<tr>
<td>A 405</td>
<td>Foreign Studies Seminar: Humanities</td>
<td>1-6</td>
</tr>
<tr>
<td>REL 305</td>
<td>The Christian Tradition</td>
<td>4</td>
</tr>
<tr>
<td>REL 306</td>
<td>The Jewish Tradition</td>
<td>4</td>
</tr>
<tr>
<td>REL 307</td>
<td>The Islamic Tradition</td>
<td>4</td>
</tr>
<tr>
<td>REL 500</td>
<td>Historical Studies in Religion (Christian Theology to 1500)</td>
<td>4</td>
</tr>
<tr>
<td>REL 410</td>
<td>Morphological and Phenomenological Studies in Religion (Great Islamic Thinkers)</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 252</td>
<td>Shakespeare</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 372</td>
<td>Development of Modern English</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 452</td>
<td>Shakespeare Seminar</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 510</td>
<td>Special Topics Norse Literature and Mythology</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 530</td>
<td>Medieval Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 532</td>
<td>English Renaissance Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 555</td>
<td>Studies in Major Writers (Dante, Chaucer)</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 598</td>
<td>Readings in English</td>
<td>1-4</td>
</tr>
<tr>
<td>FREN 550</td>
<td>Independent Study in French</td>
<td>1-3</td>
</tr>
<tr>
<td>GER 528</td>
<td>Survey of German Literature</td>
<td>3</td>
</tr>
<tr>
<td>GER 550</td>
<td>Independent Study in German</td>
<td>1-3</td>
</tr>
<tr>
<td>GER 559</td>
<td>History of the German Language</td>
<td>3</td>
</tr>
<tr>
<td>LAT 550</td>
<td>Independent Study in Latin</td>
<td>1-3</td>
</tr>
<tr>
<td>LAT 560</td>
<td>Medieval Latin</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 322</td>
<td>Life and Culture of Spain</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 550</td>
<td>Independent Study in Spanish</td>
<td>1-3</td>
</tr>
<tr>
<td>SPAN 560</td>
<td>Studies in Spanish Literature</td>
<td>3</td>
</tr>
<tr>
<td>HIST 350</td>
<td>Ancient Greece and the Hellenistic World</td>
<td>3</td>
</tr>
<tr>
<td>HIST 351</td>
<td>Ancient Rome</td>
<td>3</td>
</tr>
<tr>
<td>HIST 360</td>
<td>Medieval World</td>
<td>3</td>
</tr>
<tr>
<td>HIST 440</td>
<td>Imperial Rome</td>
<td>3</td>
</tr>
<tr>
<td>HIST 441</td>
<td>Early Christianity</td>
<td>3</td>
</tr>
<tr>
<td>HIST 442</td>
<td>Byzantine Civilization</td>
<td>3</td>
</tr>
<tr>
<td>HIST 444</td>
<td>Early Medieval History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 445</td>
<td>Later Medieval History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 446</td>
<td>Renaissance Europe</td>
<td>3</td>
</tr>
<tr>
<td>HIST 447</td>
<td>The Reformation</td>
<td>3</td>
</tr>
<tr>
<td>HIST 498</td>
<td>Directed Research</td>
<td>3</td>
</tr>
<tr>
<td>HIST 550</td>
<td>Studies in Medieval History</td>
<td>3</td>
</tr>
<tr>
<td>MDVL 145</td>
<td>Heroes and Villains of the Middle Ages</td>
<td>3</td>
</tr>
<tr>
<td>MDVL 500</td>
<td>Interdisciplinary Studies in Medieval Culture</td>
<td>3</td>
</tr>
<tr>
<td>MUS 270</td>
<td>Music History and Literature</td>
<td>3</td>
</tr>
<tr>
<td>MUS 496</td>
<td>Readings in Music</td>
<td>1-4</td>
</tr>
<tr>
<td>MUS 517</td>
<td>Collegium Music</td>
<td>1-3</td>
</tr>
<tr>
<td>MUS 585</td>
<td>Medieval Music</td>
<td>2-4</td>
</tr>
<tr>
<td>PHIL 300</td>
<td>Ancient and Medieval Philosophy</td>
<td>4</td>
</tr>
<tr>
<td>PHIL 498</td>
<td>Independent Study in Philosophy</td>
<td>2-4</td>
</tr>
<tr>
<td>PHIL 598</td>
<td>Readings in Philosophy</td>
<td>2-4</td>
</tr>
<tr>
<td>PSCI 360</td>
<td>Introduction to the History of Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>THEA 370</td>
<td>Theatre History</td>
<td>3</td>
</tr>
</tbody>
</table>

### Medieval Courses (MDVL)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

**MDVL Courses**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDVL 145</td>
<td>Heroes and Villains of the Middle Ages</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>MDVL 500</td>
<td>Interdisciplinary Studies in Medieval Culture</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>MDVL 597</td>
<td>Directed Study</td>
<td>1-3 hrs.</td>
</tr>
</tbody>
</table>

### Science and Mathematics Teaching Minor

**Advisor:** College of Education

**Office of Admissions and Advising:**

2504 Sangren Hall

This minor is open only to students enrolled in the elementary education curriculum. Transfer students will need to have their previous coursework in sciences and mathematics evaluated by a College of Education advisor prior to enrolling in this minor. This minor results in an endorsement in science. To obtain information about an additional mathematics endorsement, contact the Department of Mathematics and Statistics.

Because of the interdisciplinary nature of this minor, one course must be selected from each of the three science areas.

A. **REQUIRED SCIENCE** (Select one course from each area. Courses approved for general education are marked with an *)

<table>
<thead>
<tr>
<th>Biological</th>
<th>Earth Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCI 234</td>
<td>*GEOG 130</td>
</tr>
<tr>
<td>SCI 170</td>
<td>*GEOG 105</td>
</tr>
</tbody>
</table>

**Group Social Science Teaching Minors**

For advising in the elementary education teaching minor contact the College of Education Advising Office.

Requirements for these minors will change in Fall 1996 in order to meet new Michigan Department of Education requirements for social sciences endorsement for teacher certification. After December 31, 1997, no student will be recommended for state of Michigan social sciences endorsement under the current social studies minor program. Accordingly students should consult with an advisor as noted below about following the soon-to-be revised minors.

### GROUP SOCIAL SCIENCE MINOR

**(elementary education and middle school/junior high school curricula)**

At least 24 hours of credit from courses listed below, with no grade lower than "C," including at least 12 hours at the 300-level or above. At least one course must be chosen from each of the following groups:

1. **ECON 201, 202**
2. **PSCI 200, 202, 300, 310**
3. **ANTH 110, 501, HIST 100, 101, 102**
4. **HIST 210, 211, 250, 315, 412, 416**
5. **BASE 200, 300, 301, SOC 200, 320, 390**
6. **ECON 380, 588, HIST 313, 370, 385, PSCI 250, 343, 351**
7. **GEOG 102, 105, 205, 311**

### GROUP SOCIAL SCIENCE MINOR

**(secondary education curriculum)**

For advising in the secondary education group social science minor contact the academic advisor in your MAJOR department.

This minor is open only to, and is required of, students in the secondary education curriculum majoring in anthropology, economics, geography, history, political science, and sociology. It must contain at least 24 hours of credit in these departments, with no grade lower than "C" counted toward the minor.

The following basic courses must be completed. Where applicable they must...
Women's Studies Courses (WMS)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

WMS 100 Media and the Sexes 3 hrs.
The course investigates how films, television, music videos and advertising present images of women and men to different audiences.

WMS 200 Introduction to Women's Studies 4 hrs.
This interdisciplinary core course in Women's Studies provides analytical frameworks for the study of gender and gender-defining institutions, focusing on women in American society. Course emphasizes approaches that recognize the diversity and similarity of women's experience across class, racial and ethnic groups.

WMS 300 Working Women, Past and Present 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 prerequisite for admission to 500 level Women's Studies classes is twelve hours.
of course work from the Women's Studies approved list (including WMS 200), and at least junior level status or departmental approval.

WMS 500 Seminar in Women's Studies
3 hrs.
A seminar offering variable topics that focus on special problems or issues in Women's Studies. Emphasis will be placed on developing skills in research approaches and on writing a research paper integrating the student's disciplinary training with investigation of an interdisciplinary problem in Women's Studies. May be repeated for credit when topics vary.

WMS 510 Internship Seminar
3 hrs.
Course offers an opportunity for the advanced student to apply theory and knowledge in Women's Studies to a professional or community project. Student will work under the supervision of a faculty advisor or a community sponsor. Opportunities available in areas such as television production and K-12 classroom presentations.

WMS 550 Contemporary Feminist Theory
3 hrs.
An advanced course focusing on the analysis of American and European texts in feminist theory. The course will also consider the relation of these texts to other contemporary theoretical approaches. Prerequisite: WMS 400.

WMS 598 Readings in Women's Studies
1-4 hrs.
Individual study project available to the advanced student by permission of faculty advisor with departmental approval of project application.

World Literature Minor
Robert Felkel, Department of Foreign Languages and Literatures, Advisor
Edward Jayne, Department of English, Advisor

This is an interdepartmental program administered jointly by the Department of English and the Department of Foreign Languages and Literatures.

Studying the literature of other peoples of the world is one of the best ways to begin to know them. A great body of the world's literature is available for study in English translation in a variety of courses and departments at Western Michigan University. The world literature minor grows out of and is based on these courses.

This minor should be of value to students who have a general interest in literature and are curious about the world, especially that major part which does not have English as its literary language. Any student, including those majoring or minoring in English or Foreign Languages and Literatures, may elect the world literature minor. The minor should be of obvious value to students with questions about the advisability of taking courses for which there are prerequisites should consult one of the minor advisors.

Transfer students should consult the minor advisor to determine the applicability of courses taken at other colleges.

Minor slips are required. Both the English and the Foreign Languages and Literatures Departments have world literature minor advisors with regular office hours, either one of whom may issue minor slips. For information, stop at or call the English Department office (620 Sprau: 387-2570) or the Department of Foreign Languages and Literatures (410 Sprau: 387-3001).

REQUIREMENTS
1. Twenty hours, with the following distribution:
   - ENGL 312 Western World Literature or 313 Asian Literature or 314 African Literature 3
   - 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) 3
     - 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

2. Substitute an advanced literature course in a foreign language for one of the courses listed above in either Requirement 2 or Requirement 3.

3. Substitute a course or courses (maximum of 4 hours), not presently listed in the catalog, which may be offered as a special or temporary course and which is deemed by the advisors appropriate to the World Literature Minor.

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

2. Substitute an advanced literature course in a foreign language for one of the courses listed above in either Requirement 2 or Requirement 3.

3. Substitute a course or courses (maximum of 4 hours), not presently listed in the catalog, which may be offered as a special or temporary course and which is deemed by the advisors appropriate to the World Literature Minor.

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

Robert Sundick, Chair
James Clifton
Linwood Cousins
William Cremin
William Garland
Arthur Helweg
Lawrence Israel
Alan Jacobs
Erika Loeffler
Ann Miles
Michael Nannasney
Tal Simmons
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 graduate 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 100
3. ANTH 240 or 210
4. six (6) hours of course work at the 400-level or above
5. no more than six (6) hours of course work at the 100 level
6. a grade of “C” or better in every anthropology class counted toward the minor

No more than twelve (12) hours of anthropology classes may be transferred for the major; no more than nine (9) hours of anthropology classes may be transferred for the minor.

BACCALAUREATE WRITING

REQUIREMENT

Students who have chosen the anthropology major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

ANTH 400 Midwest Prehistory
ANTH 440 Ethnography
ANTH 450 Primate Behavior and Ecology
ANTH 501 Rise of Civilization
ANTH 520 Social Science Theory
ANTH 552 Forensic Anthropology

Anthropology Courses (ANTH)

A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

ANTH 100 Human Origins

3 hrs.

The nature, causes and prospects of being human as seen through an examination of the events and processes of biocultural evolution.

ANTH 110 Lost Worlds and Archaeology

3 hrs.

An introduction to the archaeological record relating to the development of culture from its stone age origins through the development of village agriculture and the beginnings of urban life.

ANTH 120 Peoples of the World

3 hrs.

A survey of the rich variety and range of non-Western peoples throughout the world, with emphasis on the role of culture in shaping human thought and behavior.

ANTH 140 Anthropology in Action

3 hrs.

This course applies anthropological knowledge to the study of sociocultural problems of contemporary life and provides an analytic process relevant to the needs of modern multicultural societies. It includes basic concepts, theoretical approaches, and methodologies useful to the discussion of potential solutions to world problems.

ANTH 210 Introduction to Archaeology

3 hrs.

Fall, Winter

The science of archaeology is explored in terms of the methods and concepts used to discover and interpret past human behavior. Select portions of the Old and New World prehistoric cultural sequences provide the frame of reference.

ANTH 240 Principles of Cultural Anthropology

3 hrs.

Fall, Winter

An introduction to the basic concepts, theoretical approaches, and methodological strategies employed in the study of traditional and contemporary sociocultural systems throughout the world. Attention given to research techniques and the insights derived from detailed case studies and cross-cultural comparisons.

ANTH 250 Introduction to Biological Anthropology

4 hrs.

Fall, Winter

A survey of physical anthropology; evolutionary theory; hominid and primate evolution; the living primates; human osteology, human genetics and population variation.

ANTH 300 The Prehistory of North America

3 hrs.

A survey of the major prehistoric cultures of North America north of Mexico, including American Indian origins, early big-game hunters of the Great Plains, ecological adaptations of the Archaic stage, the complex 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 311 African Archaeology

3 hrs.

This course will investigate power relations and resistance through the integration of documentary, archaeological, and oral historical data. Particular attention will be given to the role of the global political economy as a context for investigating transformations in Africa. The course will also concentrate on the production of archaeological knowledge and the social forces that shape and influence archaeological interpretations in Africa. Prerequisite: ANTH 210 or consent of instructor.

ANTH 312 African American Archaeology

3 hrs.

Employing written documents, oral texts, material culture, cultural landscape, and bio-historical studies, this course investigates the dynamic role of material culture of African Americans in the colonial encounter and the development of capitalism. The primary focus is on the archaeology of African Americans to reveal the multifaceted nature of the African diasporic experiences in the Americas, although the Caribbean and West Africa are also sampled. Prerequisite: ANTH 210 or consent of instructor.

ANTH 332 Topics in World Culture Areas

3 hrs.

Studies of the major non-Western traditions of the world, such as those of North Africa and the Middle East, Sub-Saharan Africa, and Asia. Each offering covers major cultural configurations, e.g., rural-urban, peasant-nomad, great civilizations-tribal organizations. Emphasis will be on the unity and diversity, tradition, and changes of peoples and cultures in the developing world.
Topics will be announced each semester. May be repeated for credit with different topics.

**ANTH 339 Cultures of Latin America**
3 hrs.
A problem oriented approach to the study of peoples and cultures in Latin America, dealing with rural, urban, peasant, and elite groups. Topics such as social structure, religion, and culture change may be included.

**ANTH 340 Cultures of Asia**
3 hrs.
A problem oriented approach to the study of peoples and cultures of Asia, dealing with rural, urban, peasant, and elite groups. Topics such as social structure, religion, and culture change may be included.

**ANTH 341 Cultures of Africa**
3 hrs.
A problem oriented approach to the study of peoples and cultures of Africa, dealing with rural, urban, peasant, and elite groups. Topics such as social structure, religion, and culture change may be included.

**ANTH 342 Cultures of Middle East**
3 hrs.
A problem oriented approach to the study of peoples and cultures of the Middle East, dealing with rural, urban, peasant, and elite groups. Topics such as social structure, religion, and culture change may be included.

**ANTH 343 Cultures of Eastern Europe**
3 hrs.
A problem oriented approach to the study of peoples and culture of Europe, dealing with rural, urban, peasant, and elite groups. Topics such as social structure, religion, and culture change may be included.

**ANTH 344 Indians and Eskimos**
3 hrs.
A survey of Native American cultures, from the initial peopling of the New World by immigrants from Asia into the period of exploration and colonization of North America by Europeans. Various societies from selected areas will be examined to illustrate both the ingenuity and diversity of human responses to changing environmental conditions over time and in space.

**ANTH 345 Topics in Anthropology**
3 hrs.
An intensive study of selected topics or emerging fields in anthropology. Topics will vary and be announced each semester. May be repeated for credit with different topics.

**ANTH 347 Ethnography/Multiculturalism**
3 hrs.
Studies the problems and prospects of multiculturalism, including medical, legal, social, and political institutions. Within this framework various theories on ethnic dynamics will be examined, as well as ethnographic descriptions of several ethnic groups.

**ANTH 348 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 350 Human Evolution**
3 hrs.
This course is designed to provide students with an intensive examination of the human fossil record from the initial divergence of the hominid lineage to the origin of modern Homo sapiens. Emphasized in this course will be paleoanthropological, issues relating to species definition and recognition, functional anatomical complexes, adaptive processes, and human morphological variation.

**ANTH 351 Human Osteology**
4 hrs.
A study of the human skeleton. Emphasis will be on morphological and methodical variation, osteodontology, palaeoanthropology, and reconstruction of the individual and the population. Prerequisite: ANTH 250 or consent of instructor.

**ANTH 360 Sex, Gender, Culture**
3 hrs.
Sexual differences around the world are culturally elaborated into gender-specific behaviors, normed relations between gender-role appropriate and objects, and various ideologies supporting the differences. In this course, biological and cross-cultural data will be used to explore the foundation of this process and the social, cultural, and psychological consequences of gender coding on men and women in different culture settings.

**ANTH 370 Culture and Communication**
3 hrs.
A consideration of the nature and role of various symbolic systems of communication, especially non-verbal, such as food, dress, art forms, dance, music, play and folklore. Intended as a general introduction to such fields as semiotics, proxemics, aesthetics, folklore analysis, structuralism, ethnosemantics, and modern linguistic theories of communication as they relate to cultural systems of cognition and social organization.

**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. Course meets baccalaureate-level writing requirement. Prerequisite: ANTH 210 or consent of instructor.

**ANTH 440 Ethnography**
3 hrs.
Examine various methods, problems, and issues in ethnographic research and writing, as well as the interaction between ethnographic practice and the development of anthropological theory. Course meets the baccalaureate-level writing requirement. 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. Course meets the baccalaureate-level writing requirement. Prerequisite: ANTH 250 or consent of instructor.

**ANTH 498 Independent Readings 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 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. Course meets the baccalaureate-level writing requirement. Prerequisites: Junior standing, 12 hours of anthropology and ANTH 210 or consent of instructor.

**ANTH 502 The Origins of Agriculture**
3 hrs.
An intensive study of the human transition from hunting-gathering to cultivation during the post-Pleistocene period. Topics to be treated include: both archaeological and botanical models to explain these processes; the comparison of agricultural systems in various parts of the world; the geographic distribution and biosystematics of selected cultivars; and the cultural systems which have arisen from the economic foundations of plant domestication. Prerequisite: Junior standing, 12 hours of anthropology, and ANTH 110 or 210.

**ANTH 505 Social Anthropology**
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 communal and complex social forms. Prerequisites: Junior standing, 12 hours of anthropology, and ANTH 210 or consent of instructor.

**ANTH 510 Field Methods in Archaeology I**
1-3 hrs.
Instruction in archaeology of a particular area (e.g., the Great Lakes, Midwest Riverine area) with emphasis on cultural processes and ecological relationships as these emerge during the course of field work on the specific problems chosen for investigation in a given field season. To be taken concurrently with ANTH 511. (May be repeated with permission of instructor, but does not count toward anthropology major or minor twice.) Prerequisites: Junior standing, 12 hours of anthropology, ANTH 210, and consent of instructor.
ANTH 511 Field Methods in Archaeology II
3 hrs.
Implementation of the field research strategy. Instruction in the basic skills of site excavation, mapping and retrieval and recording of data; also laboratory analysis, including classification and cataloguing of artifacts. Depending upon the problem orientation in a given field season, instruction may include site location survey, site sampling techniques, and paleoenvironmental reconstruction. To be taken concurrently with ANTH 510. (May be repeated with permission of instructor, but does not count toward anthropology major or minor twice.)
Prerequisites: Junior standing, 12 hours of anthropology, ANTH 210, and consent of instructor.

ANTH 520 Social Science Theory
3 hrs.
The philosophical/theoretical and conceptual foundations of the social sciences in general will be discussed with special emphasis on contemporary anthropology, including traditional as well as post-structural ways of thinking. Course meets the baccalaureate-level writing requirement.
Prerequisites: Junior standing, 12 hours of anthropology, and ANTH 240 or social science equivalent.

ANTH 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.
In the anthropological exploration of interrelationships among art, artist, and culture, examples from so-called "primitive art" will be used and various theories about creativity. Discussions will cover the biology and evolution of art, cross-cultural aesthetics, sociocultural contexts, material culture, semantics, and acculturation processes in arts and crafts.
Prerequisites: Junior standing, 12 hours of anthropology, and ANTH 240 or consent of instructor.

ANTH 545 Topics in Sociocultural Anthropology
3 hrs.
An intensive study of the cultures of an area of the world or selected problems. Topics will be announced each semester. (May be repeated for credit.)
Prerequisites: Junior standing, 12 hours of anthropology, and ANTH 240 or consent of instructor.

ANTH 552 Forensic Anthropology
3 hrs.
The study of biological anthropology as it applies to the legal system. Primary emphasis will be on skeletal and dental identification, facial reconstruction, and analysis of the human since death. Courtroom procedures and responsibilities of the expert witness in the legal system will be covered. Course meets the baccalaureate-level writing requirement.
Prerequisites: Junior standing, 12 hours of anthropology, and ANTH 250 or consent of instructor.

ANTH 555 Topics in Biological Anthropology
3 hrs.
A consideration of the biological relationships of specific population groups or general problems in human biology (e.g., human genetics, human growth and constitution, 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.

BIODIVERSITY AND ECOLOGY

The study of biological science as it relates to the world, its living resources, and their role in the environment. Course meets the baccalaureate-level writing requirement.
Prerequisites: Junior standing, 12 hours of anthropology, and ANTH 240 or consent of instructor.

ANTH 511 Field Methods in Archaeology II
3 hrs.
Implementation of the field research strategy. Instruction in the basic skills of site excavation, mapping and retrieval and recording of data; also laboratory analysis, including classification and cataloguing of artifacts. Depending upon the problem orientation in a given field season, instruction may include site location survey, site sampling techniques, and paleoenvironmental reconstruction. To be taken concurrently with ANTH 510. (May be repeated with permission of instructor, but does not count toward anthropology major or minor twice.)
Prerequisites: Junior standing, 12 hours of anthropology, ANTH 210, and consent of instructor.

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Prerequisites: Junior standing, 12 hours of anthropology, and ANTH 250 or consent of instructor.
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. In addition, only departmental courses in which a grade of "C" or better is obtained may be counted toward a major or minor in Biological Sciences.

BACCALAUREATE WRITING REQUIREMENT
Students who have chosen the Biology major, Biomedical Sciences major and Biology major in Secondary Education can satisfy the Baccalaureate Writing Requirement by successfully completing one of the capstone courses BIOS 497, BIOS 499, or BIOS 404 (Secondary Education only).

Biology Major

REQUIREMENTS
A major in Biology consists of a minimum of 32 credits of Biological Sciences courses, as well as cognates in chemistry, physics and mathematics. This course work includes two introductory courses, four intermediate level courses, two advanced interest courses, and a capstone experience. Only three credit hours may be BIOS 497 and/or 499.

INTRODUCTORY COURSE REQUIREMENTS
BIOS 150 and 151

INTERMEDIATE LEVEL COURSES
BIOS 250, 301, 319 or 350, 202 or 312

TWO ADVANCED INTEREST COURSES FROM THE FOLLOWING:
BIOS 312, 425, 498, 499, 505, 518, 524, 527, 528, 529, 530, 534, 536, 537, 539, 541, 542, 547, 549, 553, 555, 556, 557, 574, 597 (minimum 6 hrs.).

CAPSTONE EXPERIENCE
BIOS 497 or BIOS 499

COGNATE REQUIREMENTS
CHEM 101 or 102, 120, 360 or 361, 365 or 361.

PHYSICS, 2 semesters with labs.
MATH, 8 hours starting at MATH 118 or above.

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. Credit will be awarded toward a minor in biology.

Transfer Students
A minimum of 15 hours of course work in the Biology Major, the Secondary Education Biology 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 114 Wood Hall (616-387-5617), before registering for classes.

Biological Sciences Courses (BIOS)

A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

BIOS 105 Environmental Biology
3 hrs.
An ecology course will examine the relationships among living organisms, including man, and their environment. Emphasis will be placed on basic ecological principles. Credit does not apply toward a Biology or Biomedical Sciences major. Credit applies for the Biological Sciences minor and Liberal Education Area 5. Credit applies for General Education Area VI if taken with BIOS 110.

BIOS 110 Biology Laboratory
1 hr.
Designed as a companion to BIOS 105 or BIOS 112 to fulfill Natural Sciences Area VI requirement. Biology Laboratory provides hands-on experiences in environmental and human biology. Experiments will involve the use of scientific methodology and instrumentation to collect, analyze, interpret data, and draw conclusions about life processes, basic biological principles, as well as the interaction of people and their environment. Corequisite or prerequisite: BIOS 105 or BIOS 112. Credit not acceptable for Biological Sciences majors but applies toward a minor in biology.

BIOS 112 Principles of Biology
3 hrs.
A course designed to provide a natural science foundation for BIOS minors, allied health majors, and to fulfill liberal/general education requirements. Foundation concepts in cell biology, human anatomy, and physiology, botany, human genetics, microbiology, and basic principles are presented for students who do not have strong biology and chemistry backgrounds. Credit does not apply for Biology or Biomedical Sciences majors. Course fulfills Liberal Education Area 5. If taken with BIOS 110, it fulfills General Education Area VI.

BIOS 150 Molecular and Cellular Biology
4 hrs.
This is the first in a two semester introductory biology course 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.
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.
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.
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, 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 213 Cell Biology 3 hrs. Fall, Winter
This course presents an introduction to the field of cell biology. Concepts which are stressed include cell structure and function, types, chemistry, transport, and interactions. Prerequisites: BIOS 211 or BIOS 112 and a college-level chemistry course.

BIOS 220 Applied Botany 4 hrs.
Lectures, discussions, field trips and greenhouse experience are used to develop an understanding of the practical applications of botany. Principles and practices in indoor and outdoor gardening, landscaping, plant propagation, and the care and identification of cultivated plants are emphasized.

BIOS 230 Microbiology and Man 3 hrs. Fall
A course describing the nature of microorganisms, their harmful and beneficial effects on humanity and their role in nature. Not for credit towards a Biomedical Sciences major but does apply toward a minor.

BIOS 232 Microbiology and Infectious Diseases 4 hrs. Fall, Winter
An introductory microbiology course emphasizing characteristics and modes of transmission of the microorganisms that cause human disease. Credit does apply toward a minor in Biomedical Sciences and a major or minor in secondary education.

BIOS 234 Outdoor Science 4 hrs.
This course increases a student's awareness and understanding of organisms in nature. Lectures introduce the classification, evolution, and ecology as well as the natural history of selected plants and animals. The laboratory includes the identification of common organisms living in our area, hypothesis testing, data analysis, and report writing.

BIOS 240 Human Physiology 4 hrs. Fall, Winter
This course is designed to provide non-majors with an understanding of the basic functioning of the organ systems of the human body and their regulation and control. The molecular and cellular mechanisms involved are emphasized. Applications to exercise physiology are made. Clinical applications are introduced where they provide additional insight into basic function and regulatory mechanisms. 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.
An introduction to the relationships of organisms to their environment and to one another. Interrelationships of individuals and the physical environment, dynamics of populations, 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.
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. Prerequisites: BIOS 202 and a course in organic chemistry.

BIOS 321 Clinical Physiology 5 hrs. Winter
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. Prerequisites: BIOS 250 and organic chemistry; anatomy is recommended.

BIOS 401 Pathogenic Microbiology for Physicians Assistants 2 hrs. Winter
This course describes the common diseases and their treatment with emphasis on the significance of laboratory findings in their diagnosis. Students must be in the Physician Assistant curriculum, or permission of instructor.

BIOS 404 Teaching of Secondary Science 3 hrs.
This course addresses the topics of teaching and learning of science at the secondary level. It is designed for those in secondary education who intend to be certified to teach the earth, 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 teaching and using models, planning laboratory experiences, managing science equipment, and safety concerns are developed and discussed. Students also work in discipline-specific groups to address issues unique to that area of science and the science classroom. Prerequisites: 15 hours of science in a transferable science discipline and ED 302, which may be taken concurrently with this course.

BIOS 425 Genetics Laboratory 3 hrs. Winter (alternate years)
Students will acquire techniques currently used in the field of genetics. Prerequisite: BIOS 250 or equivalent.

BIOS 497 Senior Seminar: Topic to be specified 3 hrs.
This writing-intensive capstone course integrates a variety of biological concepts and defines the role of a biology professional. The student's record will indicate the nature of the seminar in which he/she has participated. This course will meet the baccalaureate-level writing requirement. Not repeatable for credit. Prerequisite: Senior standing and an approved major slip.

BIOS 498 Readings in Biological Sciences 1-3 hrs.
Approved application required.

BIOS 499 Independent Research in Biological Sciences 1-5 hrs.
Students may contact a faculty member to conduct research under the guidance of that faculty member. Before the initiation of the research, a literature search and a written experimental plan must be prepared. At the conclusion of the research project, a written report will be submitted to the guiding faculty member. At least three credits of this course can fulfill the departmental capstone course requirement. This course meets the baccalaureate writing requirement.

Prerequisites: Approved application (if used as a capstone course), junior standing and a declared major in the Biological Sciences Department.

All 500-level courses. 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.
The study of modes of action and effects of psychoactive drugs, such as alcohol, marijuana, cocaine, amphetamines, heroin, methadone, LSD, PCP, and nicotine. Prerequisites: An introductory physiology course or enrollment in SPADA (Specialty Program in Alcohol and Drug Abuse).

BIOS 512 Environment and Health Problems 3 hrs.
The impact of the environment on the health of the individual and of populations, the resulting physiological and ecological difficulties, and the various ways employed in meeting these challenges.

BIOS 515 Plants for Food and Industry 3 hrs.
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 cultivation 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 518 Endocrinology 3 hrs. Fall (alternate years)
A survey of the hormonal integration of organ-system function including the chemical
nature of these secrets, the cellular and biochemical mechanisms of hormone actions and the endocrine feedback control mechanisms. The regulatory nature of hormones in developmental processes, in adaptation and in disease processes will be stressed. Prerequisite: BIOS 350; biochemistry is recommended.

BIOS 520 Human Genetics
3 hrs. Winter (alternate years)
The principles of human heredity with particular emphasis on the clinical significance of biotechnical and chromosomal variation. Abnormalities of development and methods of risk analysis in genetic counseling are discussed. Prerequisite: BIOS 250.

BIOS 524 Microbial Genetics
3 hrs. (alternate years)
a molecular approach to microbial genetics, dealing primarily with bacterial and viral systems. Emphasis is placed on current literature and on the application of concepts to biomedical research. Prerequisites: BIOS 250 and 312 or consent of instructor; biochemistry is recommended.

BIOS 527 Systematic Botany
4 hrs.
Principles and techniques of plant classification, nomenclature, and biosystematics are presented in lectures in the field and laboratory experiences, using vascular plants as examples. Evolutionary trends, 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 528 Biology of Non-Vascular Plants
4 hrs.
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.
A detailed comparative study of the morphology, life cycles, and phytology 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.
Mosses and liverworts will be studied in lecture, lab, field trips, and the herbarium. Aspects of bryophyte ecology, systematics, and biogeography will be considered. Microscope and keying techniques will be developed. Each student will produce personal collections and keys. Prerequisites: BIOS 202.

BIOS 531 Biology of Aging
3 hrs.
This course is designed to provide students with an understanding of the aging process. The lectures will emphasize the anatomical, physiological and molecular changes which occur in cells and organs with aging. Clinical applications are introduced where they provide additional insight into the aging process. Prerequisites: An introductory physiology course.

BIOS 534 Virology
3 hrs. Winter
A study of the classification, structure and chemistry of viruses. Emphasis will be placed on the cell-virus interaction leading to the disease process or cellular alterations in mammalian systems. Prerequisite: BIOS 312; biochemistry is recommended.

BIOS 536 Immunology
4 hrs. Fall
A study of the biological and biochemical mechanisms of the immune response and the chemical nature of antibodies, antigens and their interaction. Emphasis will be placed on in vitro and in vivo humoral and hypersensitivity reactions. Prerequisite: BIOS 312; biochemistry is recommended.

BIOS 537 Histology
3 hrs. Fall
A study of the function and microscopic anatomy of mammalian tissues. Prerequisite: BIOS 211.

BIOS 539 Animal Behavior
3 hrs.
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 541 Invertebrate Zoology
3 hrs.
A study of the anatomy, physiology, embryology, and life history of representatives of the major groups of invertebrate animals. Prerequisite: BIOS 151.

BIOS 542 Entomology
4 hrs.
This course is a general study of insects, their structure, classification, physiology, life histories, ecological relationships, and economic importance. Students will learn to identify common families of insects and make individual collections. Prerequisite: BIOS 151.

BIOS 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. Prerequisites: BIOS 151.

BIOS 555 Marine Biology
3 hrs.
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 bioric resource conservation and utilization. Selected topics of current research are included.

BIOS 556 Tropical Biology
4 hrs.
A travel study course providing an introduction to both terrestrial and marine ecosystems in the tropics. The course, consisting of lectures, field explorations, and individual projects, examines the major life zones and biogeography of the region visited, from an ecological perspective. Tropical Rain, Montane, and Dry Forests and the biology of a coral reef will be studied. Human ecology, agriculture (tropical fruits and vegetables, sugar cane and coffee) and environmental issues will also be included. The course will be offered on one of the islands of the Caribbean and/or in Central America.

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. Prerequisites: BIOS 202.

BIOS 570 General Pathology
4 hrs. Fall (alternate years)
An introduction to pathology which describes the structural and biochemical changes occurring in cells and tissues following injury or disease. Prerequisites: BIOS core curriculum and organic chemistry.

BIOS 574 Embryology
4 hrs. Fall
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 as both a 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.
Lectures or seminars in various areas of Biological Sciences will be offered. The student's record will indicate the topic he/she has taken. May be repeated for credit.

BLACK AMERICANA STUDIES
See "Interdisciplinary Programs" in the College of Arts and Sciences.
CHEMISTRY

Michael E. McCarville, Chair
Donald C. Berndt
Steven B. Bertman
Dean W. Cooke
Robert E. Harmon
James A. Howell
Joseph M. Kanaanueller
David S. Reinhold
Donald R. Schreiber
Susan R. Stapleton
Ralph K. Steinhaus
H. Dale Warren

Students majoring in chemistry may prepare for a career in high school teaching, industrial laboratory work, or graduate work in departments of chemistry, biochemistry or medical colleges. The course offerings for the undergraduate attempt to give a broad but thorough grounding in the elements of chemistry. They should be fortified by a minor in physics, mathematics, or biology. Most students who intend to do advanced work in chemistry should plan to obtain a reading knowledge of a foreign language. At the present time German is preferred, but French or Russian might well be taken.

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 American Chemical Society immediately upon graduation. Students who plan to attend graduate school or work for the larger chemical companies should follow this degree program.

In order to complete an American Chemical Society Certified chemistry major, the following would be the expected minimum schedule of chemistry and prerequisite courses:

Freshman Year:
CHEM 101 or 102, General Chemistry I
CHEM 120, General Chemistry II
MATH 122, Calculus I
MATH 123, Calculus II

Sophomore Year:
CHEM 360, Organic Chemistry I
CHEM 361, Organic Chemistry II
MATH 272/273 VECTOR AND MULTIVARIATE CALCULUS
PHYS 205 and 206, Mechanics and Heat
PHYS 207 and 208, Electricity and Light

Junior Year:
CHEM 222, Quantitative Analysis
CHEM 430, Physical Chemistry I
CHEM 431, Physical Chemistry II
CHEM 436 (2 hrs.), Physical Chemistry Laboratory

Senior Year:
CHEM 520, Instrumental Methods
CHEM 516, Inorganic Chemistry

In addition two 3-or 4-hour advanced electives from 500-level chemistry or mathematics or physics as approved by the chemistry advisor. Reading knowledge of a foreign language is required for ACS certification.

 Majors and Minors

To qualify as a major or minor in chemistry from Western Michigan University the student, including the transfer student, must complete a minimum of 14 credit hours or 7 credit hours, respectively, in the Chemistry Department following the filing of a major or minor slip with the departmental advisor. The courses taken for credit must include at least one which contains a laboratory experience. Students who plan to attend graduate school in chemistry should take a minimum of courses under the credit-no credit option.

Students who fail to earn a grade of "C" or better in CHEM 120, 360, and 430 must not enroll in courses requiring these classes as prerequisites.

The Arts and Sciences Curriculum (LEC)

Chemistry Major requires 34 hours in chemistry including the basic sequence through Physical Chemistry as in the A.C.S. certified program and two 3- or 4-hour courses at the 500-level, chosen from at least two areas of chemistry.

Secondary Education Chemistry Majors require 30 hours of chemistry courses as in the Arts and Sciences major described above including a minimum of 4 hours of Physical Chemistry.

The Health Chemistry Major is designed to meet the needs of a chemistry background for the preprofessional degree leading to health science areas such as medicine, dentistry, veterinary medicine, nutrition, clinical chemistry, toxicology, pharmacology, etc. A minimum of 33 chemistry credit hours must be selected according to the following:

CHEM 101 or 102, General Chemistry I
CHEM 120, General Chemistry II
CHEM 360, Organic Chemistry I
CHEM 361, Organic Chemistry II
CHEM 222, Quantitative Analysis
CHEM 552 and 556, Biochem. I and II with Laboratory
CHEM 535, Introduction to Physical Chemistry
CHEM 430, Physical Chemistry I
CHEM 436 (1 hr.), Physical Chemistry Laboratory
CHEM 506, Chemical Laboratory Safety or CHEM 564, Drugs and Pesticides and additional 500-level Chemistry electives if necessary to meet the minimum hour requirement.

The Business-Oriented Chemistry Major is available to provide chemical understanding to the level needed by students who intend to prepare for careers in non-technical functions of chemical industry and distribution of its products and technology, principally in the areas of management and sales, as well as for some aspects of government service. Those who elect this major are required to complete a minor in either General Business—option I (21 hrs.), Management (21 hrs.), or Marketing—option 5 (21 hrs.) in the Haworth College of Business and must include BUS 142, 340 courses in writing and communication. This chemistry major must include a minimum of 30 chemistry credit hours as follows:

CHEM 101 or 102, General Chemistry I
CHEM 120, General Chemistry II
CHEM 360, Organic Chemistry I
CHEM 361, Organic Chemistry II
CHEM 222, Quantitative Analysis
CHEM 355, Introductory Biochemistry
CHEM 535, Introduction to Physical Chemistry or CHEM 430 and 431, Physical Chemistry I and II
CHEM 506, Chemical Laboratory Safety
CHEM 520, Instrumental Methods

Other specialized chemistry programs can be developed through the undergraduate chemistry advisor.

A minimum chemistry minor will contain at least 18 hours. Chemistry minors in secondary education are required to take 20 hours of chemistry and to complete one year of physics before student teaching.

Science and Mathematics Teaching Minor

The Department of Chemistry participates in the science and mathematics teaching minor for students in the elementary curriculum. For a full description of the program, consult its listing under the "Interdisciplinary Programs" section in the College of Arts and Sciences.

Baccalaureate Writing Requirement

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

Chemistry Placement Examination

The chemistry placement examination is required to insure that students are properly placed in beginning chemistry courses based upon the skills they possess in chemistry. It assumes that the student has had one year of high school chemistry and high school algebra.

Passing the chemistry placement examination meets the chemistry prerequisite for CHEM 101 and 103. A high level passing score allows the student to enroll in CHEM 102. Students who do not pass the chemistry placement examination must enroll in CHEM 100 to build up their background in chemistry. In addition, each beginning chemistry course has a mathematics prerequisite.

Chemistry Courses (CHEM)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

CHEM 100 Introduction to General Chemistry 4 hrs. Fall, Winter

A course for students with insufficient background for college level chemistry which develops skills essential to a working understanding of the science of chemistry. Instruction and practice in the fundamental tools for solving chemical problems: chemical formulas, chemical equations, stoichiometry, measurement units, conversions. An introduction to the nature of matter is developed. Enrollment is restricted to students without high school chemistry or to those who demonstrate inadequate retention of their chemistry background. This course credit will not apply to curricular requirements of chemical science at this university and should be followed by CHEM 101 or CHEM 103. Prerequisite: MATH 110 or equivalent performance on the Math Placement Examination.

CHEM 101 General Chemistry I 4 hrs. Fall, Winter

The theory and fundamental principles of chemistry are emphasized in this foundation course which serves primarily those who intend to enroll for two or more additional courses in chemistry. Credit for 101 is equivalent to the level of CHEM 102. This course includes lecture and laboratory. Students can receive credit for
only one of Chem 101, 102, 103. Prerequisite: CHEM 100 with a grade of "C" or better or both of the following — (a) one year of high school chemistry and (b) a passing grade on the chemistry placement examination. (2) MATH 111 or the equivalent performance on the math placement examination.

CHEM 102 General Chemistry I
4 hrs. Fall
The theory and fundamental principles of chemistry are emphasized in this foundation course which serves primarily those who intend to enroll for more than two semesters of chemistry. Students well prepared may earn credit by taking examination. This course includes lecture and laboratory. Students can receive credit for only one of CHEM 101, 102, 103. Prerequisite: One year of high school chemistry, passing the chemistry placement examination at a high level, and either MATH 111 or equivalent performance on the math placement examination.

CHEM 103 General Chemistry II
4 hrs. Fall
A course primarily for students in Engineering and Applied Sciences curricula and others planning only a one or two semester terminal review of chemistry. This course surveys principles of chemistry with emphasis on calculations, descriptive and applied chemistry. May be used as a prerequisite for CHEM 110, 111 with a grade of "C" or better. This course includes lectures and laboratory. Student can receive credit for only one of CHEM 101, 102, 103. Prerequisite: CHEM 100 with a grade of "C" or better or both of the following — (a) one year of high school chemistry and (b) a passing grade on the chemistry placement examination; (2) MATH 111 or the equivalent performance on the math placement examination.

CHEM 107 Chemistry of Textiles and Design Media
4 hrs. Fall, Winter
A course in which the concepts needed to understand the chemical properties of textile and design media are developed in a non-mathematical manner. Textile fibers, textile finishes, dyes, plastics, rubber, paint, paper, leather, metals, cleaning agents, ceramics, glass, cosmetics, and wood are considered. This course is designed to meet the needs of students of home economics who plan a career in merchandising, or other students of art and applied science who handle the materials being considered. Not applicable for major or minor in chemistry nor as a prerequisite to other chemistry classes, this course includes lecture and laboratory.

CHEM 119 General Chemistry Laboratory
1 hr.
A laboratory course designed to complement the lecture topics covered in General Chemistry. This course is intended for those students who have had a general chemistry course at another school which did not have a laboratory as part of the course. Prerequisite: a minimum of 3 hours of non-laboratory General Chemistry and permission of chemistry advisor.

CHEM 120 General Chemistry II
4 hrs. Fall, Winter
The properties of a number of the more representative elements and the compounds with which they form are studied. The descriptive chemistry of some common cations and anions is studied using the hydrogen sulfide scheme of analysis in the laboratory. The chemical relationships in the periodic table, electrochemistry, and the equilibrium principle are also treated. Prerequisite: CHEM 101, 102 or 103.

CHEM 140 Introductory Environmental Chemistry
4 hrs. Winter
Purpose of course is to develop an appreciation of the chemical aspects of environmental problems and an acquaintance with the basic principles involved. This limited treatment considers elementary concepts of the nature of matter with application of tools of chemists important in exploration of environmental problems. Laboratory may entail field trips as well as experiments which relate to environmental problems. Credit does not apply for graduation if CHEM 101, 102 or 103 are used, or for major or minor in chemistry.

CHEM 150 Chemistry in Society
4 hrs.
This course provides an overview of fundamental chemical principles so that the 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, pharmaceuticals, household products, plastics, and food chemistry. Credit does not apply for a major or minor in chemistry. Prerequisite: MATH 110.

CHEM 155 Chemistry for Health Professionals I
4 hrs.
First semester of a two course sequence for College of health and Human Services students whose curricula require an introduction to biochemistry. The first semester emphasizes general and organic chemistry. This course does not satisfy curricular requirements for chemistry outside of the College of Health and Human Services.

CHEM 156 Chemistry for Health Professionals II
4 hrs.
The continuation of CHEM 155, emphasizing biochemistry. This course does not satisfy curricular requirements for chemistry outside of the College of Health and Human Services or the chemistry requirements for the Physician Assistant Program. Prerequisite: CHEM 155.

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 222 Quantitative Analysis
4 hrs. Fall, Winter
This course includes the theory, techniques and calculations of quantitative analysis. Instrumental methods need to supplement classical analytical procedures in the laboratory. Prerequisite: CHEM 120.

CHEM 350 Biochemistry for Physician's Assistant
3 hrs.
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 365 or 361.

CHEM 355 Introductory Biochemistry
3 hrs. Winter
A basic course in the chemistry and metabolism of carbohydrates, lipids, proteins and nucleic acids. Not applicable to American Chemical Society Certified or Arts and Sciences Curriculum Chemistry Majors. Prerequisite: CHEM 365 or 361.

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 biochemical determinations. Prerequisite or corequisite: CHEM 355 or CHEM 350.

CHEM 360 Organic Chemistry I
4 hrs. Fall, Winter
The preparation and chemical properties of aliphatic and aromatic compounds are studied. Emphasis is placed upon the nature of covalent bonds and molecules and the general reactions of functional groups. The course includes lecture and laboratory. Prerequisite: CHEM 120.

CHEM 361 Organic Chemistry II
4 hrs. Fall, Winter
A continuation of CHEM 360. Prerequisite: CHEM 360.

CHEM 365 Introduction to Organic Chemistry
4 hrs. Fall, Winter
A one semester course which surveys the chemistry of all basic chemical compounds, designed for those needing a working knowledge of organic chemistry without the theoretical detail of a full year course. Credit may not be received for both CHEM 365 and 360. This course, which includes laboratory, will not serve as a prerequisite for CHEM 361. Prerequisite: CHEM 120.

CHEM 369 Organic Chemistry Laboratory
1 hr.
A laboratory course designed to complement the lecture topics covered in Organic Chemistry. This course is intended for those students who have had an organic chemistry course at another school which did not have a laboratory as part of the course. Prerequisite: A minimum of 3 hours of non-laboratory Organic Chemistry and permission of chemistry advisor.

CHEM 390 Special Problems in Chemistry
2 hrs. Fall, Winter
This course is designed to give students that have completed basic chemistry courses 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 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 shows 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. Prerequisite: 15 hours of science in a certifiable science discipline and ED 302 which may be taken concurrently.

CHEM 430 Physical Chemistry I 3 hrs. Fall
Lectures on kinetic theory of gases, thermodynamics, phase rule, equilibria, electrochemistry, quantum theory, spectroscopy, statistical mechanics, chemical kinetics and mechanisms, transport properties, surface chemistry, macromolecules, crystal structure, etc. Prerequisites: PHYS 205, 206, 207, 208, MATH 272. CHEM 120.

CHEM 431 Physical Chemistry II 3 hrs. Winter
A continuation of CHEM 430. Prerequisite: CHEM 430.

CHEM 436 Physical Chemistry Laboratory 1 hr. Fall, Winter
Laboratory experiments designed to emphasize and reinforce the principles covered in CHEM 430 and 431, with consideration of the limitations of physical measurements and their quantitative interpretation. Can be multiply enrolled or reenrolled for a total of 2 credit hours. Prerequisites: CHEM 222 and 430 or 535. Repeatable for up to 2 credit hours

Undergraduates with junior status and 12 hours of work in chemistry may enroll in 500-level courses with prior approval of the department chair.

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. Prerequisite: 23 hours of chemistry.

CHEM 506 Chemical Laboratory Safety 1 hr. Fall
A study of toxic, corrosive, flammable, explosive, electrical, mechanical, thermal, and radiation 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: 24 hours of chemistry.

CHEM 509 Topics in Chemistry 3 hrs.
A topic is presented in greater depth or from a perspective different from that of a typical undergraduate course. Representative topics such as microprocessors, industrial chemistry, chemical pollution, etc. according to student interest and request. Prerequisite: 16 hours of chemistry.

CHEM 510 Inorganic Chemistry 4 hrs. Winter
The course includes descriptive and theoretical inorganic chemistry as well as preparation of different types of inorganic compounds. Prerequisite or corequisite: CHEM 431.

CHEM 520 Instrumental Methods in Chemistry 3 hrs. Fall
An introduction to the theory and application of modern chemical instrumentation is presented. General topics covered are elementary electronics, electrochemistry, spectroscopy, and other instrumental techniques. 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 particular emphasis on spectroscopic and chromatographic measurements. Laboratory provides practical experience in application of principles discussed in lecture. Not available to Chemistry majors. Prerequisite: CHEM 361 or 365.

CHEM 528 Chemical Separations 3 hrs.
Principles and applications of chemical separations, including distillation, crystallization, extraction, electrophoresis and a variety of chromatographic techniques. Laboratory exercises illustrate typical applications of the methods. Prerequisite: CHEM 361.

CHEM 535 Introduction to Physical Chemistry 3 hrs. Fall
Theory and applications of chemical structure, energetics, and rates and mechanisms of processes as a basis for understanding the principles of chemistry. Laboratory credit is obtained by taking CHEM 436, Physical Chemistry Laboratory. This course may not be applied to a graduate curriculum in chemistry. Prerequisites: 16 hours chemistry, MATH 123, PHYS (115, 116) or (207, 208).

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 361, and 430 or 535.

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 361, and 430 or 535.

CHEM 554 Biochemistry II 3 hrs. Winter
Continuation of CHEM 550. Chemistry and metabolism of carbohydrates and lipids. Metabolism of amino acids and photosynthesis. Prerequisite: CHEM 550 or 552.

CHEM 560 Qualitative and Spectroscopic Analysis of Organic Compounds 4 hrs. Fall
A course in spectroscopic and chemical methods of identification of organic compounds in the pure state and in mixtures, which has as a secondary goal the development of deductive reasoning in the field of organic chemistry. Prerequisites: CHEM 361 and 24 hrs. of chemistry.

CHEM 564 Drugs and Pesticides 3 hrs. Winter
This course introduces students to the chemical nature and uses of drugs and pesticides. Adverse and potential toxicological hazards are also discussed in respect to biological-chemical properties and the behavioral-sociological implications. Prerequisite: CHEM 361 or 365.

CHEM 570 Polymer Chemistry 3 hrs. Winter
The aspects of macromolecular chemistry which are significantly different from the chemistry of small molecules are studied. In particular, mechanisms and techniques involved in the synthesis of macromolecules, and the structure, composition, mechanical properties, and solution properties of polymers are studied in terms of the organic, physical, and analytical chemistry involved. Prerequisite: CHEM 361 or 365, and CHEM 431 or 535.

CHEM 580 History of Chemistry 3 hrs. Winter
This course traces the roots of chemistry from ancient technology through alchemy and medicine to the chemical revolution of Lavoisier and Dalton. In more detail it examines the nineteenth century basis of modern chemistry and the twentieth century clarification of the structural atom. Prerequisite: 16 hours of chemistry, including CHEM 360 or 365.

CHEM 590 Special Problems in Chemistry 2 hrs. Fall, Winter
Research work on a problem in chemistry in association with a faculty member. This research work is to be summarized in a written report. May be repeated once for credit. Prerequisites: CHEM 436, 24 hours of chemistry, with approval of the department chairperson and a faculty director.
COMMUNICATION

James Gilchrist, Chair
Lynwood Bartley
Loren Crane
Richard Dieker
Wendy Ford
Susan Fox
Richard A. Gershon
James Jaksa
Richard Joyce
Joseph Kayany
Steven Lipkin
Peter G. Northouse
Thomas F. Pagel
Steven Rhodes
George Robeck
Dale Shannon
Paul Yelsma

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 communication. Effective oral 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 (COM), Interpersonal Communication (IPC), Media Studies (MDS), Organizational Communication (OCM), Public Relations (PR), and Telecommunication Management (TCM). These major areas of concentration reflect the primary divisions in the discipline, with required courses to insure adequate preparation in specific fields. The concentration areas and accompanying upper-level requirements provide appropriate guidance to assure that programs of study are academically sound.

Two minors, Minor in Communication and Minor in Secondary Communication Education, 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 radio, 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 departmental office at 387-2974 for advising hours. A Handbook for Majors and Minors in Communication, which describes career opportunities and suggested programs of study in communication, is available free of charge from the department office.

Pre-Communication Major

Students planning to major in any area of communication will be admitted as a pre-communication student, PCM, and will work with a communication advisor in the development of a planned program. This status, however, does not guarantee admission to a communication major, since more students apply for admission than can be accepted. A student’s application for admission as a major will be considered following the completion of a minimum of 30 semester hours, 15 of which must be from Western Michigan University and the completion of COM 170 and COM 200.

Transfer students who present appropriate communication courses will be evaluated and may be admitted on an individual basis directly into the program. Transfer students with no communication courses will be required to take COM 170, COM 200 for the first semester, and will be acted upon at the completion of their first semester.

Admission to a major in communication is by application only, and will be based on the following factors:

1. Overall grade point average, with a minimum of 2.0
2. Grades earned in COM 170 and COM 200 must be “C” or better.

Deadlines for submitting applications are September 15, January 15, and May 15. Application forms and additional information can be obtained from the departmental 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 by a departmental advisor following completion of the PCM requirements. Declaration of a minor in communication must be made with a departmental advisor before the completion of nine semester hours of communication credit.

2. Students must earn a grade of “C” or better in all course work applied toward a major/minor program.

3. Prerequisites listed for all communication courses must be met. Students who have not completed the prerequisites with a grade of “C” or better, will be dropped from the class. All 500-level courses require junior or senior standing, in addition to any specific prerequisites listed.

4. Petition for exceptions to any departmental policies should be directed to the department chair.

Baccalaureate Writing Requirement

Students who have chosen to major in any of the communication areas will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

- COM 332 Group Problem Solving
- COM 335 Leadership
- COM 358 TV and Film Scripting
- COM 359 Broadcast Journalism
- COM 370 Interpersonal Communication
- COM 372 Introduction to General Semantics
- COM 441 Documentary in Film and Television
- COM 482 Communication Processes in the Organization
- COM 541 Telecommunications Law and Policy

Majors

Broadcast and Cable Production (BCP) Major

36 hours

1. Pre-Mass Communication Requirements

   a. COM 104 Public Speaking 3
   b. COM 210 Performance of Literature 3
   c. COM 170 Interpersonal Communication I 3
   d. COM 200 Introduction to Communication Theory 3

2. Broadcast and Cable Production Core Requirements

   a. A. All of these courses are required (9 hrs.):
      i. COM 200 Introduction to Broadcast and Cable Production 3
      ii. COM 210 Broadcast Production II 3
      iii. COM 220 Broadcast Internship 3
      iv. COM 240 Film Production I 3

   b. One course from the following group is required, selected in consultation with an advisor (3 hrs.):
      i. COM 240 Film Production I 3
      ii. COM 241 Film Production II 3
      iii. COM 250 Broadcast Operations 3

3. Upper-level Broadcast and Cable Production Requirements. One course from each of the following groups is required, selected in consultation with an advisor (18 hrs.):

   a. A. Select one of the following courses (3 hrs.):
      i. COM 355 Small Format Video 3
      ii. COM 356 Film Production 3
      iii. COM 357 TV Studio Production 3

   b. Select one of the following courses (3 hrs.):
      i. COM 257 Radio Production 3
      ii. COM 258 TV/Video Production I 3
      iii. COM 259 TV Performance 3

   c. Select one of the following courses (3 hrs.):
      i. COM 447 Organizational TV Production 3
      ii. COM 457 Advanced TV Production 3

   d. Select one of the following courses (3 hrs.):
      i. *COM 358 TV/Film Scripting 3
      ii. *COM 359 Broadcast Journalism 3

   Two courses from the following group are required, selected in consultation with an advisor:

   e. Select two of the following courses (6 hrs.):
      i. COM 305 Special Topics in Communication 1-4
      ii. COM 342 The Film Industry 3
      iii. COM 441 Documentary in Film/TV 3
      iv. COM 443 Mass Communication/Social Change 3
      v. COM 444 Mass Media/News/Public Affairs 3

   *Courses designated with an asterisk (*) do not count toward major requirements.
All course prerequisites must be met to enroll in upper-level courses. Grade requirement: A minimum grade of "C" is required in all courses to be applied toward the major. *Writing Intensive Course Requirement. These courses satisfy the upper-level writing requirement.

### Communication Studies (COS) Major

**36 hours**

1. **Pre-Communication Requirements**
   - **6 hrs.**
   - **COM 170** Interpersonal Communication I
   - **COM 200** Introduction to Communication Theory
   - **COM 325** Group Problem Solving
   - **COM 430** Studies in Attitude Change
   - **COM 437** Interpersonal Communication II
   - **COM 438** Health Communication

2. **Communication Core Requirements**
   - **6 hrs.**
   - **COM 335** Leadership
   - **COM 436** Organizational TV Production
   - **COM 439** Public Relations in Organizations
   - **COM 478** Nonverbal Communication
   - **COM 479** Female/Male Interaction
   - **COM 484** Health Communication

3. **Upper-level Communication Studies Requirements**
   - **Two courses from each of the following groups are required.**
     - **18 hrs.**
     - **A. Select two of the following courses (6 hrs.):**
       - **COM 305** Special Topics in Communication
       - **COM 435** Introduction to General Semantics
       - **COM 437** Interpersonal Communication II
       - **COM 475** Family Communication
       - **COM 479** Female/Male Interaction
       - **COM 484** Health Communication
     - **B. Select three of the following courses (9 hrs.):**
       - **COM 305** Special Topics in Communication
       - **COM 437** Introduction to General Semantics
       - **COM 438** Health Communication
       - **COM 475** Family Communication
       - **COM 479** Female/Male Interaction
       - **COM 484** Health Communication

4. **Electives**
   - **6 hrs.**
   - Six hours of electives in communication, selected from any courses offered by the department.

### Interpersonal Communication (IPC) Major

**36 hours**

1. **Pre-Communication Requirements**
   - **6 hrs.**
   - **COM 170** Interpersonal Communication I
   - **COM 200** Introduction to Communication Theory
   - **COM 437** Interpersonal Communication II
   - **COM 438** Health Communication

2. **Communication Core Requirements**
   - **6 hrs.**
   - **COM 435** Leadership
   - **COM 436** Organizational TV Production
   - **COM 439** Public Relations in Organizations
   - **COM 478** Nonverbal Communication
   - **COM 479** Female/Male Interaction
   - **COM 484** Health Communication

3. **Upper-level Communication Studies Requirements**
   - **Two courses from each of the following groups are required.**
     - **18 hrs.**
     - **A. Both of these courses are required (6 hrs.):**
       - **COM 335** Group Problem Solving
       - **COM 437** Interpersonal Communication II
     - **B. Select three of the following courses (9 hrs.):**
       - **COM 305** Special Topics in Communication
       - **COM 435** Introduction to General Semantics
       - **COM 438** Health Communication
       - **COM 475** Family Communication
       - **COM 479** Female/Male Interaction
       - **COM 484** Health Communication

4. **Interpersonal Electives**
   - **9 hrs.**
   - Nine hours of electives in communication, six of which may be selected from any courses offered by the department and three hours selected from upper-division (300 or higher) courses in the department.

### Media Studies (MDS) Major

**36 hours**

1. **Pre-Communication Requirements**
   - **6 hrs.**
   - **COM 170** Interpersonal Communication I
   - **COM 200** Introduction to Communication Theory
   - **COM 435** Leadership
   - **COM 436** Organizational TV Production
   - **COM 439** Public Relations in Organizations

2. **Media Studies Emphasis Core Requirements**
   - **12 hrs.**
   - **A. This course is required:**
     - **COM 240** Introduction to Telecommunication
   - **B. Select one of the following courses (3 hrs.):**
     - **COM 104** Public Speaking
     - **COM 106** Voice and Diction
     - **COM 210** Performance of Literature

### Organizational Communication (OCM) Major

**36 hours**

1. **Pre-Communication Requirements**
   - **6 hrs.**
   - **COM 170** Interpersonal Communication I
   - **COM 200** Introduction to Communication Theory
   - **COM 335** Leadership
   - **COM 436** Organizational TV Production
   - **COM 439** Public Relations in Organizations

2. **Communication Core Requirements**
   - **6 hrs.**
   - **COM 435** Leadership
   - **COM 436** Organizational TV Production
   - **COM 439** Public Relations in Organizations
   - **COM 475** Family Communication
   - **COM 479** Female/Male Interaction
   - **COM 484** Health Communication

3. **Upper-level Organizational Communication Requirements**
   - **15 hrs.**
   - **A. Both of these courses are required (6 hrs.):**
     - **COM 335** Leadership
     - **COM 436** Organizational TV Production
   - **B. Select three of the following courses (9 hrs.):**
     - **COM 305** Special Topics in Communication
     - **COM 305** Special Topics in Communication
     - **COM 435** Introduction to General Semantics
     - **COM 475** Family Communication
     - **COM 479** Female/Male Interaction
     - **COM 484** Health Communication

All course prerequisites must be met to enroll in upper-level courses. Grade requirement: A minimum grade of "C" is required in all courses to be applied toward the major. *Writing Intensive Course Requirement. These courses satisfy the upper-level writing requirement.
COM 449 Public Relations in Organizations 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

4. Organizational Communication Electives 9 hrs.

All course prerequisites must be met to enroll in upper-level courses. Grade requirement: A minimum grade of "C" is required in all courses to be applied toward the major. *Writing Intensive Course Requirement. These courses satisfy the upper-level writing requirement.

Public Relations (PUR) Major

48-50 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 (9 hrs.)
      COM 449 Public Relations and Organizations 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 104 Public Speaking 3
      COM 204 Advanced Public Speaking 3
      D. Select one of the following (3 hrs.):
      *COM 332 Group Problem Solving 3
      *COM 335 Leadership 3
      E. 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
      COM 458 Television Performance 3
      F. Select two of the following (6 hrs.):
      COM 240 Introduction to Telecommunication 3
      COM 443 Mass Communication and Social Change 3
      COM 444 Mass Communication, News and Public Affairs 3
      3. Cognate Course Requirements 12-14 hrs.
      A. This course is required: PARR 150 Graphic Arts 3
      B. Select one of the following (3 hrs.): ED 548 Audio Visual Media I 3
      ED 549 Audio Visual Media II 3

C. Select two of the following (required courses in English can be used toward a journalism minor) (8 hrs.):
   ENGL 264 News Writing 4
   ENGL 265 News Editing 4
   ENGL 363 Reporting 3
   ENGL 364 Feature/Article Writing 3

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. *Writing Intensive Course Requirement. These courses satisfy the upper-level writing requirement.

Telecommunication Management (TCM) Major

36 hours

1. Pre-Communication Requirements 6 hrs.
   COM 170 Interpersonal Communication I 3
   COM 200 Introduction to Communication Theory 3
   2. Telecommunication Management Core Requirements 6 hrs.
      A. This course is required (3 hrs.):
      COM 240 Introduction to Telecommunication 3
      B. Select one of the following courses (3 hrs.):
      COM 104 Public Speaking 3
      *COM 332 Group Problem Solving 3
      *COM 335 Leadership 3
      A. All of the following courses are required (15 hrs.):
      COM 452 Broadcast Sales 3
      COM 456 Broadcast/Cable Programming 3
      *COM 541 Telecommunications Law and Policy 3
      COM 548 Telecommunication Management 3
      COM 554 Communication Technology 3
      Select three of the following courses (9 hrs.):
      COM 256 Broadcast Operations 3
      COM 305 Special Topics in Communication 3
      COM 342 The Film Industry 3
      COM 442 Mass Media and the Child 3
      COM 443 Mass Communication/Social Change 3
      COM 444 Mass Media/News/Public Affairs 3
      COM 445 Television Criticism 3
      COM 446 Mass Entertainment 3
      COM 447 Organizational TV Production 3
      COM 455 International Telecommunication Policy 3
      *COM 482 Communicaton Processes in Organizations 3
      COM 490 Internship 3
      COM 551 Methods of Media Analysis 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. *Writing Intensive Course Requirement. These courses satisfy the upper-level writing requirement.

Minors

Communication Minor

21 hours

A communication minor requires 21 semester hours of COM, including COM 170, COM 200 and 15 additional elective hours to be chosen in consultation with the appropriate advisor of the department. Nine of these hours must be taken at the 300-500 level.

Secondary Education Minor in Communication

21 hours

REQUIREMENTS

COM 104 Public Speaking 3 hrs.
COM 170 Interpersonal Communication I 3 hrs.
COM 200 Introduction to Communication Theory 3 hrs.
COM 204 Advanced Public Speaking 3 hrs.
COM 332 Group Problem Solving 3 hrs.
COM 334 Argumentation and Debate 3 hrs.
Elective 300-400 level 3 hrs.

Other courses may be required, based on an analysis of student's proficiencies, with a total of at least 21 hours in COM, none of which must be at the 300-400 levels.

Transfer Students

Transfer students are permitted to transfer as many as 12 semester credit hours for a major and 9 hours for a minor in communication.

Communication Courses (COM)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

COM 104 Public Speaking 3 hrs.

Study of the application of principles of communication underlying effective oral presentations, with attention given to speaking in business, professional, and public settings. Includes practice in preparing, presenting and evaluating speeches and other forms of oral presentations.

COM 106 Voice and Diction 3 hrs.

Individual improvement program emphasizing voice production and diction.

COM 170 Interpersonal Communication I 3 hrs.

An introductory course in communication theory and practice in which students utilize their powers of speech to increase their effectiveness in interpersonal relationships through understanding of self and others.

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. Prerequisite: COM 200.
COM 204 Advanced Public Speaking
3 hrs.
Advanced study and presentation of informative, argumentative, persuasive and special occasion speeches. Prerequisite: COM 104 or consent of department.

COM 207 Intrapersonal Communication
3 hrs.
The examination of intrapersonal communication models showing how imagery and symbolic processes organize patterns of thinking that permit self-direction and regulation.

COM 210 Performance of Literature I
3 hrs.
Emphasis is placed on developing the student's appreciation of literature and his/her skill in analysis and performance of prose, poetry, and drama, including an introduction to group performance of literature.

COM 211 Performance of Literature II
3 hrs.
A continuation of COM 210. COM 211 includes drama and poetry, with a special emphasis on the adaptation and performance of narrative prose. Prerequisite: COM 210 or consent.

COM 240 Introduction to Telecommunication
3 hrs.
This course surveys the history and development of broadcasting, cable, and telephone communications. Also considered are current relationships, including management, operations and programming, as well as basic telecommunication regulation.

COM 241 Film Communication
3 hrs.
An introduction to the unique language and elements of the film medium through the study of outstanding examples of historical and contemporary experimental, documentary and feature films. $10 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. Prerequisites: drama, documentary and other types of aural messages. $8 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 311 Group Performance of Literature
3 hrs.
Emphasis upon collaboration in group selection, arrangement, adaptation, preparation, and rehearsal of readers theatre programs drawn from prose, poetry, and drama. Use of video recording and playback. Prerequisite: COM 210 or consent.

COM 332 Group Problem Solving
3 hrs.
This course examines principles and procedures of effective group communication with an emphasis on practical application of problem solving, decision making, and critical thinking skills. Individuals will work together in a variety of group situations learning to communicate effectively, plan agendas, make decisions, write and present group reports, and analyze group communication behaviors. This course meets the University upper-level writing-intensive requirement. Prerequisites: COM 170, COM 200.

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 meets the University upper-level writing-intensive requirement. Prerequisites: COM 170, COM 200.

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, acquisition, distribution, exhibition, and legal issues. Prerequisite: COM 241.

COM 355 Small Format Video Production
3 hrs.
Practical experience in the design, production, implementation and evaluation of small-format television programs. Applications of portable video technology to the broadcast industry and community cable television systems will be stressed. $20 lab fee. Prerequisite: COM 200, COM 256.

COM 356 Film Production
3 hrs.
Production of short experimental films; scripting, planning, editing, directing and photography. 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. $10 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 operation equipment, crew roles, and producing and directing various types of television studio formats. In addition to the texts, students must provide supplies averaging about $10. $15 lab fee. Prerequisite: COM 200, COM 256.

COM 358 TV and Film Scripting
3 hrs.
The styles and techniques of film and television scripting for broadcast formats, station continuity, commercials, dramatic scripts, small format video, and documentary. This course meets the University upper-level writing-intensive requirement.

COM 359 Broadcast Journalism
3 hrs.
Radio and TV as news and information media. The course examines the role of the mass communication practitioner and the consumer. Prerequisites: COM 170, COM 200 or consent of instructor. This course meets the University upper-level writing intensive requirement.

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." Prerequisite: COM 170.

COM 398 Independent Study Communication 1-6 hrs.
Designed to allow outstanding students to work independently under staff supervision. Includes extensive study, research or special creative projects in any of the several areas of communication. One to six hours credit may be accumulated. Prerequisite: Consent, Chair of Department.

COM 430 Studies in Attitude Change: Variable Topics
3 hrs.
Selected areas of detailed study within the total range of rhetoric. Each of the courses listed below carries separate credit, and a student may take any or all of the offerings listed under COM 430. In addition to the topics listed, additional topics are offered from time to time and will be listed in the Schedule of Classes.

1. Freedom of Speech
2. Political Communication

COM 432 Group Communication Theory
3 hrs.
A study of small group communication from theoretical perspectives. The emphasis will be on analyzing small group communication based on an understanding of group communication theories, concepts, and research methods. Prerequisite: COM 332.

COM 441 Documentary in Film and Television
3 hrs.
A study of documentary philosophies, strategies, and accomplishments through an examination of important documentarians, movements, and films. $10 fee. This course meets the University upper-level writing-intensive requirement. Prerequisite: COM 241.

COM 442 Mass Media and the Child
3 hrs.
Assesses the impact that mass media, including radio, television, films, comics, and other media, may be having on the minds and behaviors of children.

COM 443 Mass Communication and Social Change
3 hrs.
The course examines the role of the mass media in diffusing information and persuasive messages, and the effects of these messages on individuals, groups and institutions. The impact of mass media and social change are studied from the communication/change viewpoint of the practitioner and the consumer.
COM 444 Mass Communication, News, and Public Affairs
3 hrs.
The course examines the role of the media in covering public affairs news and disseminating it to the public. Questions related to media access, fairness, media regulation and message production are discussed in light of current events.

COM 445 Television Criticism
3 hrs.
Examines the various functions and writings of contemporary television critics, and establishes criteria for evaluating television programs and program criticism. Students will view and analyze various television program types, including documentary, drama, visual essay and other entertaining and educational programs.

COM 446 Mass Entertainment
3 hrs.
This course examines the role and function of mass entertainment in modern society. Major topics include mass entertainment as part of leisure, the social and psychological functions of mass entertainment; measuring mass taste; and in-depth study of popular mass media formats such as soap operas, detective, western, popular music, etc.

COM 447 Organizational TV Production
3 hrs.
Applications of radio and TV technology for the business professional, educator, media specialist, and the clinician. Utilization of electronic media for training, research observation and instruction. In addition to required text materials, students must provide supplies averaging about $10.00 per student $10 lab fee. Prerequisite: COM 200, COM 256.

COM 449 Public Relations and Organizations
3 hrs.
The course will examine the role of public relations and public information in a variety of organizations with a communication theory perspective. The course is designed to prepare individuals for positions in public relations and public information, or for other positions in organizations concerned with the flow of information across organization boundaries. Prerequisite: COM 200 or consent of instructor

COM 450 Public Relations Program Development
3 hrs.
This is an advanced course in public relations emphasizing research methodology, developing planning objectives, and program evaluation for corporate, governmental, educational, and social service organizations. Prerequisite: COM 200, COM 449.

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

COM 455 International Telecommunications
3 hrs.
This course is designed to provide the student with an overview of the essential regulatory and policy issues governing the field of international telecommunications. Special attention is given to the major regulatory agencies and economic players responsible for the formation of telecommunications policy at the international level.

COM 456 Broadcast/Cable Programming
3 hrs.
This course examines the strategies of selecting, purchasing, and scheduling broadcast and cable programming on the local and network levels. 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. $10 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. $10 lab fee. Prerequisite: Consent of instructor.

COM 470 Communication, Social Issues and Change
3 hrs.
A study and practical application of communication and rhetorical methodology in contemporary social problems.

COM 472 Nonverbal Communication
3 hrs.
The course examines theory and research in the nature and function of nonverbal message systems. Topics include: the role of nonverbal communication in the developmental stages of humans; individual differences in ability to interpret messages; the relationship of nonverbal communication to the concept of culture; extension of a person such as space, clothing, possessions; and specific messages related to the face and body.

COM 474 Intercultural Communication
3 hrs.
An examination of the factors contributing to effective communication in an intercultural context. The course focuses on such topics as ethnocentrism, cultural perceptions, values and beliefs, language and meaning, and nonverbal factors. Communication systems of selected cultures are described and analyzed.

COM 475 Family Communication
3 hrs.
Examines the current literature pertaining to holistic systems, power influences, and satisfactory patterns of family communication. Students analyze family interactions and identify satisfactory patterns of marital family communication.

COM 477 Communication Ethics: Honesty and Deception
3 hrs.
Principles and perspective of ethical speech communication are studied and applied to a variety of private and public communication situations. The impact of honest versus deceptive communication on the individual and society is evaluated.

COM 479 Female/Male Interaction
3 hrs.
Examines the variable of gender as it influences communication between women and men. Topics include female-male stereotypes, interpersonal attraction, differences in female-male verbal and nonverbal codes, relational dialogues and patterns, and female-male interaction on the job.

COM 482 Communication Processes in the Organization
3 hrs.
This course is a systematic study of the communication processes in organizations at the individual, group, and organization-wide levels. Students will learn strategic communication planning, including methods of organizing and evaluating communication, identifying and solving communication problems and applying organizational communication skills in decision-making. This course meets the University upper-level writing-intensive requirement. Prerequisites: COM 170, COM 200.

COM 483 Interviewing
3 hrs.
Theories and principles of planning, conducting, and evaluating interviews are studied and applied to specific interview types, including selection, performance appraisal, survey, and journalistic interviews. Emphasis is placed on the perspective of the interviewer rather than interviewee.

COM 484 Health Communication
3 hrs.
Studies concepts and theories relevant to the maintenance and enhancement of effective communication in health care settings. Emphasis is given to the study and application of communication theories to the transactions which occur among health professionals, and between professionals and clients/patients.

COM 499 Internship
1-3 hrs.
This internship for academic credit is available only to those students who meet departmental requirements of prerequisite courses and grade point average. Specific requirements for various types of internships are described in the departmental undergraduate handbook, available in 300 Sprau or 2232 Brown Hall, or from an undergraduate advisor.

Prerequisites applicable to all 500-level courses in Communication include junior or senior status, or consent of advisor and/or instructor.

COM 505 Special Topics in Communication
1-3 hrs.
Advanced group study of special topics in communication education, interpersonal and organizational communication, mass communication, oral interpretation, and film. Many of these special courses are organized in response to special needs or interests of students on campus, in the community and in the region. Some topics are announced in the Schedule of Classes, some are added during the semester. Further information and a full listing of topics may be obtained from the Department office, 301 Sprau Tower. Six hours of COM 305 and COM 505 approved by an advisor may be accumulated as credits toward a major or minor in communication.

COM 541 Telecommunications Law and Policy
3 hrs.
Provides an overview of the essential regulatory and policy issues governing the field of telecommunications. Special attention is given to such topics as libel, privacy, access and right to reply, and copyright. A case study approach is used for the purpose of understanding legal precedent. Prerequisite: Junior or senior standing and COM 200, or graduate standing.

COM 548 Telecommunication Management
3 hrs.
The course examines broadcasting, telephone, cable, and other new communication technologies, with a primary emphasis on principles of telecommunication management, economics, and policy. The course is supplemented with a series of case studies and discussions pertaining to select management issues. Prerequisite: Junior or senior standing, COM 200 and COM 240, or graduate standing.

COM 551 Methods of Media Analysis
3 hrs.
An investigation of the approaches to media analysis (auterist, intentionalist, sociological, structural, historical, ideological).
COMPARATIVE RELIGION

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

Religion courses are designed to give students (1) an understanding of the nature and role of religion in human societies, both past and present, both non-Western and Western; (2) a grasp of the various methods used by scholars to describe and explain religion, to assess achievements of these methods, and to develop new methods for increasing their knowledge of religious thought and practice; and (3) an opportunity for raising questions about the present and future significance of religious thought and practice.

Many courses in the department are approved for General Education, and students can extend their general education to include knowledge of religious thought and practice and to relate their knowledge of religion to their knowledge derived from other disciplines in the University.

The departmental major and minors are a good preparation for graduate study in religion, for the teaching of the academic study of religion in the public schools, and for a vocation associated with religion.

Recognizing the growing demand for graduates with cross-cultural experiences and second language abilities, the Department of Comparative Religion strongly encourages students majoring and minoring in Comparative Religion to participate in Western's semester or year long study abroad program. Interested students should contact the chairperson of Comparative Religion and the Office of International Affairs as early as possible upon their arrival at Western Michigan University.

Baccalaureate Writing Requirement

Students who have chosen the Religion major will satisfy the Baccalaureate Writing Requirement by successfully completing REL 300 Writing About Religion.

Requirements for Majors and Minors

A major in religion consists of a minimum of 28 hours and includes REL 100 (Religions of the World) and REL 200 (Introduction to Religion), one course in the field of Historical Studies, and two courses from the remaining three fields (Constructive Studies, Methodological Studies, Comparative Studies). Two of these courses may be at the 400/500 level.

A minor in religion consists of a minimum of 16 hours and includes REL 100 (Religions of the World) and REL 200 (Introduction to Religion). One course is recommended in the field of Historical Studies; the remaining course should be taken in any of the remaining fields.

Courses By Topic

INTRODUCTORY STUDIES

100 Religions of the World
200 Introduction to Religion

HISTORICAL STUDIES

302 Religion in the Indian Tradition
303 Chinese Religion
304 African Religions
305 The Christian Tradition
306 The Jewish Tradition
307 The Islamic Tradition
308 Japanese Religion
500 Historical Studies in Religion

COMPARATIVE STUDIES IN RELIGION

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

METHODOLOGICAL STUDIES IN RELIGION

320 The Philosophy of Religion
323 Religion and Revolution
324 Psychological Elements in Religion
520 Methodological Studies in Religion
521 The Teaching of Religion in the Public School

CONSTRUCTIVE STUDIES IN RELIGION

332 Religion and Social Ethics
334 Religion in Modern Society
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 “Academic Policies and Procedures” earlier in this catalog.

REL 100 Religions of the World

4 hrs.

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). The course studies how these religious traditions conceive of gods and world order, founders and saviors, religious experience and practice, and religious communities. The course will pay attention to the contemporary status and significance of these themes.

REL 200 Introduction to Religion

4 hrs.

An introduction to the study of religion intended to be universal in scope, theoretical and scientific in intent, and humanistic in orientation, of the nature and history of religion wherever it may be found, whatever its context, no matter what its forms, and attempting to raise whatever questions are necessary to illuminate its character. This will involve attention to more than one religious tradition, a discussion of the problems of definition, theory and method, an acknowledgement of the inter-disciplinary aspects of much of the inquiry, and an examination of the consequences of this inquiry for problems of self-understanding in the context of western culture in general, and American society in particular.

REL 300 Writing About Religion

3 hrs.

This course enhances writing skills in the context of reading and discussing selected materials on religion. Emphasis is upon the process of writing, with writing assignments in class and outside class. Reading selections focus upon issues of contemporary interest. Required of all religion majors.
REL 302 Religion in the Indian Tradition 4 hrs.
This course draws its materials primarily from the great religious traditions native to India—i.e., Brahmanism, Buddhism, Jainism, Sikhism, and Hinduism. It is concerned primarily with defining and exemplifying these traditions; the problems that are perceived to be central to human life and the resources assumed to be available for such problems' solution. To clarify problems, it examines social and political contexts in which various traditions have arisen. To exemplify solutions, it offers samples from religious literature, art, architecture, music, ritual, and spiritual discipline.

REL 303 Chinese Religion 4 hrs.
Religious life in China is characterized by an impressive variety of religious combined with a striking commonality of thought and practices of the past. The course will consider religious and philosophical Confucianism and Taoism, Buddhism, and how these religious traditions have grown into traditional and popular religion in China and even amalgamated into Chinese communism. The overall aim of the course will be to show what Chinese religion means to an individual growing up Chinese so that students of the course may develop a grasp of the expectations of life, society, government, and behavior that are handed down from generation to generation in China.

REL 304 African Religions 4 hrs.
This course is designed to introduce the student to the complexity and variety of the religions of Africa. This is done by focusing on the myriad religious ideas (of the gods, of ancestors, of persons, of origins, of death, of authority and status), practices (initiation, divination, sorcery), institutions which have emerged in the long history of Africa. The course pays particular attention to the results of colonialism on indigenous religions as well as to the emergence of new religious movements.

REL 305 The Christian Tradition 4 hrs.
This course draws its materials primarily from the great religious traditions within Christianity—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.

REL 306 The Jewish Tradition 4 hrs.
This course traces the history and development of Judaism from its roots in the Ancient Near East to the present, and its role in the shaping of Western consciousness. Particular attention is given to the periods of radical social, political and cultural change in Jewish history and hence to the critical problems of Jewish identity. An analysis of Jewish writings, customs, and institutions taken from different periods of Jewish history reveals that Jewish people have discovered and expressed their identity within a religious framework that includes myths and rituals, festivals, and holy days. Celebration of the past and anticipation of the future, as well as social movements and political revolutions.

REL 307 The Islamic Tradition 4 hrs.
A study of the most important factors involved in the development of both the Islamic religious tradition and Islamic civilization. The Pre-Islamic background, the life of Mohammed, the Qur'an, geographical expansion of the Muslim Community, Islamic law, mysticism, politics, philosophy, science, and contemporary Islamic movements are the major topics for examination.

REL 308 Japanese Religion 4 hrs.
A study of the historical continuity and overall unity in the Japanese religious tradition. The major organized religions of Shinto and Japanese Buddhism, and also the influence of Taoism, Confucianism, and Christianity are discussed. Also taken up are the informal religious movements of "ancestor worship," family religion, and state religion. An attempt is made to determine the meaning of religion in Japanese culture.

REL 311 Myth and Ritual 4 hrs.
Eric Dardel, an anthropologist, has written: "Myth says with utmost seriousness something that is of utmost importance." In this course an attempt will be made to discover just what is the most important thing, and how it is actualized in different rituals. Myths and rituals will be taken from a variety of historical traditions in order to reflect the cultural milieu of the communities whose lives are governed by them. Special problems to be considered will be the relationship between myth and cult, the problem of time and myth, the logic of mythic forms, etc.

REL 313 Religion in America 4 hrs.
An introduction to the full range of religious phenomena in today's North American culture and societies. The course attempts to isolate the specifically religious elements in concepts, values, and institutions and relate them to other elements of the socio-cultural fabric. While attention is directed to historical background, the rise, institutionalization and decline of movements, developing traditions, changing concepts, etc., the emphasis of the course is on contemporary experience and special attention is given to content analysis of the mass media such as TV, radio, newspapers and magazines, advertising, popular music, comics, films, etc.

REL 320 The Philosophy of Religion 4 hrs.
An examination of the place of religion in human experience with special attention to the nature of religious language, the role and structure of religious concepts, the relation between religion and theology, and the logic of religious symbols.

REL 323 Religion and Revolution 4 hrs.
This course will be a study of different styles of religious and secular social ethics and the creative ideas, problems, and attitudes toward the social world they contain. The course will discuss a variety of special contemporary socio-ethical problems. The new sexual morality, abortion, divorce, guaranteed income, thermonuclear and chemical warfare, artificial insemination, euthanasia, and drug addiction. Particular attention will be paid to the role of social ethics relate themselves to fundamental changes in contemporary marriage and family life as well as in the economic, political, and cultural spheres.

REL 334 Religion in Modern Society 4 hrs.
Whereas a major focus of the systematic study of religion is upon religious traditions, or aspects of them, it is important that attention 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 the questions raised by the various contexts in which religion occurs.

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 methodology 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 reproduction of religious theory and social and political practice.

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 subject. In the central interest of the course is with religious propensities, feelings, impulses, passions, attitudes, motivations, values, ideas, prejudices. Critical questions such as the following will be asked: What is the function of religious faith for the nervous stability, mental health and 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?
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 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; the Problems of its Constitutionality, the Organization, Selection and Use of Materials Involved in the Teaching of Religion in the Modern World; Christian Theology to 1500; Renaissance and Reformation Theology; Mystical Dimensions of Islam.

COMPUTER SCIENCE

Donald Nelson, Chair
Fred Boats, Director of Graduate Programs
Elise de Doncker
Ajay Gupta
Donna Kamiński
John Kapenga
Mark Kerdzietz, Director of Undergraduate Programs
Dyonisos Kountanis
Dina Matzkin
Ben Pinkowski
Naveed Sherwani
Robert Trenary
Kenneth Williams

Computer Science is 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 3090 Friedmann Hall (phone 387-5645). This should be done as soon as possible—certainly within the second semester of enrollment in computer science classes. Prerequisites for 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.

The minors in computer science are appropriate for students in a variety of fields. Graduates with computing skills 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 enrollment is denied for whatever reason are responsible for processing drop slips with the Registration Office.

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen either of the majors offered in Computer Science will satisfy the Baccalaureate Writing Requirement by successfully completing CS 460 Software Systems Development.

MAJORS

Computer Science—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.)

CS 111 Computer Science I 3
CS 112 Computer Science II 3
CS 223 Computer Organization and Assembly Language 3
CS 224 Systems Programming Concepts 3
CS 331 Data and File Structures 3
CS 460 Software Systems Development 3
CS 485 Programming Languages 3
CS 498 The Computer Science Profession 1
CS 531 Design and Analysis of Algorithms 3
CS 554 Operating Systems 3
CS 580 Theory of Computation 3
Three approved non-language electives (See advisor) 9

REQUIRED MATHEMATICS COURSES (19 hrs.)

MATH 122 Calculus I 4
MATH 123 Calculus II 4
MATH 145 Discrete Mathematical Structures 3
MATH 230 Elementary Linear Algebra 4
MATH 364 Statistical Methods 4

REQUIRED PHYSICS COURSES (10 hrs.)

PHYS 205 Mechanics and Heat 4
PHYS 206 Mechanics and Heat Laboratory 1
PHYS 207 Electricity and Light 4
PHYS 208 Electricity and Light Laboratory 1

REQUIRED ELECTRICAL ENGINEERING COURSES (6 hrs.)

EE 250 Digital Logic I 3
EE 357 Computer Architecture 3

REQUIRED SCIENCE COURSES

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

REQUIRED COMMUNICATIONS AND ETHICS COURSES (7 hrs.)

COM 104 Public Speaking 3
PHIL 410 Professional Ethics 4

APPROVED ELECTIVES

Approved electives for the Computer Science—Theory and Analysis major can be: CS 518, CS 520, CS 525, CS 526, CS 527, CS 530, CS 543, CS 595, CS 598, CS 592, CS 595. Electives must be approved in advance by the student’s advisor.

GENERAL EDUCATION

In addition to meeting general education requirements of the University and the College of Arts and Sciences, students must exhibit a minimum of 23 hours of course work in the social sciences and humanities (excluding COM 104 and PHIL 410). See advisor.

Computer Science—General Option

This major option is designed to provide the student with the fundamental concepts of computer science and a broader selection of electives in liberal arts and other fields. The
major requires a minor in mathematics. Students selecting this option are encouraged to consider completion of a second minor or perhaps a second major in some other field of interest.

**COMPUTER SCIENCE COURSES (36 hrs.)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</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></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</td>
<td></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-language electives (see advisor) 6

**REQUIRED MATHEMATICS COURSES (19 hrs.)**

<table>
<thead>
<tr>
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<th>Course Name</th>
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</thead>
<tbody>
<tr>
<td>MATH 122</td>
<td>Calculus I</td>
<td>4</td>
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<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>Probability and Statistical Methods</td>
<td>4</td>
</tr>
</tbody>
</table>

**REQUIRED ELECTRICAL ENGINEERING COURSE (3 hrs.)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EE 250</td>
<td>Digital Logic I</td>
<td>3</td>
</tr>
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</table>

Approved electives can be CS 495, 518, 520, 525, 526, 527, 530, 531, 543, 555, 580, 581, 582, 595, MATH 440, 506, 507, 574, PHIL 520. Electives must be approved in advance by the student’s advisor.

**Minors**

**General Option**

**COMPUTER SCIENCE COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CS 111</td>
<td>Computer Science I</td>
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<tr>
<td>CS 112</td>
<td>Computer Science II</td>
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</tr>
<tr>
<td>CS 201</td>
<td>Programming in FORTRAN</td>
<td>2</td>
</tr>
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<td>Programming in COBOL</td>
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</tr>
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<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 CS electives (may be a language course) (see advisor) 5-6

**REQUIRED MATHEMATICS COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</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>
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</table>

**Sciences Option**

**COMPUTER SCIENCE COURSES**

<table>
<thead>
<tr>
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<td>CS 112</td>
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<tr>
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<td>Programming in FORTRAN</td>
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<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 CS electives (see advisor), only one of which may be a language course 5-6

**REQUIRED MATHEMATICS COURSES**

<table>
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<tr>
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<th>Course Name</th>
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<tr>
<td>MATH 123</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 364</td>
<td>Elementary Linear Algebra</td>
<td></td>
</tr>
<tr>
<td>MATH 374</td>
<td>Introduction to Linear Algebra</td>
<td></td>
</tr>
<tr>
<td>MATH 376</td>
<td>Differential Equations</td>
<td></td>
</tr>
</tbody>
</table>

**Computer Science Courses (CS)**

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

**CS 105 Introduction to Computers**

This course, which consists of one hour of lecture and two hours of laboratory/recitation each week, provides an introduction to computers and their applications. Topics include computer terminology and social and ethical issues of computing. Students will be introduced to a variety of computer applications which may include spreadsheets, databases, word processing or an introduction to the BASIC programming language. Recitation and laboratory sections may vary according to the applications covered. Students will also be introduced to the campus network and system utilities available there. A student may not receive credit for both BIS 102 and CS 105. This course may not be used in computer science major or minor programs.

**CS 106 BASIC for Engineers**

1 hr.

This course provides an introduction to programming in the BASIC language and an introduction to the WMU computer system. It is designed primarily to give students in certain engineering programs enough background so they can use BASIC in further coursework. Prerequisite: 1½ years of high school algebra or MATH 111.

**CS 110 Introduction to Computer Programming Using BASIC**

3 hrs.

This course is designed for those with little previous programming experience beyond computer literacy. The emphasis is on non-numerical problem solving. Students learn about system commands necessary to create and execute computer programs written in a high-level programming language and are introduced to problem solving, program design, coding, and debugging using the BASIC programming language. Programming assignments are given to build technical skills. These general language concepts will be discussed: program syntax, declaration and use, functions with parameters. This course may not be used for a major or minor in computer science nor can it be taken 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 editors and basic programming concepts. Credit will not be given for both CS 201 and CS 206. Prerequisites: CS 110 or CS 111 and one and one-half years of high school algebra or MATH 111.

**CS 203 Programming in C**

2 hrs.

Details of the C computer programming language are presented. Students obtain practice by writing programs in C. The course assumes knowledge of a computer system, editors, and programming concepts. Prerequisite: Substantial programming in a structured high-level language.

**CS 202 Programming in COBOL**

2 hrs.

Details of the COBOL computer programming language are presented. Students obtain practice by writing programs in the language. This course assumes knowledge of the use of the computer system and editor and basic programming concepts. Prerequisite: CS 110 or CS 111 and one and one-half years of high school algebra or MATH 111.

**CS 223 Computer Organization and Assembly Language**

3 hrs.

This course introduces concepts of computer architecture and assembly language. Students obtain practice by writing programs in C. The course assumes knowledge of a computer system, editors, and programming concepts. Prerequisite: Substantial programming in a structured high-level language.

**CS 224 System Programming Concepts**

3 hrs.

Topics include: program development tools, basic testing, timing, profiling and benchmarking, characteristics of physical devices, memory management, device drivers, pseudo-devices, file structures, file I/O (both buffered and un-buffered), processes, shells, inter-process communications, signals, exceptions, pipes, sockets, shared memory and file and record locking. All topics are viewed in a UNIX system programming perspective. Prerequisite: CS 112 and CS 223.
CS 299 Professional Concerns for Computer Scientists I
2 hr.
This writing-intensive course explains the differences between computer scientists and how it affects the world around them. It teaches about the use of research tools such as library and electronic tools. Emphasis is placed on professional communication skills. Professionalism and professional societies are discussed. Students are required to become involved with the profession outside of class.

CS 302 Teaching of Computer Science
3 hrs.
This course deals with the problems and current trends of teaching high school computer science. The main emphasis is on effective methods of instruction. Practical methods of selection, organization, and maintenance of hardware and software are also considered. Topics such as computer literacy, the computer as a problem-solving tool, issues in computing, and related computer applications will be considered and discussed.

CS 306 Introductory Programming: FORTRAN
2 hrs.
An introduction to computer programming using the FORTRAN language (FORMula TRANslation). Prerequisite: One and one-half years of high school algebra or MATH 111. Credit will not be given for both CS 301 and CS 306. This course will not be used towards a major or minor in Computer Science.

CS 331 Data and File Structures
3 hrs.
This course focuses on the study of internal and external data structures and algorithms with an ongoing emphasis on the application of software engineering principles. Trees, graphs, and the basic algorithms for creating, manipulating, and using them will be studied. Various types of hash and indexed random access file structures will be discussed and implemented. B-trees and external file sorting will be introduced. Internal and external data and file organizations and algorithms will be compared and contrasted. 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 342 Analysis of File Systems and Structures
3 hrs.
Programming projects will be assigned to give students experience in systems programming and file processing. Topics will include: records, file blocking, data base management systems, characteristics of storage media, algorithms to process direct access devices, inverted lists, multilists, indexed arrays, and data base structures. Prerequisite: CS 331.

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.

CS 443 Data Base Management Systems (DBMS)
3 hrs.
This course presents the fundamental concepts and practices of data base management systems. The data base environment and administration are defined along with the roles of the data base administrator and the data base user. 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 develop application programs which use the data base system. Not for Computer Science Majors (except Teaching major) Prerequisite: CS 202 or BIS 362. A student may receive credit for both CS 443 and CS 543.

CS 460 Software Systems Development
3 hrs.
This is a projects course in software engineering and implementation 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. The course meets the University baccalaureate-level writing requirement. Prerequisite: CS 331.

CS 485 Programming Languages
3 hrs.
Properties of various programming languages including scope of declarations, storage allocation, control structures and formal parameters will be studied, as well as runtime representation of programs and data structures. A study of compilers and interpreters will be made. This will include loading, execution, storage allocation, symbol tables, lexical scan, parsing and object code generation. The relation of automata to formal languages and grammars will be discussed. Prerequisites: CS 331.

CS 495 Topics in Computer and Information Science
3 hrs.
The content of this course varies. It is intended to introduce the student to significant topics which are not normally offered as separate courses. This course may be taken more than once with the approval of the student’s advisor. Prerequisite: Approval of Department.

CS 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.
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 mode bidirectional associative memories, and adaptive resonance models. The student will use neural net software to experiment with standard models to develop an application for a project. Prerequisite: CS 331. An introductory statistics course is recommended.

CS 531 Design and Analysis of Algorithms 3 hrs.
A continuation of the study of data structures and algorithms. It provides a theoretical foundation in designing algorithms. The focus is on the advanced analysis of algorithms and on how the selections of 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 534 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 on relational data models will be emphasized. Query languages, query optimization, security, integrity, and concurrency protocols will also be covered. A student may receive credit for both CS 443 and CS 543. Prerequisite: CS 331.

CS 544 Software Systems Development 3 hrs.
Advanced computer programming techniques used in the specification, design and implementation of large software systems. Testing and maintenance of software systems. Modular programming, top down structured design, composite design, and structured analysis and design. Emphasis is placed on the solution of large software system problems using a team approach. Prerequisite: CS 331.

CS 554 Operating Systems 3 hrs.
The internal and external views of computer operating systems are presented. A historical survey of the development and growth of operating systems is given. Fundamentals of systems and system design are stressed. Basic concepts and terminology are emphasized. Processes, communications and synchronization, deadlock, scheduling, shared resources, resource allocation, and deadlocks, memory management, files, management, and protection are discussed. Applications to real systems are investigated to motivate the ideas presented. Students build or run simulations and modify the internals of a working operating system. Prerequisites: CS 224 and CS 331.

CS 555 Computer Networks and Distributed Systems 3 hrs.
The design and evaluation of computer networks using current hardware and software are explained. Various types of computer buses, local area networks, and long haul networks are defined. Case studies of popular networks are presented. Layered network models are studied. There is lab work with local area and long haul networks. Prerequisite: CS 224 and CS 331.

CS 580 Theory of Computation 3 hrs.
Provides an introduction to the theory of computation in the framework of programming languages. Basic definitions and concepts dealing with algorithms, sets, relations, functions, induction operations on functions and cardinality are covered. Primitive and partial recursive functions are defined and their properties treated with application to coding techniques. The Chomsky hierarchy of languages, including recursive and recursively enumerable sets and their acceptors, is introduced. Students are assigned theoretical as well as implementation oriented problems. Prerequisites: CS 331 and MATH 145.

CS 581 Compiler Design and Implementation 3 hrs.
Students are introduced to major aspects of compiler design. These include lexical analysis, parsing, and translation. Each student will implement a small compiler using modern compiler writing tools. Prerequisite: CS 485 or CS 580.

CS 582 Artificial Intelligence 3 hrs.
This course provides an overview of artificial intelligence including basic A. I. techniques and concepts, e.g., production systems, heuristic searching techniques, knowledge representation, predicate calculus, and pattern recognition. It introduces A. I. applications such as expert systems, game playing, expert systems, vision, natural language processing, and learning. Prerequisite: CS 331.

CS 595 Advanced Topics in Computer and Information Science 1-3 hrs.
The content of this course varies. It is intended to introduce the student to advanced topics which are normally offered as separate courses. The course may be taken more than once with approval of the student’s advisor. Prerequisite: Approval of Department.

CS 599 Independent Study in Computer Science 1-3 hrs.
Advanced students with good scholastic records may elect to pursue independently the study of some topic of special interest. Topics are chosen and arrangements are made to suit the needs of each particular student. Prerequisite: Written approval of instructor.

CRIMINAL JUSTICE PROGRAM
See Sociology Department in the College of Arts and Sciences

ECONOMICS
Werner Sichel, Chair
Donald Alexander
Eskander Alvi
Sisay Asefa
Nancy S. Barrett
Philip Caruso
Wayland Gardner
Bassam E. Harik
Salim E. Harik
Matthew L. Higgins
Emily Hofman
Kevin Hollenbeck
Susan Housenian
Wei-Chiao Huang
Timothy L. Hunt
William S. Kern
Jean Kimmel
Donald Meyer
Jon Neill
Christopher O'Leary
Susan Pozo
Paul Thistle
Evert Vanderheide
Mark 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 preprofessional training for business, law, journalism, public administration, foreign service, teaching, and social work; to prepare for graduate work in economics; and/or to gain an understanding of the economy as an essential part of the modern world. Several courses are designed to contribute to General Education by providing basic understanding of the economy.

A career as a professional economist typically requires graduate study and a master’s or doctoral degree in economics. Economics is a prestigious major or minor that is appreciated by prospective employers who recognize it as a demanding curriculum. A minor in economics consists of a minimum of 15 hours in the department. A major in economics consists of a minimum of 30 hours of credit in the department. The following are required courses for majors: Principles of Microeconomics (201), Principles of Macroeconomics (202), Introductory Economic Statistics (402), Intermediate Microeconomics (403), Intermediate Macroeconomics (406), and Econometrics (409). In addition, majors should choose the remainder of their courses in consultation with the undergraduate advisor.

A major in economics who intends to do graduate work in economics is advised to take additional courses in mathematics including calculus.

The undergraduate advisor of the department will assist students in selecting courses suited to their needs in fulfilling the minor and major requirements.

The honors program of the Department of Economics is designed for the student who possesses special talents and abilities and who is particularly interested in exploiting them to the fullest extent. Students wishing to participate in this program should consult the Chair of the department.
GROUP SOCIAL SCIENCE
Students in the secondary education curriculum who major in economics must also complete a minor in group social science and HIST 490 or GEOG 460. Refer to the "Interdisciplinary Programs" section of this catalog for a description of the minor requirements.

Baccalaureate Writing Requirement
Students who have chosen the Economics major will satisfy the Baccalaureate Writing Requirement by successfully completing ECON 484 Comparative Economic Systems.

Courses By Topic

PRINCIPLES AND GENERAL THEORY

107 Contemporary Domestic Economic Issues
108 Contemporary International Economic Issues
109 History of Modern Economic Society
201 Principles of Microeconomics
202 Principles of Macroeconomics
400 Managerial Economics
402 Introductory Economic Statistics
403 Intermediate Microeconomics
406 Intermediate Macroeconomics
409 Econometrics
501 Studies in Economic Problems: Variable Topics
504 Introduction to Mathematical Economics

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
387 Studies in Asian 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 "Academic Policies and Procedures" earlier in this catalog.

ECON 107 Contemporary Domestic Economic Issues
3 hrs. Fall, Winter
A nontechnical examination of contemporary economic issues in the United States, such as unemployment, inflation, the environment, crime, education, health care and taxation.

ECON 108 Contemporary International Economic Issues
3 hrs. Fall, Winter
A nontechnical economic approach to understanding important contemporary international issues and problems. This course focuses on topics such as international trade, finance, populations, migration, agriculture, the environment, and developing and transitional economies. This course cannot be used to satisfy major or minor program requirements in Economics.

ECON 109 History of Modern Economic Society
3 hrs. Fall and/or Winter
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 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 or Winter
This course studies the role of women in the economy, both in the labor force and the household, and women's economic status. Topics covered include gender discrimination, the feminization of poverty, and the effects of public policies on the economic status of women. Prerequisites: ECON 107 and 201 or 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 insurance, and pricing and output decisions are analyzed. Various policy questions are also raised, and the pros and cons of alternative policies are presented. Finally, the role of planning in the reorganization and delivery of medical care services is discussed. Prerequisites: ECON 201 and 202, or permission of instructor.

ECON 319 Environmental Economics
3 hrs. Fall, Winter, Spring and/or Summer
The study of economic aspects of environmental problems. Benefit-cost analysis is introduced and applied to problems in the management of air, water and other natural resources. Environmental problems of selected industries—including transportation and electric power—economic growth, population and why government policy are analyzed. Prerequisite: ECON 201.

ECON 320 Money and Banking
3 hrs. Fall, Winter, Spring and/or Summer
An analysis of the role of money and its impact on the economy—on inflation, unemployment, interest rates, income, and foreign exchange. The operations and relationships of commercial banks and the Federal Reserve are examined. Prerequisites: ECON 201 and ECON 202.

ECON 324 Public Finance
3 hrs. Fall, Winter, Spring or Summer
Practices, effects, and policy issues in federal government budgeting, spending, taxation, borrowing and debt, with particular attention to individual and corporate income taxation. Prerequisites: ECON 201 and 202.

ECON 345 Business, Government, and Society
3 hrs. Fall, Winter, Spring or Summer
This course examines the interrelationships among business, government and society. The course attempts to provide insights into how, when and why government policy towards business firms can either benefit or harm society. Topics covered include antitrust policies, economic regulation and social regulation. Prerequisite: ECON 201.

ECON 380 International Economics
3 hrs. Fall, Winter, Spring and/or Summer
A study of the fundamentals of international trade and related problems, with special reference to the implications of the international economic policies of the United States both for the economy and for the firm. Prerequisites: ECON 201 and ECON 202.

ECON 387 Studies in Asian Economies
3 hrs. Fall and/or Winter
This course concentrates on the study of the Japanese, Chinese, and Indian economic systems. These models are then applied as a basis of comparison to other Asian economies. 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 optimization models. Prerequisites: ECON 201 and 202, MATH 116, and MATH 216, or equivalent.

ECON 402 Introductory Economic Statistics
3 hrs. Fall
An introduction to elementary statistical methods used in the analysis of economic data. Topics include descriptive statistics, probability theory, hypothesis testing and simple regression analysis. Prerequisites: ECON 201 and ECON 202, MATH 118 or equivalent.
This course examines the development and financial relationships. Prerequisite: 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. 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 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 507 Monetary Theory and Policy 3 hrs. Fall or 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.
307 Literature In Our Lives, 308 Quest for World Literature, 313 Asian Literature, 314 African Literature. The English Bible as literature, 315 The English Bible as literature may be appropriate to the interests and background of the student. Many of these English courses may be used to satisfy General Education requirements. English advisors will help any student select courses in writing, English language, or literature which will be useful in General Education or as background for a career.

Advisors' offices are on the sixth floor of Sprau Tower (phone 387-2575).

Majors and Minors

1. The requirements for the English majors (listed below) allow students some choices in their courses of study. As soon as students decide to major in English they should confer with one of the English advisors, who can help plan the major. All major programs must be approved by an English advisor. Minor slips are required for all minors. Students minoring in English should see the advisor as soon as possible after they begin work on the minor.

2. A minimum of 34 hours is required for a major in English, and 20 hours are required for a minor. 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.

4. Foreign Language Requirement: English majors must have at least one college year of a foreign language or its equivalent (at least two years of the same language in high school). The department recommends as much additional work in the language as students can manage. Students planning to do graduate work beyond the M.A. ought to 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 in English courses from other colleges. 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.

Baccalaureate Writing Requirement

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

- ENGL 362 Literary Journalism
- ENGL 371 Structures of Modern English
- ENGL 372 Development of Modern English
- ENGL 415 Practical Literary Criticism
- ENGL 440 Studies in Verse
- ENGL 442 Studies in Drama
- ENGL 444 Studies in the Novel
- ENGL 452 Shakespeare Seminar
- ENGL 472 American Dialects

Secondary Education Curriculum

34 hours plus 4-hour Professional Component

1. Required Entry-Level Course (4 hrs.)
   - ENGL 110 Literary Interpretation

2. Required Courses (24-26 hrs.)
   A. One of the following British Literature courses:
      - ENGL 252 Shakespeare
      - ENGL 330 British Literature I
      - ENGL 331 British Literature II
   B. One of the following American Literature courses:
      - ENGL 320 American Literature I
      - ENGL 321 American Literature II
   C. At least one additional course from those listed under A and B.
   D. One of the following English Language courses:
      - ENGL 371 Structures of Modern English
      - ENGL 372 Development of Modern English
      - ENGL 472 American Dialects
      - ENGL 574 Grammar for Teachers
   E. One literature course with a multi-cultural focus:
      - ENGL 223 Black American Literature
   F. One of the following courses at the 400 level:
      - ENGL 415 Practical Literary Criticism
      - ENGL 440 Studies in Verse
      - ENGL 442 Studies in Drama
      - ENGL 444 Studies in the Novel
   G. Additional Requirement
      - ENGL 479 Writing in the Secondary School

3. Elective Courses
   At least two additional English Department courses at the 200, 300, 400, or 500 levels to complete the major. It is recommended that one of these courses emphasize development of writing skills. The following courses cannot be used for this purpose:
   - ENGL 100, 105, 107, 111, 112, 307, 308, 311 or 480.

4. Capstone Experience
   A capstone experience for this program will be specified by September 1995 after approval by appropriate departmental and college committees and the department.

5. Professional Component (4 hrs.)
   ENGL 480 Teaching of Literature in the Secondary Schools, is required for certification but does not count toward the required minimum of 34 credit hours in English required for the major. ED 302, Teaching and Learning—Secondary, is a prerequisite for this course.

6. Foreign Language Requirement
   Minimum of two semesters of a modern or classical foreign language at the college level, or two years of such study at the high school level. One year at the high school level coupled with the second semester of the same language at the college level is also satisfactory.

New Majors

Arts and Sciences Curriculum

34 hours

1. Required Entry-Level Course (4 hrs.)
   - ENGL 110 Literary Interpretation

2. Suggested requirements:
   A. ENGL 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
      - ENGL 223 Black American Literature
      - ENGL 252 Shakespeare
      - ENGL 315 The English Bible as Literature
   B. Required Courses (27-28 hrs.)
      A. Three of the following four:
         - ENGL 320 American Literature I
         - ENGL 321 American Literature II
         - ENGL 330 British Literature I
         - ENGL 331 British Literature II
      B. One of the following three:
         - ENGL 371 Structures of Modern English
         - ENGL 372 Development of Modern English
         - ENGL 472 American Dialects
      C. Two courses at the 400 level, including at least one of the following four.
         Students who use ENGL 472 to satisfy requirement 3.B. may not use that course to satisfy this requirement.
         - ENGL 415 Practical Literary Criticism
         - ENGL 440 Studies in Verse
         - ENGL 442 Studies in Drama
         - ENGL 444 Studies in the Novel
      D. At least two of the following courses.
         Students who use ENGL 452 to satisfy requirement 3.C. may not use that course to satisfy this requirement.
         - ENGL 452 Shakespeare Seminar
         - ENGL 522 Studies in American Literature
   E. One literature course with a multi-cultural focus:
      - ENGL 223 Black American Literature
   F. One of the following courses at the 400 level:
      - ENGL 415 Practical Literary Criticism
      - ENGL 440 Studies in Verse
      - ENGL 442 Studies in Drama
      - ENGL 444 Studies in the Novel
   G. Additional Requirement
      - ENGL 479 Writing in the Secondary School

3. Elective Courses
   At least one additional English Department course at the 200, 300, 400, or 500 levels to complete the major. It is recommended that one of these courses emphasize development of writing skills. The following courses cannot be used for this purpose:
   - ENGL 100, 105, 107, 111, 112, 307, 308, 311 or 480.

5. Capstone Experience
   A capstone experience for this program will be specified by September 1995 after approval by appropriate departmental and college committees and the department.

5. Professional Component (4 hrs.)
   ENGL 480 Teaching of Literature in the Secondary Schools, is required for certification but does not count toward the required minimum of 34 credit hours in English required for the major. ED 302, Teaching and Learning—Secondary, is a prerequisite for this course.

6. Foreign Language Requirement
   Minimum of two semesters of a modern or classical foreign language at the college level, or two years of such study at the high school level. One year at the high school level coupled with the second semester of the same language at the college level is also satisfactory.
Creative Writing Emphasis

34 hours
1. Required Entry-level Course (4 hrs.)
   ENGL 110 Literary Interpretation .............. 4
2. A. Required Writing Courses (14 hrs.)
   ENGL 266 Writing Fiction and Poetry ........... 4
   ENGL 566 Creative Writing Workshop ........... 4
   B. Plus six (6) hours of credit from the following courses.
      Any of these courses may be repeated one time for credit.
      ENGL 366 Advanced Fiction Writing ...... 3
      ENGL 367 Advanced Poetry Writing ...... 3
      ENGL 368 Playwriting ................. 3
3. Literature and English Language Courses (13-14 hrs.)
   A. Two of the following courses:
      ENGL 320 American Literature I ........... 3
      ENGL 321 American Literature II ........... 3
      ENGL 330 British Literature I ............ 3
      ENGL 331 British Literature II ............ 3
   B. One of the following courses:
      ENGL 440 Studies in Verse ................. 4
      ENGL 442 Studies in Drama ................. 4
      ENGL 444 Studies in the Novel ............. 4
   C. One additional English Department literature or English language course at the 200, 300, 400, or 500 levels.
4. Electives
   At least one additional English Department course at the 200, 300, 400, or 500 level to complete the major. The following courses cannot be used for this purpose: ENGL 100, 105, 107, 111, 112, 307, 308, 311, or 480.
5. Capstone Experience (2 hrs.)
   ENGL 495 Internship/Fieldwork
      (two semesters at 1 hr. each) ......... 2
6. Foreign Language Requirement
   Minimum of two semesters of a modern or classical foreign language at the college level, or two years of such study at the high school level. One year at the high school level coupled with the second semester of the same language at the college level is also satisfactory.

Community Journalism Emphasis

34 hours
1. Required Entry-level Course (4 hrs.)
   ENGL 110 Literary Interpretation .............. 4
2. Required Journalism Core Courses (18 hrs.)
   ENGL 264 News Writing
      (Prerequisite: grade of B or better in ENGL 105, or equivalent) ....... 4
   ENGL 265 News Editing ................. 4
   ENGL 362 Literary Journalism .............. 3
   ENGL 363 Reporting ................. 3
   ENGL 463 Reporting Community Affairs ....... 4
3. Other Requirements (9-11 hrs.)
   ENGL 320 American Literature I ........... 3
   ENGL 321 American Literature II ........... 3
   One of the following courses:
      ENGL 305 Practical Writing ............... 4
      ENGL 364 Feature and Article Writing .... 3
      ENGL 365 Reviewing for the Press ....... 3
      ENGL 462 Advanced Writing ............... 4
      ENGL 464 Professional Writing ........... 4
   COM 541 Mass Communication
      Law ............................................ 3
   COM 544 Mass Communication, News, and Public Affairs ....... 3
One additional English Department literature or English language course.
4. Electives
   At least one additional English Department course at the 200, 300, 400, or 500 level to complete the major. The following courses cannot be used for this purpose: ENGL 100, 105, 107, 111, 112, 307, 308, 311, or 480.
5. Capstone Experience (2 hrs.)
   ENGL 495 Internship/Fieldwork
      (two semesters at 1 hr. each) ......... 2
6. Foreign Language Requirement
   Minimum of two semesters of a modern or classical foreign language at the college level, or two years of such study at the high school level. One year at the high school level coupled with the second semester of the same language at the college level is also satisfactory.

Middle School/Junior High School Curriculum

34 hours
1. Required Entry-Level Course (4 hrs.)
   ENGL 110 Literary Interpretation .............. 4
2. Other Required Courses (20-24 hrs.)
   ENGL 282 Children's Literature
   OR
   ENGL 563 Multi-Cultural Literature
      for Adolescents ......................... 3-4
   AND
   ENGL 373 Reading as a Psycholinguistic Process .............. 4
   Additional Required Course
   ENGL 369 Writing in the Elementary School
   OR
   ENGL 479 Writing in the Secondary School .............. 4
One of the following courses:
   ENGL 472 American Dialects .............. 4
   ENGL 484 Multi-Cultural American Literature for Children .............. 3
   ENGL 574 Grammar for Teachers .............. 4
   ENGL 582 Studies in Children's Literature .............. 3
Two additional literature courses, at least one of which must be at the 300-level or above.
3. Electives
   At least three additional English Department courses at the 200, 300, 400, or 500 level to complete the major. The following courses cannot be used for this purpose: ENGL 100, 105, 107, 111, 112, 307, 308, 311, 375, 376, or 480.
4. Capstone Experience
   A capstone experience for this program will be specified by September 1995 after approval by appropriate departmental and college committees and the department.
5. Foreign Language Requirement
   Minimum of two semesters of a modern or classical foreign language at the college level, or two years of such study at the high school level. One year at the high school level coupled with the second semester of the same language at the college level is also satisfactory.

Minors

Arts and Sciences Curriculum

20 hours
1. Required Entry-level Course (4 hrs.)
   ENGL 110 Literary Interpretation .............. 4
2. Literature Courses (9 hrs.)
   Three courses chosen from among the following:
   ENGL 320 American Literature I ........... 3
   ENGL 321 American Literature II ........... 3
   ENGL 330 British Literature I ............ 3
   ENGL 331 British Literature II ............ 3
   ENGL 371 Structures of Modern English .... 4
   ENGL 372 Development of Modern English .... 4
   ENGL 472 American Dialects .............. 4
   B. One course chosen from the following:
      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
      ENGL 452 Shakespeare Seminar ........... 4
4. Electives
   At least one additional English Department course at the 200, 300, 400, or 500 level to complete the major. The following courses cannot be used for this purpose: ENGL 100, 105, 107, 111, 112, 307, 308, 311, or 480.
5. Capstone Experience
   A capstone experience for this program will be specified by September 1995 after approval by appropriate departmental and college committees and the department.
6. Foreign Language Requirement
   Minimum of two semesters of a modern or classical foreign language at the college level, or two years of such study at the high school level. One year at the high school level coupled with the second semester of the same language at the college level is also satisfactory.

Secondary Education Curriculum

20 hours
1. Required Entry-Level Course (4 hrs.)
   ENGL 110 Literary Interpretation .............. 4
2. Required Advanced Courses (13-15 hrs.)
   A. One of the following British Literature courses:
      ENGL 252 Shakespeare 4
      ENGL 330 British Literature I 3
      ENGL 331 British Literature II 3

   B. At least one of the American Literature survey courses, ENGL 320/321, which attend to the diversity of American culture.
      AND
   A second course which attends to cultural diversity or has a multi-cultural focus, selected from the following:
      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

   C. Required course:
      ENGL 479 Writing in the Elementary School 4

3. Electives
   • At least one additional English Department course. The following courses cannot be used for this purpose: ENGL 100, 105, 107, 111, 112, 307, 308, or 311.
   • Recommended choices include:
      ENGL 315 The English Bible as Literature 3
      ENGL 415 Practical Literary Criticism 4
      ENGL 440 Studies in Verse 4
      ENGL 442 Studies in Drama 4
      ENGL 444 Studies in the Novel 4
      ENGL 452 Shakespeare Seminar 4
      ENGL 460 Teaching of Literature in the Secondary Schools 4
      ENGL 574 Grammar for Teachers 4
   • A writing course such as
      ENGL 305 Practical Writing 4
   • An additional literature course, especially selected from 2.A. and 2.B. above.

Elementary Education Curriculum

Language Arts Emphasis

21 hours
1. Required Entry-Level Courses (8 hrs.)
   ENGL 110 Literary Interpretation 4
   ENGL 262 Children’s Literature 4

2. Required Literature Course (3-4 hrs.)
   One of the following courses:
   ENGL 223 Black American Literature 4
   ENGL 252 Shakespeare 4
   ENGL 312 Western World Literature 3
   ENGL 313 Asian Literature 3
   ENGL 314 African Literature 3
   ENGL 315 The English Bible as Literature 3
   ENGL 320 American Literature I 3
   ENGL 321 American Literature II 3
   ENGL 330 British Literature I 3
   ENGL 331 British Literature II 3
   ENGL 484 Multi-Cultural American Literature for Children 4

   (*Courses at the 400-level can be taken only after two English courses at the 300-level; students in the elementary education 110-J freshmen may count ENGL 282 as a 300-level course.)

3. Required Advanced Courses (8 hrs.)
   ENGL 369 Writing in the Elementary School 4
   ENGL 373 Reading as a Psychological Process 4

4. Electives (3-4 hrs.)
   At least one additional English Department course, or an approved cognate course concerning children’s literature or drama in the elementary school. Especially relevant choices are:
   ENGL 472 American Dialects 4
   ENGL 484 Multi-Cultural American Literature for Children 4
   ENGL 574 Grammar for Teachers 4
   ENGL 582 Studies in Children’s Literature 3
   ENGL 583 Multi-Cultural American Literature for Adolescents 3
   COM 442 Mass Media and the Child 3
   THEA 564 Creative Drama for Children 4
   *Courses at 500-level available only to students with at least second-semester junior status, and 18 credit hours, eight of which must be at the 300-400 level, in English Department courses.

NOTES: (1) A course with a multi-cultural focus must be chosen, unless a course with such focus (ENGL 223, 313, 314, 320, 321, AND 484) has been taken to satisfy requirement #2. (2) The following courses cannot be used as electives:

   ENGL 100, 105, 107, 111, 112, 307, 308, 311, 375, 376, 479 or 480.

English Minor with Writing Emphasis

20 hours
1. Required Entry-Level Courses (8 hrs.)
   ENGL 110 Literary Interpretation 4
   ENGL 266 Writing Fiction and Poetry 4

2. Literature Course (3 hrs.)
   One course chosen from the following:
   ENGL 330 American Literature I 3
   ENGL 331 American Literature II 3
   ENGL 330 British Literature I 3
   ENGL 331 British Literature II 3

3. Advanced Writing Courses (6-8 hrs.)
   Two of the following courses:
   ENGL 305 Practical Writing 4
   ENGL 364 Feature and Article Writing 3
   ENGL 366 Advanced Fiction Writing 3
   ENGL 367 Advanced Poetry Writing 3
   ENGL 368 Playwriting 3
   ENGL 462 Advanced Writing 4
   (ENGL 366, 367, and 368 may be repeated one time for credit.

4. Electives
   At least one additional English Department course. The following courses cannot be used for this purpose: ENGL 100, 105, 107, 111, 112, 307, 308, 311, or 480.

Journalism Minor

20 hours
1. Required Entry-Level Course (4 hrs.)
   ENGL 110 Literary Interpretation 4

2. Required Journalism Core Courses (11 hrs.)
   ENGL 264 News Writing (Prerequisite: grade of B or better in ENGL 105, or equivalent) 4
   ENGL 265 News Editing 4
   ENGL 363 Reporting 3

3. Other Requirements (6-7 hrs.)
   Two courses chosen from the following:
   ENGL 305 Practical Writing 4
   ENGL 320 American Literature I 3
   ENGL 321 American Literature II 3
   ENGL 362 Literary Journalism 3
   ENGL 364 Feature and Article Writing 3
   ENGL 365 Reviewing for the Press 3

Practical Writing Minor

20 hours
1. Required Entry-level Course (4 hrs.)
   ENGL 110 Literary Interpretation 4

2. Required Courses (14 hrs.)
   ENGL 305 Practical Writing 4
   ENGL 362 Literary Journalism 3
   ENGL 364 Feature and Article Writing 3
   ENGL 462 Advanced Writing 4

3. Literature Courses (3 hrs.)
   One course chosen from among the following:
   ENGL 312 World Literature 3
   ENGL 313 Asian Literature 3
   ENGL 314 African Literature 3
   ENGL 315 The English Bible as Literature 3
   ENGL 320 American Literature I 3
   ENGL 321 American Literature II 3
   ENGL 330 British Literature I 3
   ENGL 331 British Literature II 3

English Courses (ENGL)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

ENGL 100 Basic Writing Skills
4 hrs. (Credit/No Credit)
A writing course designed to help students develop basic writing skills. Emphasis is on English usage, sentence structure, and paragraph development. Does not count toward English major or minor. Credit for 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 a credit towards English major or minor. Fulfills the University Intellectual Skills college level writing requirement.

ENGL 107 Good Books
4 hrs.
An exploration of good literature, selected from all times and countries experienced in a variety of ways—as fantasy and adventure, as imaginative response to fundamental human experience such as death or evil, as social criticism and analysis, as revelation of
character and psychology, as experience of unfamiliar customs and cultures.

A course for the general student rather than the student who plans to specialize in the study of literature. Credit towards English major or minor by permission of the department only.

ENGL 110 Literary Interpretation
4 hrs.
An introduction to the study of literature, aimed at developing abilities to read literature and write about it with skill, sensitivity, and care. Students will read poetry, drama, and prose fiction, and through the writing of several papers will be introduced to terms and methods of formal study of literature. Course 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 folklore 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 towards 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, however, count for English major or minor credit.

ENGL 150 Literature and Other Arts
4 hrs.
Study of literature through its relationship to other arts. The course approaches literature by relating novels, stories, poems, or plays to their representations in other media and art forms, particularly film (including TV), music and song, dramatic representation, and painting.

ENGL 205 Intermediate Writing
4 hrs.
A practical course for freshman or sophomore 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 an emphasis on writing news stories and learning news style. Students should be able to type. Prerequisite: Minimum of "B" in ENGL 105 or equivalent.

ENGL 265 News Editing
4 hrs.
Instruction and extensive practical experience in copy editing, rewrite, typography, heading 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 sensitivities and techniques necessary for interpreting and evaluating works representative of the major forms of children's literature—folk tale and fantasy, fiction and non-fiction, myth and poetry. If this course is counted toward the English major or minor, 283 Literature for Adolescents may not be counted, except by middle school and junior high school education English majors.

ENGL 305 Practical Writing
4 hrs.
A practical course for juniors and seniors who wish to develop their skills in writing. Emphasis is on understanding the writing forms of non-fictional prose such as research papers and reports, personal writing, and pre-professional writing (for students planning careers in business, social service, industry, law, the arts, or other professions). Topics vary and will be announced each year. May be repeated for credit, but may be counted only once toward fulfillment of General Education requirements, and counted only once for major/minor credit, except for the practical writing minor.

ENGL 307 Literature in Our Lives
3 hrs.
This course examines the ways that literary works represent and reflect upon human experience and the human condition. It emphasizes the response of the individual reader to both the intellectual content and the aesthetic properties of texts and seeks to develop critical standards as a basis for a life-long engagement with literature.

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 312 Western World Literature
3 hrs.
Study of works selected from the Western literary tradition, excluding those from Great Britain and the U.S.A. Selections may range from biblical literature and great works of Greece and Rome through classics of the Middle Ages and Renaissance to major works of the present. Works will be studied in English. Approved for General Education under Area I.

ENGL 313 Asian Literature
3 hrs.
Study of works selected from the great literature of Asia, especially the Chinese, Japanese, and Indian traditions. Works will be studied in English. Approved for General Education under Area IV (Non-Western World).

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. Approved for General Education under Area IV (Non-Western World).

ENGL 315 The English Bible as Literature
3 hrs.
Study of selections from the Old and New Testaments and the Apocrypha. Some attention will be given to the influence of the English Bible on a few representative writers, musicians, and artists, but emphasis will be on the poetic, philosophical, and narrative elements of the Bible itself.

ENGL 320 American Literature I
3 hrs.
A survey of American literature from its beginnings to 1880, with attention to the diversity of American cultures. Prerequisites: ENGL 105 (or equivalent); ENGL 110.

ENGL 321 American Literature II
3 hrs.
A survey of American literature since 1880, with attention to the diversity of American cultures. Prerequisites: ENGL 105 (or equivalent); ENGL 110.

ENGL 330 British Literature I
3 hrs.
A survey of British literature from its beginnings through Boswell. Prerequisites: ENGL 105 (or equivalent); ENGL 110.

ENGL 331 British Literature II
3 hrs.
A survey of British literature from the Romantics to the present. Prerequisites: ENGL 105 (or equivalent); ENGL 110.

ENGL 362 Literary Journalism
3 hrs.
A course in literary analysis of the form and development of the non-fiction prose of literary journalism. Prerequisites: ENGL 105; ENGL 110.

ENGL 363 Reporting
3 hrs.
Instruction and practice in covering news beats, writing complex news stories, and developing good interviewing skills. Prerequisite: ENGL 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
ENGL 365 Reviewing For the Press
3 hrs.
Theory and practice in writing reviews of books, drama, film, 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. 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. 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. 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. (This course is required for the integrated language arts minor.)

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. Planned to post-structuralist. 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. Prerequisites: At least two courses at the 300-level that count as credit 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 them both as experienced by women protagonists and women writers. Prerequisite: ENGL 110.

ENGL 440 Studies in Verse
4 hrs.
A historical and formal study of poetry, emphasizing the development of poetic techniques, major verse forms and styles, and their relation to theories of poetry. Attention shall be paid to the critical and theoretical bases of interpretation. Prerequisites: Two courses at the 300-level that count toward English major.

ENGL 442 Studies in Drama
4 hrs.
Studies in the major styles and forms of drama. Attention shall be paid to the critical and theoretical bases of interpretation. Prerequisites: Two courses that count toward the English major at the 300-level.

ENGL 444 Studies in the Novel
4 hrs.
The study of the development and diversity of the novel as a literary form. Emphasis will be on the novels from the eighteenth- to the early twentieth-century. Attention shall be paid to the critical and theoretical bases of interpretation. Prerequisites: Two courses that count toward the English major at the 300-level.

ENGL 452 Shakespeare Seminar
4 hrs.
Intensive study of selected aspects of Shakespeare's poetic and dramatic art. Prerequisite: ENGL 110 or 252.

ENGL 462 Advanced Writing
4 hrs.
Practice in writing articles, essays, biographical and critical prose, with emphasis on development of the student's individual style and elimination of obstacles to clear and vital expression.

ENGL 463 Reporting Community Affairs
4 hrs.
Practice in the covering and reporting of the police, the courts, and other governmental units. Some stress on investigatory 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, and 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, assist writing growth, and use writing as a means of learning. Fosters a theoretical understanding of the writing process, in part by writing in varied genres and forms. Emphasizes writing as an integral component of the entire curriculum. Prerequisite: Two 300-level English courses that count toward the major.

ENGL 480 Teaching Literature in the Secondary Schools
4 hrs.
A study of techniques and theories of teaching literature to young adults. Does not count as credit toward the major. Prerequisites: ED 302: Teaching and Learning—Secondary and two 300-level English courses that count toward the major.

ENGL 484 Multi-Cultural American Literature for Children
3 hrs.
A course designed to develop an understanding of the cultural diversity of the American experience through multi-cultural oral and written literature for young people. Attention will be paid to developing criteria for selecting and evaluating literature which reflects diversity within the American heritage. Prerequisite: 16 hours must include ENGL 262.

ENGL 495 Internship/Field Work
1-4 hrs.
Open to juniors and seniors with a 3.0 GPA, this course enables advanced students to gain practical writing experience in the working world while earning academic credit. Specific arrangements are made in consultation with the Director of Undergraduate Studies. May be repeated; no more than four hours total credits. Prerequisite: Writing majors or minors.

ENGL 496 English Honors Seminar
4 hrs.
Special studies in selected topics. Open only to majors working for honors in English, or by permission of the instructor.

ENGL 497 Studies in English: Variable Topics
1-3 hrs.
Group study of special topics in literature, film, English language, and writing. Many of these special courses are organized around special events or speakers on campus or in the community, or in response to special needs or interests of students. Some topics are announced in the schedule of classes.
some are added during the semester. Further information and full listing of topics may be obtained from the English Department, sixth floor Sprau Tower.

The prerequisites to 500 level courses are: 18 hours of English courses including eight or more hours at the 300-400 level and second semester junior status; exemption only by permission of Director of Undergraduate Studies.

ENGL 522 Studies in American Literature 3 hrs.
Study of a movement or a recurrent theme in American literature, such as romanticism, realism, naturalism, humor, racial issues.

ENGL 530 Medieval Literature 3 hrs.
Readings in the medieval literary tradition. Some Middle English works will be studied in the original, works in Old English and continental literature will be mainly in translation.

ENGL 532 English Renaissance Literature 3 hrs.
Readings in representative writers of the period 1500-1660.

ENGL 534 Restoration and 18th Century Literature 3 hrs.
(British Literature 1660-1800) Readings in representative writers of the period, focusing on the diversity of literary forms in the period.

ENGL 536 Romantic Literature 3 hrs.
Readings in poetry and criticism, with emphasis on such writers as Blake, Burns, Dorothy Wordsworth, William Wordsworth, Coleridge, Scott, Byron, Mary Shelley, P.B. Shelley, and Keats.

ENGL 537 Victorian Literature 3 hrs.
Readings emphasizing such writers as Carlyle, Mill, Dickens, Thackeray, George Eliot, Tennyson, Robert Browning, Elizabeth Barrett Browning, and Arnold.

ENGL 538 Modern Literature 3 hrs.
Readings in representative writers of 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.

ENGL 360 Achieving in Academic English: Emphasis on Reading 5 hrs.
This course is for undergraduates and graduates who are non-native speakers of English and who have sufficient language proficiency to be admitted to the University, but who need to improve their reading and writing skills in order to perform successfully in their academic work. The course promotes further development in the ability to read 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 reading. 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. Attention will be paid to developing critical listening and oral presentation skills. Prerequisite: Minimum of 500 on TOEFL.

ENVIRONMENTAL STUDIES PROGRAM
See "Science Studies" in the College of Arts and Sciences

FRENCH
See "Foreign Languages and Literatures" in the College of Arts and Sciences.

English Courses for International Students (ENGL)

ENGL 160 Developing Fluency and Clarity in English: Emphasis on Reading and Writing 5 hrs.
This course is for undergraduates and graduates who are non-native speakers of English and who have sufficient language proficiency to be admitted to the University, but who need to improve their reading and writing skills in order to perform successfully in their academic work. The course will help international students develop fluency and clarity in their writing by responding to varied kinds of prose. Students will learn to write in various academic genres. Particular attention will be paid to understanding and using key organizational patterns of these genres and to textbooks, with an emphasis on information gathering, planning, writing, and revising for clarity. Graded on credit/no credit basis. Prerequisite: Minimum of 500 on TOEFL.

ENGL 161 Acquiring Fluency and Accuracy in English: Emphasis on Speaking and Listening 5 hrs.
This course will help international students develop fluency in speaking and effectiveness in listening to English by completing a series of tasks designed to develop their grammatical, sociolinguistic, and discourse competence in oral language. Attention will be paid to developing interpersonal interaction skills, both social and classroom, and basic lecture-listening skills. Graded on credit/no credit basis. Prerequisite: Minimum of 500 on TOEFL.
Only courses in which a grade of "C" or better is obtained can be counted toward a major or minor.

Baccalaureate Writing Requirement

Students who have chosen to major in French, German, and Spanish will satisfy the Baccalaureate Writing Requirement by successfully completing LANG 375 or LANG 376 Foreign Literature in English Translation.

Students who have chosen to major in Latin will satisfy the Baccalaureate Writing Requirement by successfully completing ENGL 305 Practical Writing.

Majors and Minors

RESIDENCY REQUIREMENT FOR MAJORS AND MINORS IN FRENCH, GERMAN, OR SPANISH

Majors in French or Spanish must complete at least four courses (of the total required for the major) at Western Michigan University. One of these must be a 500-level class. Majors in French and Spanish must complete at least three courses (of the total required for the minor) at the 200-level or below at Western Michigan University.

Majors or minors in Latin must complete at least the last two courses in their Latin program at Western Michigan University. GREK 100 and 101. Students who have completed their work at other institutions and 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.

Students who complete a major or minor and who place above the expected level may be eligible for some retroactive credit, depending on the level at which they place in a particular language. Questions about this matter should be referred to the Placement Director.

Students entering in Fall 1993 and after who will graduate from the College of Arts and Sciences will fulfill that college’s foreign language requirement. Other colleges or specific departments may also have a foreign language requirement. Students who have questions about this matter should consult their advisor.

Native speakers of a given language must consult with a departmental advisor before registering for courses up through the 300 level. A student planning a language major should consult with a departmental advisor as early as possible to insure proper planning and avoid subsequent difficulties. Teaching certification is approved for majors or minors in secondary and middle school and junior high school education for the following languages: French, German, Latin (secondary only), Russian (minor only), and Spanish.

A language methods course is required for all teaching majors and minors in the foreign languages. Exceptions to the patterns may be granted only by departmental permission.

GERMAN MINOR: Education Curriculum

Twenty-six hours beyond 100-level to include GER 316, 317, 322, 325, 452 or 453, and LANG 558. Neither GER 400 nor 401 can be counted toward the major.

JAPANESE MINOR

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

LATIN MAJOR

Thirty hours including 100, 101, and 200 or equivalent; remaining hours from 201-560, including LANG 375 (Classical Literature in English Translation) or LANG 350. GREK 100 and 101 may also be included. Teaching majors must include LAT 324, and 557.

LATIN MINOR

Twenty hours including 100, 101, and 200 or equivalent; remaining hours from 201-560, and may include LANG 375 (Classical Literature in English Translation) or LANG 350. Teaching minors must include LAT 557 which does not yield credit hours toward the Latin minor.

RUSSIAN MINOR

Twenty hours including 100-level (basic) courses or equivalent, remaining hours from RUSS 200-500 series.

SPANISH MAJOR: Non-teaching

Thirty-two hours beyond 100-level to include SPAN 322 or 323, 325, and three 400- or 500-level Spanish courses (to include three hours from SPAN 326, 327, 529, 529, or 560). LANG 558 cannot be included in this major.

SPANISH MAJOR: Education Curriculum

Thirty-five hours beyond 100-level to include SPAN 322 or 323, 325, three 400- or 500-level Spanish courses (to include three hours from SPAN 526, 527, 528, 529, or 560), and LANG 558.

SPANISH MINOR: Non-teaching

Twenty hours beyond the 100-level to include six hours from SPAN 322, 323, or 325. LANG 558 cannot be included in this minor.

SPANISH MINOR: Education Curriculum

Twenty-six hours beyond 100-level to include LANG 558 and six hours from SPAN 322, 323, or 325.

WORLD LITERATURE MINOR

The Department of Foreign Languages and Literatures and the Department of English offer jointly a world literature minor (20 hours). For description and requirements, see the “Interdisciplinary Programs” listing in the College of Arts and Sciences section of this catalog, or consult Dr. Felkel, 515 Sprau, 387-3018.

Foreign Credits

Credits for language study at a foreign university may be granted on official proof that the student has completed the coursework successfully. For courses where no examination or grades are given, the student may be recommended for appropriate credit upon his/her return to Western on the basis of papers, colloquia, or comparable work to be determined by the department.
Language Courses (LANG)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

LANG 100 Basic Foreign Languages I
4 hrs.
Study of a foreign language not regularly offered in the department. Fundamentals of the particular foreign language with emphasis on specific skills, as appropriate for that language.

LANG 101 Basic Foreign Languages II
4 hrs.
Continuation of LANG 100. Prerequisite: LANG 100 or equivalent in the same language.

LANG 105 The Nature of Language
4 hrs.
A broad introduction to the nature and development of language in human society and to the interdisciplinary aspects of current studies of language and language behavior.

LANG 200 Intermediate Foreign Languages I
4 hrs.
Continuation of LANG 101. Review, practice and development of knowledge and skills as appropriate for the particular foreign language. Prerequisite: LANG 101 or equivalent in the same language.

LANG 201 Intermediate Foreign Languages II
4 hrs.
Continuation of LANG 200. Prerequisite: LANG 200 or equivalent in the same language.

Foreign Literature in English Translation

These courses will survey literary masterpieces of other countries in English translation. They are open to any student and there is no foreign language prerequisite. The courses will be taught entirely in English by specialists in the areas.

LANG 375 Foreign Literature in English Translation: Views of Humanity
3 hrs.
The content of the course will stress the observation and experience of another society and culture as depicted in some of the great writings of foreign literature through reading in English. Universal themes about the human condition and insight into their treatment by representative native writers will be presented. The course will consider the differences in treatment of individuals and society and will offer a comparison to contemporary life through various literary works and the social-historical background for each of the selections.

This course does not apply toward a major or minor in French, German, or Spanish, but it may apply toward a major or minor in Latin or a minor in Russian. LANG 375 fulfills the University baccalaureate-level writing requirement for foreign language majors. The course may be taken in more than one language area.

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 thematic and stylistic analysis of major French writers from LaFayette to the present, to include Stendhal, Balzac, Flaubert and Proust.

German Literature in English Translation
A comparative study of literary themes and techniques of major German writers from Hauptmann to the present, including Mann, Brecht, Kafka, and Erich Maria Remarque.

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, Dostoevski, Tolstoy, Gorki, Sholokhov, Pasternak, and Solzhenitsyn.

Spanish-American Literature in English Translation
Selected prose and poetry from late 19th century (Ruben Dario and Modernismo) to the contemporary writers of Hispanoamerica.

Spanish Literature in English Translation
Selected Spanish prose and poetry from the Middle Ages to the twelfth 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 traced 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. LANG 376 fulfills the University baccalaureate-level writing requirement for foreign language majors. The course may be taken in more than one language area.

French Language Courses

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.

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 LANG 316 and 317, or equivalent, or permission of instructor.

This course will be offered regularly. The comparable methods course for Latin is LAT 557 Teaching of Latin.

Foreign Languages for Special Purposes

LANG 580 Foreign Language for Special Purposes
1-12 hrs.
The study of or practice in a specialized area in the field of foreign language and culture such as court interpreting, medical or engineering terminology, or public school administration. The content of this course may vary from semester to semester. Students may repeat the course for credit, provided the subject matter differs. Prerequisite: Completion of four courses in area of specialization; departmental approval required.

Classics

See Greek, Latin, and Classics Courses in English.

French (FREN)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier 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 325 Close Reading In French
3 hrs.
Prose and verse readings of intrinsic literary and cultural merit, with emphasis on strategies for literary analysis. Prerequisites: FREN 316, 317, or permission of Department.

FREN 344 Summer Study in France
4 hrs.
A summer study program of French language, literature and culture. The course consists of formal study at a French university with regularly scheduled lectures and discussions in the French language. University study is supplemented by an organized tour of Paris with full explanations by an instructor of all points visited. Each student submits a term paper investigating one phase of his/her experience. Prerequisite: FREN 200 or equivalent.

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 instructor.

FREN 401 Intermediate French for Reading Proficiency
4 hrs.
Readings in the language at intermediate and advanced levels for translation and research purposes. Special attention will be given to students' major fields. Completion of FREN 401 with a minimum of “B” constitutes graduate proficiency in the language. Undergraduates must secure permission of the Department. This course does not count toward a major or minor in French. Prerequisite: FREN 400 or equivalent.

FREN 452 Advanced French Grammar and Composition
3 hrs.
Intensive review of French structure and practice in composition. Prerequisite: FREN 316 and 317 or equivalent.

FREN 453 Advanced French Conversation
3 hrs.
Intensive practice with spoken French. Prerequisite: FREN 316 and 317 or equivalent.

FREN 477 Foreign Study
1-16 hrs. Fall-Winter; 1-8 hrs. Spring-Summer
Student participation in a departmentally approved program of study abroad. Repeatable for credit up to 32 credit hours. Prerequisite: Prior permission of departmental advisor and charperson.

FREN 482 Advanced 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 482 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.
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 200-level course in the major, a minimum grade point average of 3.0 in the major. Not open to minors.

GER 559 History of the German Language
3 hrs.
Survey of the development. Prerequisite: 6 hours of 300-level German or above.

GER 560 Studies in German Literature
3 hrs.
Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisites: GER 316, 317, 322, 325 or permission of instructor. Representative topics which may be treated in this area include:
- The Novel—Survey of the development with representative selections.
- Lyric Poetry—Survey of the development with significant selections.
- Nineteenth Century Drama—Primarily Kleist, Grillparzer, Hebbel, and Hauptmann.
- Twentieth Century Drama—Representative selections.

Greek (GREK)
A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

GREK 100 Basic Greek I
4 hrs.
Fundamentals of classical Greek; readings emphasize Greek thought, culture, and civilization.

GREK 101 Basic Greek II
4 hrs.
Continuation of 100. Prerequisite: GREK 100 or equivalent.

Japanese (JPNS)
A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

JPNS 100 Basic Japanese I
4 hrs.
Fundamentals of Japanese with audio-lingual emphasis. Cultural aspects are reinforced by visual aids.

JPNS 101 Basic Japanese II
4 hrs.
Continuation of 100. Japanese cultural readings. Prerequisite: JPNS 100 or equivalent.

JPNS 200 Intermediate Japanese I
4 hrs.
The development of spoken and written Japanese with emphasis on grammatical structures. Introduction of 160 KANJI characters. Prerequisite: JPNS 101 or equivalent.

JPNS 201 Intermediate Japanese II
4 hrs.
The continuation of 200 with more complex structures and the addition of 160 more KANJI characters. Prerequisite: JPNS 200 or equivalent.

JPNS 316 Japanese Composition
3 hrs.
Emphasis is upon increasing the student’s command of written Japanese. KANJI competency is reinforced. Prerequisite: JPNS 201 or equivalent.

JPNS 317 Japanese Conversation
4 hrs.
Students practice spoken Japanese through role-playing, the viewing of films, discussion, and other oral activities. Prerequisite: JPNS 201 or equivalent.

JPNS 477 Foreign Study
1-16 hrs Fall/Winter
1-8 hrs. Spring/Summer
Student participation in departmentally approved program of study abroad. Repeatable for credit up to 32 credit hours. Prerequisite: Prior permission of departmental advisor and chairperson.

500-level courses may be taken only by advanced undergraduate students. Advanced undergraduate students are defined as those who have satisfactorily completed a minimum of four courses, or equivalent, applicable course work toward a major or minor in any one language. Each course, however, may have more specific and/or additional prerequisites.

JPNS 550 Independent Study in Japanese
1-3 hrs.
Directed individual study of a specific topic in Japanese language or literature. Prerequisite: Prior permission of the instructor.

Latin (LAT)
A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

LAT 100 Basic Latin I
4 hrs.
Fundamentals of Latin, readings emphasize Roman thought, culture, and civilization.

LAT 101 Basic Latin II
4 hrs.
Continuation of 100. Prerequisite: LAT 100 or equivalent.

LAT 200 An Introduction to the Study of Latin Literature
4 hrs.
A review of Latin grammar based on selections from Latin authors representing various genres, for example: history, satire, political oratory, lyric poetry, comic drama. Prerequisite: LAT 101 or equivalent.

LAT 201 Lyric Poetry
4 hrs.
Latin lyric poems of Catullus, Horace, Tibullus, and Propertius with special attention to improving language skills. Study and analysis of literary themes will also be included. Prerequisite LAT 200 or equivalent.

LAT 204 Vergili
4 hrs.
Readings from the works of Vergil especially the Aeneid, with particular attention to improving language skills while exploring Vergil’s thought and style. Prerequisite: LAT 200 or equivalent.

LAT 324 Latin Literature
4 hrs.
Selections from Latin prose and poetry. Since specific readings vary according to genre, author, or period, this course may be repeated for credit. Prerequisite: LAT 200 or 201 or equivalent.

LAT 477 Foreign Study
1-16 hrs Fall/Winter, 1-8 hrs. Spring/Summer
Student participation in departmentally approved program of study abroad. Repeatable for credit up to 32 credit hours. Prerequisite: Prior permission of departmental advisor and chairperson.

500-level courses may be taken only by advanced undergraduate students. Advanced undergraduate students are defined as those who have satisfactorily completed a minimum of four courses, or equivalent, applicable course work toward a major or minor in any one language. Each course, however, may have more specific and/or additional prerequisites.

LAT 550 Independent Study in Latin
1-3 hrs.
Directed, individual study of a specific topic in Latin literature or linguistics. Departmental approval required for admission. Repeatable for credit. Prerequisite: a minimum grade point average of 3.0 in the major.

LAT 557 Teaching of Latin
3 hrs.
The purpose of the course is to acquaint the prospective teacher with theory and practice appropriate to the teaching of the Latin language, literature, and culture in its classical context and as it relates to the modern world. Required of Latin teaching majors and minors. Prerequisite: Completion of four courses, or equivalent, in Latin, or permission of instructor.

LAT 560 Medieval Latin
3 hrs.
A survey of the development of medieval Latin from late antiquity to the Renaissance. Selections from Latin prose and poetry. Since specific readings vary according to genre, author, or period, this course may be repeated for credit. Prerequisite: LAT 200, 201, 204, 324, or equivalent, or permission of the department.

Lafian (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.

LATV 316 Latvian Composition
4 hrs.
Intensive practice in writing Latvian, in order to improve the student's ability to express herself effectively and to develop an individual style of composition. Recognition and production of various language usages and styles. Problems and practice of translation. Individual writing projects. Prerequisite: LATV 201 or equivalent.

LATV 317 Latvian Conversation
3 hrs.
Emphasis upon increasing the student's competence in conversation. Prerequisite: LATV 200 or equivalent, or instructor's permission.

LATV 320 Latvian Phonology
1 hr.
Study of the phonological system of Modern Latvian, including study and practice to correct typical difficulties encountered by students of Latvian with Anglo-American patterns of pronunciation. Prerequisite: LATV 200 or equivalent, or instructor's permission.

LATV 322 Latvian Life and Culture
3 hrs.
Study of selected aspects of Latvian life and culture and their historical settings. Prerequisite: LATV 200 or equivalent, or instructor's permission.

LATV 325 Introduction to the Study of Latvian Literature
4 hrs.
Variable topics: various genres of Latvian folk literature and various periods of 19th and 20th century Latvian literature. Topics will be announced in the Schedule of Classes. Course may be repeated for credit under different topics. Prerequisite: LATV 201 or equivalent, or instructor's permission.

LATV 452 Advanced Latvian Grammar and Composition
3 hrs.
Intensive review of Latvian structure and practice in composition. Prerequisite: Minimum of four courses including LATV 316 and 317, or equivalent; or permission of instructor.

LATV 477 Foreign Study
1-16 hrs. Fall-Winter; 1-8 hrs. Spring-Summer
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 201 Intermediate Russian I
4 hrs.
Level two Russian. Review and furthering of development of spoken and written Russian. Prerequisite: RUSS 100 or equivalent.

RUSS 202 Intermediate Russian I
4 hrs.
Continuation of RUSS 201. Prerequisite: RUSS 200 or equivalent.

RUSS 203 Independent Study in Russian
2-4 hrs.
Directed individual study of a specific topic in Russian. Prerequisite: Minimum of four courses including LATV 316 and 317, or equivalent; or permission of instructor.

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: One 500-level course in major; minimum of 3.0 grade point average in major; instructor's approval required.

RUSS 550 Independent Study in Russian
4 hrs.
Directed individual study of a specific topic in Russian, or culture, or period and will be announced. May be repeated for credit. Prerequisite: RUSS 201 or equivalent.

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.

SPAN 100 Basic Spanish I
4 hrs.
Fundamentals of Spanish with audiolingual emphasis. Prerequisite: Minimum of four courses including LATV 316 and 317, or equivalent; minimum grade point average of 3.0 in Russian; department and instructor approval required.

SPAN 200 Intermediate Spanish II
4 hrs.
Level two Spanish. Review and furthering of oral and reading skills based upon increasingly advanced oral and written exercises. Prerequisite: RUSS 101 or equivalent.

SPAN 201 Intermediate Spanish II
4 hrs.
Continuation of SPAN 200 with a focus on development of spoken and written expression in the Spanish language through readings and discussion of civilization and cultural materials. Prerequisite: RUSS 200 or equivalent.

SPAN 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. Prerequisite: RUSS 316 or equivalent.

SPAN 510 Methods of Teaching Latvian
2 hrs.
Examination of different Latvian language teaching methods: principles, problems, current practice. Opportunities to tutor beginning Latvian students, engage in student teaching in the Kalamazoo Latvian School and/or work on language-teaching materials. Prerequisite: Minimum of four courses including LATV 316 and 317, or equivalent; or permission of instructor.

SPAN 515 Methods of Teaching Latvian
2 hrs.
Teaching methods: principles, problems, current practice. Opportunities to tutor beginning Latvian students, engage in student teaching in Kalamazoo Latvian School and/or work on language-teaching materials. Prerequisite: Minimum of four courses including LATV 316 and 317, or equivalent; or permission of instructor.

Spanish (SPAN)
A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier 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 100. Prerequisite: SPAN 100 or equivalent.

SPAN 200 Intermediate Spanish I
4 hrs.
The development of spoken and written expression in the Spanish language with an emphasis on grammar 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
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 (316 and 317 may be taken concurrently with 322 with permission of Spanish advisor).

SPAN 323 Life and Culture of Latin America 3 hrs. A study of Latin-American life and culture based on ethnic, historical, social, religious and literary considerations. Prerequisites: SPAN 316 and 317 or equivalent (316 and 317 may be taken concurrently with 323 with permission of Spanish advisor).

SPAN 325 Introduction to the Study of Spanish Language and Literature 3 hrs. An appreciation of Spanish literature through reading and critical interpretation of selected works of various literary types. Prerequisites: SPAN 316 and 317 or equivalent.

SPAN 452 Advanced Spanish Grammar and Composition 3 hrs. An advanced study of the intricacies and problems of Spanish grammar, syntax, and style with attention to improving written expression in Spanish at an advanced level. Prerequisites: SPAN 316, 317 and one additional 300-level course. At least 3 hours from 526, 527, 528, or 529 are recommended.

SPAN 453 Advanced Spanish Conversation 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. At least 3 hours from 526, 527, 528, or 529 are 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.

LING 500 Introduction to Linguistics 4 hrs. An introduction to modern linguistic theory and to the application of that theory to linguistically-related disciplines.

LING 551 Psycholinguistics 4 hrs. A study of linguistic systems as they connect language and thought—and relate competence to performance—in the acquisition, production, and perception of language.

LING 552 Sociolinguistics 4 hrs. A systematic study of the linguistic correlates of social behavior and the influence of society on the nature of language.

LING 598 Readings in Linguistics 1-4 hrs. An opportunity for advanced students with good scholastic records to pursue the independent study of a linguistic subject not specifically covered by any of the courses in the Linguistics program. Repeatable for credit. Prerequisite: Permission of instructor and chairperson.

Translation Program

Minor in Translation

This program is not currently accepting applications.

ADMISSION TO THE PROGRAM AND PREREQUISITES

1. The minor in translation requires the completion of the courses or their equivalents in one of the following languages as prerequisites at specific levels of the program:

In French:
- 316 French Composition
- 317 French Conversation
- 325 Close Reading in French
- 452 Advanced French Grammar and Composition

In German:
- 316 German Composition
- 317 German Conversation
- 325 Introduction to the Study of German Literature
- 452 Advanced German Composition

In Latin:
- 316 Latin Composition
- 317 Latin Conversation
- 325 Introduction to the Study of Latin Literature
- 452 Advanced Latin Grammar and Composition

Linguistics

Linguistics is the scientific study of language—its diversified structures and their dialectal variants, its acquisition by children and non-native speakers, its systems of writing and transcription, its cultural role in the speech community, and its application to other areas of human knowledge.

Linguistics Courses (LING)

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.

LING 500 Introduction to Linguistics 4 hrs. An introduction to modern linguistic theory and to the application of that theory to linguistically-related disciplines.

LING 551 Psycholinguistics 4 hrs. A study of linguistic systems as they connect language and thought—and relate competence to performance—in the acquisition, production, and perception of language.

LING 552 Sociolinguistics 4 hrs. A systematic study of the linguistic correlates of social behavior and the influence of society on the nature of language.

LING 598 Readings in Linguistics 1-4 hrs. An opportunity for advanced students with good scholastic records to pursue the independent study of a linguistic subject not specifically covered by any of the courses in the Linguistics program. Repeatable for credit. Prerequisite: Permission of instructor and chairperson.
Translation Courses (TRNS)

TRNS 310 Introduction to Translation 
3 hrs.
Survey of the history and theories of translation. Discussion of the importance of translation in international commerce, international political organizations, scientific research, and the transfer of technology and culture. Other topics include the tools of the trade, institutions for advanced training, employment opportunities, freelance work, and rate of compensation.

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.

TRNS 510 Translation Seminar 
4 hrs.
Intensive practice in translation, primarily of non-literary documents, into English. The course will also include some practical work in lexicography, error analysis, translation quality assessment, and general problem solving. Prerequisites: LANG 105, ENGL 305, TRNS 310, FREN 316, 317, 325, 452, or GER 316, 317, 325, 452, or LATV 316, 317, 325, 452, or SPAN 316, 317, 325, 452.

TRNS 590 Translation Practicum 
3-6 hrs.
Under the direction of a faculty advisor, a student will serve as an intern in the translation department of a major company, work under the supervision of a professional translator or in a translation agency, complete a substantial and useful translation project on campus, or attend a series of translation workshops. Off-campus work will be evaluated jointly by institutions or individuals supervising the intern and the faculty advisor. On-campus projects will be evaluated by a panel of faculty members. Specific assignments will be arranged in consultation with the advisor during the semester preceding the one in which the student expects to enroll in 590. TRNS 590 may be taken in two consecutive semesters (16 contact hours per week, 3 credit hours per semester, total of 6 credit hours) or in a single semester (32 contact hours per week, 6 credit hours). Prerequisite: TRNS 510.

GEOGRAPHY

Eldor C. Guandt, Chair
Elen M. C. Curnim
David G. Dickenson
Rainer R. Erhart
Chansheng He
Charles F. Heller
Phillip P. Mcklin
Henry A. Raup
Hans J. Stolle
Joseph P. Stoltman
Ilya Zaslavsky

These programs are designed to provide students with an improved understanding of humanity’s physical and cultural surroundings and the interrelations of all these. Students are prepared through geography as a physical and social science for careers in such diverse fields as urban and regional planning, cartography, environmental analysis, teaching in elementary and secondary schools, and tourism and travel. A program is also available for those who desire to continue in graduate studies.

A core of four courses (GEOG 105, 205, 265, 303) are required of majors. A 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 Room 317, Wood Hall (phone 387-3410) for information concerning courses, major, minor, honors program, or financial assistance.

Baccalaureate Writing Requirement

Students who have chosen either the Geography or Tourism and Travel major will satisfy the Baccalaureate Writing Requirement by successfully completing GEOG 303 Geographic Inquiry.

Geography Minor

20 hours credit

GEOG 105 Physical Geography ........ 4 hrs. or
GEOG 205 Human Geography ........ 3 hrs.
GEOG 265 Map, Chart and Air Photo Reading ........ 3 hrs.
Remaining courses to be selected with consent of advisor.

Geography Major Specialization

32 hours credit

The areas of specialization are: urban and regional planning, geographic information processing, environmental and resource management, and regional geography. A program of courses is provided for each of these areas. This major is focused upon courses designed to meet a student’s particular needs. An internship (GEOG 412) is available for those who wish to gain practical experience. This can be done by either assisting faculty in research or by working in an approved off-campus agency. It is recommended that 6 additional hours of work from complementary disciplines be taken in support of the area of specialization.

GEOG 105 Physical Geography ........ 4 hrs.
GEOG 205 Human Geography ........ 3 hrs.
GEOG 265 Map, Chart and Air Photo Reading ........ 3 hrs.
GEOG 303 Geographic Inquiry ........ 4 hrs.
Remaining courses must be selected with consent of advisor.

Secondary Education—Geography Major

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.

Secondary Education—Geography Minor

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
Group Social Science
Students in the secondary education curriculum major in geography and choose a social science emphasis must also complete a minor in group social science. Refer to the “Interdisciplinary Programs” section of this catalog for a description of the minor requirements.

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. Room 321 Wood Hall, Western Michigan University, Kalamazoo, Michigan 49008.

Required
GEOG 105 Physical Geography 4 hrs.
GEOG 205 Human Geography 4 hrs.
GEOG 265 Map, Chart, and Air Photo Reading 3 hrs.
GEOG 303 Geographic Inquiry 4 hrs.
GEOG 310 Research and Regulations/ Tourist 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 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 3 hrs.
GEOG 389 Monsoon Asia 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 Haworth College of Business or Department of Languages and Linguistics (Modern and Classical Languages).

Science and Mathematics Teaching Minor
The Department of Geography participates in the science and mathematics teaching minor for students in the elementary curriculum. For a full description of the program, consult its listing under the Interdisciplinary Programs section in the College of Arts and Sciences.

Science Credit
The geography courses 100, 105, 204, 225, 265, 306, 350, 375, 521, 553, 554, 555, 557, 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
GEOG 102 World Geography Through India and Maps
GEOG 105 Physical Geography
GEOG 204 National Park Landscapes
GEOG 205 Human Geography
GEOG 225 Introduction to Meteorology and Climatology
GEOG 244 Economic Geography
GEOG 306 The Atmospheric Environment and Society
GEOG 350 Conservation and Environmental Management
GEOG 356 Introduction to City and Regional Planning
GEOG 361 Population: The Crowding World
GEOG 425 Geography of Travel and Tourism
GEOG 521 Studies in Climatology and Meteorology
GEOG 544 Studies in Economic Geography
GEOG 545 Studies in Human Geography
GEOG 553 Water Resources Management
GEOG 554 Outdoor Recreation: Resources and Planning
GEOG 555 Contemporary Issues in Resources Management
GEOG 556 Studies in Urban and Regional Planning
GEOG 557 Environmental Impact Assessment
GEOG 570 Cities and Urban Systems
REGIONAL GEOGRAPHY
GEOG 309 Studies in Regional Geography
GEOG 311 Geography of Michigan
GEOG 380 United States and Canada
GEOG 381 South America
GEOG 382 Mexico and the Caribbean
GEOG 383 Western and Southern Europe
GEOG 384 The Post-Soviet States
GEOG 385 The Pacific Realm
GEOG 386 Sub-Saharan Africa
GEOG 387 The Middle East and North Africa
GEOG 389 Monsoon Asia

GEOGRAPHIC METHODOLOGY AND RESEARCH
GEOG 265 Map, Chart, and Air Photo Reading
GEOG 303 Geographic Inquiry
GEOG 310 Research and Regulation in Tourism
GEOG 375 Principles of Cartography
GEOG 412 Professional Practice
GEOG 460 Concepts and Strategies in GIS
GEOG 566 Field Geography
GEOG 567 Computation Geodata Handling and Mapping
GEOG 568 Quantitative Methodology
GEOG 569 Geographic Information Systems
GEOG 580 Advanced Cartography
GEOG 582 Remote Sensing of the Environment
GEOG 597 Readings in Geography

Geography Courses (GEOG)
A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.
GEOG 100 World Ecological Problems and Man 4 hrs.
GEOG 225 Introduction to Meteorology and Climatology
GEOG 244 Economic Geography
GEOG 306 The Atmospheric Environment and Society
GEOG 350 Conservation and Environmental Management
GEOG 356 Introduction to City and Regional Planning
GEOG 361 Population: The Crowding World
GEOG 425 Geography of Travel and Tourism
GEOG 521 Studies in Climatology and Meteorology
GEOG 544 Studies in Economic Geography
GEOG 545 Studies in Human Geography
GEOG 553 Water Resources Management
GEOG 554 Outdoor Recreation: Resources and Planning
GEOG 555 Contemporary Issues in Resources Management
GEOG 556 Studies in Urban and Regional Planning
GEOG 557 Environmental Impact Assessment
GEOG 570 Cities and Urban Systems
GEOG 204 National Park Landscapes 3 hrs.
GEOG 225 Introduction to Meteorology and Climatology 4 hrs.
GEOG 244 Economic Geography 3 hrs.
GEOG 205 Human Geography 3 hrs.
GEOG 265 Map, Chart, and Air Photo Reading 3 hrs.
Tourism
This course introduces the research methods
GEOG 309 Studies in Regional Geography
2-3 hrs.
An introduction to the physical and cultural
An investigation of topics in physical and
economic conditions; consideration of the
impacts 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 361 Population: The Crowding World
3 hrs.
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 375 Principles of Cartography
4 hrs.
(Science credit) Introduction to map
construction with primary emphasis on
planning and designing maps as communication medium. Lectures and
lab assignments familiarize the student with
layout and design of maps, computer
assisted mapping, the computation of map
projections, procedures of map compilation, and
the basics of map reproduction. Prerequisite: GEOG 265 or equivalent.
GEOG 380 United States and Canada
3 hrs.
A study of the physical environment north of
the Rio Grande followed by an analysis of
the spatial structure of the area's population and
economy. The basis for the regional
differentiation of the USA and Canada is
considered, followed by a region-by-region
analysis of each 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
countries. The physical elements (climate,
landforms, resources, etc.) are examined and the
derivative cultural elements are identified.
Emphasis is placed upon the social and
economic activities of contemporary Western
and Southern Europe.
GEOG 384 The Post-Soviet States
3 hrs.
A geographical appraisal of the newly
independent republics. Topics covered
include: location and geographical setting, the
physical environment, population, ethnic
and nationality issues, economic
development, and problems of environmental
deterioration.
GEOG 385 The Pacific Realm
3 hrs.
Selected studies of the relationships between
human beings and the environment in
Australia, New Zealand, Melanesia, and
Polynesia.
GEOG 386 Sub-Saharan Africa: Man, Environments, Resources
3 hrs.
Survey of the principal physical and political
patterns of Africa south of the Sahara
followed by studies of the significant elements
of the major realms and states, e.g.,
population distribution, patterns of
subsistence and commercial agriculture,
status of mineral and power resource
development, transportation routes, regional
development programs.
GEOG 387 The Middle East and North Africa
3 hrs.
Study of the diversity and uniformity—both
physical and cultural—of the Middle East and
Africa north of (and including) the Sahara.
Special attention is given to arid problems,
economic development, petroleum, Arab
unification movements, and the impact of
the Muslim World on the current political
scene.
GEOG 389 Monsoon Asia
3 hrs.
Systematic survey of the physical and human
(socio-economic) environments of the
southeastern rim of Asia (Pakistan in the west
and Japan in the east). Geographical
background necessary to interpret present
conditions is included.
GEOG 408 Geography of Travel and Tourism
4 hrs.
The study of global environments and
transportation systems to analyze tourism
and travel trends and opportunities. An
examination of resort areas, tourist frequency
patterns to various resorts, economic
trends, and mental maps of tourism and travel
preferences are examined. For Tourism and
Travel majors only.
GEOG 412 Professional Practice
2-6 hrs.
Provision for an advanced student to benefit by
supplementary practical experiences in a
particular branch of geography, either by
assisting faculty engaged in research or by
working in a departmentally-approved
campus agency. Specific assignments are
arranged in consultation with departmental
instructors. The student must enroll for one
additional semester, but no student will be allowed more than six hours total credit for
Geography majors and minors, and Tourism
and Travel majors only. Prerequisite: Junior
standing and consent of Department Chair.
GEOG 460 Concepts and Strategies in the
Teaching of Geography
3 hrs.
Study of objectives, tools, organization and
presentation of material, methods of
evaluation, and scrutiny of the value of
geographical knowledge material in the field of geography. This course is
intended for students in the Elementary and
Secondary Education Curriculum who are
Geography, Social Science, and Group Social
Science majors and minors.
GEOG 512 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
reference grids and orientation. Methods of
map reading, analysis, and interpretation are
practiced on maps of different kinds and
scales. Air photos and other remotely sensed
images and their application are also
introduced.
phenomena and their relation to atmospheric circulation patterns are also investigated. Prerequisite: GEOG 225 or consent of department.

GEOG 544 Studies in Economic Geography
3-2 hrs. Presents world patterns of agriculture, manufacture, or transportation which link global production and consumption. In any term, the course focuses upon one of the economic sectors:
1. Agriculture. Describes and analyzes the distribution of major crops and livestock, and their combinations in common farming areas. 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 economic, technological, and political elements affecting the locational decision.
3. Transportation. Emphasizes the historical evolution of transport systems 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 645 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 and selected problems. Prerequisites: 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 human occupancy 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 principal 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 international geography.

GEOG 553 Water Resources Management
3 hrs. (Science credit) Examination of water resources management with emphasis upon rational development and utilization of available supplies. Topics include supply and demand, methods of supply augmentation (desalination, inter-basin transfers), water administration and policies, and various water problems together with their solutions.

GEOG 554 Outdoor Recreation: Resources and Planning
3 hrs. (Science credit) Examination of extensive, resource-based outdoor recreation (such as parks, wildlife, hunting and fishing, etc.) with emphasis upon recreational planning. Topics include supply and demand for outdoor recreation, identification of present and future recreational needs, policy considerations, administration of recreational land uses, and various problems associated with outdoor recreation. Reading, discussion, and student-led 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 operations, 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, traditional and contemporary approaches to the comprehensive plan; elements of land use and transportation planning, the legal foundations of zoning, and the organization 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. Alteration of the natural and human environment for perceived economic and social benefits often has significant adverse consequences. Recognition of this problem is reflected in federal, state, and local laws and regulations requiring environmental impact statements. The course provides an introduction to the analysis and preparation of environmental impact assessments. Prerequisites: Senior standing and GEOG 350 or permission.

GEOG 556 Field Geography
2-4 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. Prerequisite: GEOG 265 or 375, and 582, or consent of department.

GEOG 567 Computerized Geodata Handling and Mapping
4 hrs. Principles and procedures involved in structuring and using computerized geographic data systems (applicable to land use analysis, impact assessments, and urban and regional planning), and in representing these data by computer mapping methods. Equivalents applications of these methods will be made to both microcomputers and larger main-frame computer systems. Prerequisite: Senior or graduate standing.

GEOG 568 Quantitative Methodology
3 hrs. The application of quantitative concepts and methods to the solution of geographic problems. Critical review of quantitative geography, ranging from the use of common statistical techniques to alternate methods of model formation and the analysis of spatial problems. Prerequisite: GEOG 567 or the consent of department.

GEOG 569 Geographic Information Systems
4 hrs. This course focuses on the fundamental concepts and procedures of Geographic Information Systems (GIS), and geographically-referenced information systems capable of assisting decision-making in a variety of situations. Course components include entering both spatial and non-spatial data into computerized format, examining alternative ways of organizing data for GIS computer, then integrating and analyzing mapped and non-mapped data using GIS software systems.

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 contemporary 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 567 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.
GEOLOGY

W. Thomas Straw, Chair
Estella Atekwana
David Barnes
Ronald B. Chase
John D. Grace
William B. Harrison, III
Duane Hampton
Alla Kohew
R. V. Krishnamurthy
William A. Sauck
Christopher J. Schmidt
William A. Smith

Geology Major

Minimum 36 Hours

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 130 Physical Geology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 131 Historical Geology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 335 Mineralogy</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 336 Optical Mineralogy</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 430 Structural Geology</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 439 Geologic Mapping</td>
<td>4</td>
</tr>
</tbody>
</table>

A minimum of a "C" is required in each of the required courses.

Minimum 18 Hours

Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 336 Structural Geology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 430 Structural Geology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 560 Geologic Mapping</td>
<td>4</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 130 Physical Geology
- GEOL 131 Historical Geology

One of the following options is recommended:

- GEOL 335 Mineralogy
- GEOL 336 Optical Mineralogy
- GEOL 440 Petrology/Petrography

- GEOL 301 Minerals and Rocks
- GEOL 433 Invertebrate Paleontology

Additional hours in geology.

Course substitution from other geology offerings can be made with the consent of the student's advisor.

Geophysics Major

The Geology 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 Geology department as early as possible for advising.

Total Major Hours: 49-54

Major Core: 40-42

Geology (GEOL) (20 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 130 Physical Geology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 131 Historical Geology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 301 Minerals and Rocks</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 430 Structural Geology</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 439 Geologic Mapping</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 560 Introduction to Geophysics</td>
<td>3</td>
</tr>
</tbody>
</table>

Physics (PHYS) (17-18 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 205 Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 206 Mechanics and Heat</td>
<td>Laboratory 1</td>
</tr>
<tr>
<td>PHYS 207 Electricity and Light</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 208 Electricity and Light</td>
<td>Laboratory 1</td>
</tr>
<tr>
<td>PHYS 309 Introductory Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 310 Introductory Modern Physics</td>
<td>Physics Lab</td>
</tr>
<tr>
<td>PHYS 342 Electronics</td>
<td>1</td>
</tr>
</tbody>
</table>

One of the following (3-4 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 330 Thermodynamics and Kinetic Theory</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 352 Optics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 540 Electricity and Magnetism I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 400 Electricity and Magnetism I</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives (9-12 hours)

Three electives from upper-level geology, physics, and engineering courses may be chosen with consent of advisor (9-12 hours).

Mathematics Minor (Required)

(MATH) (21 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 122 Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 123 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 272 Vector and Multivariate Calculus</td>
<td>4</td>
</tr>
<tr>
<td>CS 306 Introduction to Programming FORTRAN</td>
<td>2</td>
</tr>
<tr>
<td>MATH 374 Linear Algebra and Differential Equations</td>
<td>4</td>
</tr>
<tr>
<td>MATH 435 Scientific Programming</td>
<td>3</td>
</tr>
</tbody>
</table>

Group Science Minor For Geology Majors

Minimum 26 Hours

The group science minor is designed for students not electing a mathematics, chemistry, physics, or biology minor. Some modification of these requirements may be made in consultation with the student's departmental advisor.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 101 Animal Biology</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 102 General Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 120 General Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 101 Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 102 Electricity and Light</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 205 Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 206 Mechanics and Heat</td>
<td>Laboratory 1</td>
</tr>
</tbody>
</table>

Electives

At least 4 credit hours selected from the physical or biological sciences with approval of student's advisor.

Earth Science: Teaching Major and Minor

The earth science teaching major and minor are designed for students preparing to teach in the elementary and secondary schools. No grade below a "C" will be accepted in the required courses. All majors must complete a minimum of one semester each of college physics and college chemistry.

Cognate requirements include a college level chemistry course (101, 102, or 103) and a college level physics course (107/108 or 113/114).
BACCALAUREATE WRITING REQUIREMENT
Students who have chosen the Earth Science Teaching Major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:
GEOL 432 Geomorphology
GEOL 435 Sedimentation and Stratigraphy
ENGL 305 Practical Writing
ED 395 School and Society

MAJOR (30 hours) Hrs.
Required Courses
PHYS 104 Introductory Astronomy 3
GEOG 225 Introduction to Meteorology and Climatology 4
GEOL 130 Physical Geology 4
GEOL 131 Historical Geology 4
GEOL 300 Oceanography 3
GEOL 301 Minerals and Rocks 4
GEOL 404 Teaching of Secondary Science 2
GEOL 436 Field Studies in Geology 3
Electives 3

MINOR (20 hours) Hrs.
Required Courses
PHYS 104 Introductory Astronomy 3
GEOG 225 Introduction to Meteorology and Climatology 4
GEOL 130 Physical Geology 4
GEOL 131 Historical Geology 4
GEOL 300 Oceanography 3
GEOL 404 Teaching of Secondary Science 2

Earth Science: Non-Teaching Major and Minor
The non-teaching earth science major and minor program is 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 Geology, 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. Ten (10) credit hours for a minor including GEOL 130, 131 and 301 and/or 436.

Cognate requirements include a college level chemistry course (101, 102, or 103) and a college level physics course (107/108 or 113/114).

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

Hydrogeology Major
Core: 39-40 hrs., Total: 74-75
This hydrogeology major is designed to give individuals at the bachelor's level a strong background in geology, hydrogeology, supporting sciences, mathematics and computer science. This program will prepare students to enter graduate programs and the job market as hydrogeologists.

Required Courses Hrs.
GEOL 130 Physical Geology 4
GEOL 131 Historical Geology 4
GEOL 301 Minerals and Rocks 4
GEOL 411 Principles of Hydrogeology 3
GEOL 430 Structural Geology 3
GEOL 432 Geomorphology 3
GEOL 435 Sedimentation and Stratigraphy 4
GEOL 439 Geologic Mapping 3
GEOL 526 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 562 Shallow Exploration Geophysics 3
GEOL 564 Field Geophysics 3
GEOL 567 Computation Geodata Handling and Mapping 3
GEOL 582 Remote Sensing of the Environment 3

Required Supporting Courses
MATH 122 Calculus II 4
MATH 123 Calculus II 4
PHYS 205 Mechanics and Heat 4
PHYS 206 Mechanics and Heat Laboratory 1
PHYS 207 Electricity and Light 4
PHYS 208 Electricity and Light Laboratory 1

Students who have taken Physics 113, 114 and 115, or their equivalent will be required to take Physics 214 (1 hr.) and Physics 215 (1 hr.)
CHEM 102 General Chemistry I 4
CHEM 120 General Chemistry II 4
CHEM 365 Introduction to Organic Chemistry 4
CS 111 Computer Programming I 3

MINORS
Students must elect one of the following minors: Biology, Computer Science, Chemistry, Mathematics, Geography, or Group Science for Geology Majors.

RECOMMENDED ADDITIONAL COURSES
CHEM 222 Quantitative Analysis 4
CHEM 525 Techniques in Water Analysis 3
MATH 274 Introduction to Differential Equations 3
MATH 364 Statistical Methods 3
CS 201 Programming in FORTRAN 2
COM 104 Public Speaking 3
COM 170 Interpersonal Communication I 3
ENGL 305 Practical Writing 4

A minimum of a “C” is required in each of the required Geology courses, and a “C” average in all cognate courses.

BACCALAUREATE WRITING REQUIREMENT
Students who have chosen the Hydrogeology major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:
GEOL 432 Geomorphology
GEOL 435 Sedimentation and Stratigraphy
EE 100 Fundamentals of Circuits 3
EE 335 Soil Mechanics 3
GEOG 265 Map, Chart, and Air Photo Reading 3
GEOG 375 Cartography 4
GEOG 553 Water Resource Management 3
GEOG 557 Environmental Impact Assessment 3
GEOG 567 Comparative Geodata Handling 4
GEOL 430 Structural Geology 3
GEOL 536 Glacial Geology 3
GEOL 560 Geophysics 3
GEOL 564 Field Geophysics 3
PAPR 350 Water Quality and Microbiology I 3
PAPR 351 Water Quality and Microbiology II 2
PHYS 115 and 116 Physics II 5

BACCALAUREATE WRITING REQUIREMENT
Students who have chosen the Field Hydrogeology Major will satisfy the Baccalaureate Writing Requirement by successfully completing:
GEOL 432 Geomorphology

Science and Mathematics Teaching Minor
The Department of Geology participates in the Science and Mathematics teaching minor for students in the elementary curriculum. For a full description of the program, consult its listing under the "Interdisciplinary Programs" section in the College of Arts and Sciences.

Geology Courses (GEOL)
A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

GEOL 100 Earth Studies 4 hrs.
Students are introduced to the origin of the solar system and the earth-moon system with emphasis on humankind's place in the universe. Students will investigate the materials and processes that shape the earth and the processes that affect our lives. Mineral, water, and energy resources will be considered in the context of their occurrence and limitations. Plate tectonics and the origin and evolution of life will be used to frame the course.

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 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.

GEOL 131 Historical Geology 4 hr.
Geologic time, evolution of prehistoric life, and principles of earth history with case examples from North America. Prerequisite: GEOL 130 or GEOL 100 and 129.

GEOL 133 Earth Systems 4 hrs.
A study of the earth from an environmental perspective. Origin of the earth and solar system, physical and chemical structure of the earth, chronology, and the use of the scientific method to advance this understanding. Focus is on the hydrosphere, atmosphere, biosphere, and lithosphere and their interactions.

GEOL 134 Historical 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 200 Evolution of Life—A Geological Perspective 4 hrs.
A consideration of the diversity of life through time with emphasis on the geological constraints on evolution. Evolutionary processes and patterns of selected fossil groups from single-celled organisms to the vertebrates. Co-evolution of plants and animals, and mechanisms of extinction will be discussed.

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.

GEOL 300 Oceanography 3 hrs.
Survey of oceanographic sciences including physical, chemical, biological, and geological oceanography.

GEOL 311 Geology of the National Parks and Monuments 2 hrs.
A study of the origin of geologic features and development of landscapes through geologic time in selected National Parks and Monuments. Students will be expected to read extensively in the available literature.

GEOL 335 Mineralogy 4 hrs.
Introduction to crystallography, crystal chemistry, and determinative mineralogy. Physical and chemical properties, occurrence, uses and determination of about 100 minerals. Lecture 3 hours a week; Laboratory 3 hours a week. Prerequisite: GEOL 100 or GEOL 130, CHEM 101, CHEM 102, or consent of instructor.

GEOL 335 Optical Mineralogy 3 hrs.
Principles and methods of optical crystallography. Study of minerals in crushed grains and in thin sections. Prerequisite: GEOL 335 or consent of instructor.

GEOL 344 Introduction to Environmental Geology 3 hrs.
An introduction to geology of the environment. Emphasis is placed on the geology of natural hazards, waste disposal systems, earthquakes, floods, erosion and sedimentation, volcanic processes related to human occupation of land, and aspects of 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.

GEOL 412 Introduction to Hydrogeology 3 hrs.
This general survey course in hydrogeology introduces the occurrence, movement, and contamination of ground and surface water. Prerequisite: GEOL 301, MATH 122 or MATH 200, CHEM 101 or CHEM 102; and PHYS 107/108 or PHYS 113/114.

GEOL 430 Structural Geology 3 hrs.
Development of rock structures and mechanics of rock deformation. Structural interpretation of geologic maps, cross-sections, and aerial photographs. Prerequisites: GEOL 131; GEOL 301 or GEOL 335; MATH 118; or consent of instructor.

GEOL 432 Geomorphology 3 hrs.
Detailed consideration of the earth's surficial processes including transportation of fluvial, glacial, mass-wasting, eolian, and coastal landforms. Laboratory exercises involve interpretation of topographic maps, geologic maps, and air photographs. Prerequisites: GEOL 131, GEOL 301 or GEOL 335; PHYS 107/108 or PHYS 113/114; CHEM 101 or CHEM 102; and MATH 118 or MATH 200.

GEOL 433 Invertebrate Paleontology 4 hrs.
Morphology, classification, evolution, and stratigraphic distribution of major invertebrate fossil groups. Prerequisite: GEOL 131 or consent of instructor.

GEOL 434 Problems in Geology 1-3 hrs.
Intensive reading and research on a topic in geology under the direction of a member of the geology faculty. Prerequisite: 16 hours in Geology and permission of department.

GEOL 435 Sedimentation and Stratigraphy 4 hrs.
Processes, characteristics, and relationships among fluvial, deltaic, strand plain, lagoon, shelf, and slope terrigenous depositional systems. Laboratory includes textural analysis, sedimentary structures, paleocurrent analysis, electric logs, subsurface maps, and application of statistical and computer methods to the solution of sedimentologic problems and basin analysis. Course includes a three-day field trip. Prerequisite: GEOL 131; 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 interpretations, and compilations of the geologic history of assigned study areas. Prerequisites: GEOL 301 or GEOL 440; GEOL 430; or consent of instructor.

GEOL 440 Petrology and Petrography 3 hrs.
Classification, origin, and description of igneous, sedimentary, and metamorphic rocks. Laboratory study of rocks and thin sections. Prerequisite: GEOL 336; CHEM 120.

The prerequisites to 500-level courses are: junior status and 12 hours of coursework in geology or consent of instructor. There may be specific prerequisites to individual courses.

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 hrs.
An introduction to the principles and practices that are peculiar to environmental consulting. Emphasis is placed on the legal, business, and practical considerations needed to conduct a consulting practice. This course is not to be counted toward the 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. Emphasis is on quantitative aspects of surface water. Topics include, stream flow, precipitation, evapotranspiration, hydrographs, runoff, probability analysis and modeling.

GEOL 512 Principles of Hydrogeology 3 hrs.
The study of surface and ground water with special emphasis on its occurrence, movement, and relation to the geologic environment. Prerequisite: GEOL 301 or GEOL 335; MATH 122. MATH 123 may be taken concurrently.

GEOL 515 Applied Hydrology 3 hrs.
Application of hydrogeologic theory to water supply networks. Topics include well installation, well testing, aquifer testing, and distribution systems. Prerequisite: GEOL 512.

GEOL 520 Economic Geology 3 hrs.
Origin, occurrence, and utilization of metallic and non-metallic mineral deposits, and mineral fuels. Lecture 3 hours a week. Prerequisite: GEOL 301 or GEOL 335.

GEOL 525 Surface Geophysics 1 hr.
An introduction to the use of those surface geophysical methods used in the investigation of ground water. Includes shallow seismic electrical methods, and ground-penetrating radar. Prerequisite: GEOL 412 or GEOL 512.

GEOL 526 Principles and Practices of Aquifer Testing 1 hr.
Introduction to the methods of aquifer testing with emphasis on step drawdown pump-tests, forty-hour pumping test with recovery, slug tests and bail tests, data processing, using computer software, water level recorders, data loggers, and water level measuring equipment. Prerequisite: GEOL 412 or GEOL 512.

GEOL 527 Principles of Well Drilling and Installation 1 hr.
An introduction to hollow-stem auger drilling and well installation. Rotary drilling with mud and air, cable tool drilling, monitoring well design, sample collection and description; cuttings, split spoon, and Shelby tube, borehole geophysics, and installation and development of wells. Prerequisite: GEOL 412 or GEOL 512.

GEOL 528 Principles and Practices of Ground-water Sampling and Monitoring 1 hr.
An introduction to state-of-the-art techniques for sampling, monitoring, and evaluating ground water systems and surface water interactions. Includes quality control and assurance procedures, ground-water sampling equipment and procedures, field hydrochemical equipment and procedures, and vadose zone sampling of water and gas. Prerequisite: GEOL 412 or GEOL 512.

GEOL 530 Plate Tectonics and Earth Structure 3 hrs.
Major tectonic features and internal structure of the earth in relation to plate tectonics, critical examination of the tenants of plate tectonics. Prerequisites: GEOL 301 or GEOL 335; GEOL 430 or consent of instructor.

GEOL 536 Glacial Geology 3 hrs.
A study of the mechanics of glacier movement, processes of glacial erosion and deposition, and the distribution of glacial features in space and time. Special emphasis will be placed on the glacial geology of the Great Lakes area. Prerequisites: GEOL 301 or GEOL 335.

GEOL 544 Environmental Geology 3 hrs.
Geology related to human affairs and land use planning. Includes engineering properties of earth materials, waste disposal systems, slope stability, floods, erosion and sedimentation, land subsidence, volcanic hazards, earthquakes, and urban geology. Field trips required. Prerequisite: GEOL 131; GEOL 301 or GEOL 335; or consent of instructor.

GEOL 560 Introduction to Geophysics 3 hrs.
Seismology, gravity, geomagnetism, electrical resistivity, and heat measurements applied to the determination of the internal structure of the earth. Two lectures and three hours of practical laboratory-introduction to geophysical instrumentation. Prerequisites: GEOL 301 or GEOL 440; GEOL 430; MATH 122; two term tests, college physics, or consent of instructor.

GEOL 561 Reflection Seismology 3 hrs.
Reflection seismology and related techniques as applied to petroleum exploration and deep crustal exploration. Theoretical background, data collection, data processing and interpretation will be discussed. Prerequisites: GEOL 560; CS 306; MATH 123.

GEOL 562 Gravity and Magnetic Exploration 3 hrs.
Gravity and Magnetic methods applied to tectonic, mineral exploration, hydrogeologic and crustal studies. Theoretical background, instrumentation, surveying techniques, data reduction, processing, and computer modeling and interpretation will be discussed. Two lectures and three hours of laboratory, problem solving, and field exercises. Prerequisites: GEOL 560, MATH 123.

GEOL 563 Electrical Methods 3 hrs.
Resistivity sounding and profiling, induced polarization, spontaneous potential, electromagnetic methods using natural and artificial fields. Two lectures and 3 hr. laboratory with field studies and laboratory modeling. Prerequisites: GEOL 560; CS 306; MATH 123; PHYS 440; or consent of instructor.

GEOL 564 Field Geophysics 3 hrs.
Field studies demonstrating the use of seismic refraction, gravity, and electrical resistivity methods for glacial geology and ground-water problems in the Kalamazoo area. Prerequisite: GEOL 560.

GERMAN
See "Foreign Languages and Literatures" in the College of Arts and Sciences.
The Department of History offers several courses for students who have transferred from two-year institutions. Students intending to continue in humanities, arts, or related fields 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.

Baccalaureate Writing Requirement

Students who have chosen the History major will satisfy the Baccalaureate Writing Requirement by successfully completing HIST 390 Introduction to the Study of History.

Majors

Judith Stone, Undergraduate Adviser

History Major

COLLEGE OF ARTS AND SCIENCES CURRICULA; OTHER CURRICULA

Major requirements:
1. HIST 190, 390, 396
2. United States history including at least 6 hrs. at the 400/500 level
3. Non-Western history including at least 3 hrs. at the 400/500 level
4. European and/or General history including at least 3 hrs. at the 400/500 level
5. Minimum of 36 hrs. in history including at least 15 hrs. at the 400/500 level.

In addition to the major requirements, students must complete the following:
1. A group social science (SOS) minor of at least 27 hours including:
   - ANTH 120 or 240
   - CONW 201, 202
   - GEON 102 or 105 or 205
   - PSY 100
   - SOC 100
   - Approved electives from above disciplines, 300-level or above
2. One approved literature course in the Department of English at the 300 level or above
3. One approved course in philosophy or religion, or in the history of political, economic, or ethnographic theory, at the 300 level or above
4. A foreign language through the 101 level by course work or by placement examination.

NOTES: (1) Each student must complete at least two approved courses in American Indian history or culture, women's history or women's studies, African-American history or culture, or Hispanic-American history or culture. These courses may be included in the history major or group social science 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.
(2) All course work at the 300 level or above in the History major, group social science minor, and required cognates must be completed within ten years of commencing a directed teaching assignment. History majors must have completed at least six hours of History in courses numbered 420-596 with grades of "B" or better to be approved by the department for directed teaching.

Minors

Ronald Davis, Undergraduate Adviser

HISTORY 129
Courses By Topic

 BASIC COURSES
 100 Early Western Civilization
 101 Modern Western World
 103 History and Current Events
 106 Historical Writing
 120 Outline of American History
 130 Introduction to Canadian Studies
 204 Business History
 210 American History to 1890
 211 American History since 1890
 212 American Culture
 230 Introduction to Canadian Studies
 250 Michigan History
 270 Asian Civilizations
 298 Directed Reading in History

 NORTH AMERICA
 313 American Diplomatic History
 315 Popular Art and Architecture in America
 316 Women in United States History
 318 Environment and the American Experience
 320 American Military History
 322 American West
 324 Everyday Life in America
 326 American Indian Cultural History
 328 African-American Cultural History
 330 History of Canada
 416 Topics in Michigan History
 420 Colonial America
 421 The New Nation: American Revolution and Independence
 422 Antebellum America
 424 The Civil War and Reconstruction
 425 United States, 1877-1919
 426 United States 1920-1940
 427 United States 1940-1960
 428 United States since 1960
 432 Women in America to 1870
 433 Women in America since 1870
 434 American Indians to 1887
 435 American Indians since 1887
 436 Topics in African-American History
 439 Topics in United States History
 530 Studies in Early American History
 535 Studies in Recent American History

 EUROPE
 336 Women in European History
 349 Ancient Near East
 350 Ancient Greece and the Hellenistic World
 351 Ancient Rome
 360 The Medieval World: Society and Culture
 362 History of England
 363 Britain and the British Empire
 364 Medieval Europe: Culture and Society
 366 Russia Yesterday and Tomorrow
 368 History of European Nations
 440 Imperial Rome
 441 Early Christianity
 442 Byzantine Civilization
 444 Early Medieval History
 445 Later Medieval History
 446 Renaissance Europe
 447 The Reformation
 450 Europe in the 17th and 18th Centuries
 452 French Revolution and Napoleon
 458 Europe 1815-1871
 457 Europe 1871-1919
 458 Europe 1919-1945
 460 Europe since 1945
 462 Great Ages in English History
 465 Russia to 1855
 466 Russia since 1855
 468 Topics in European History
 550 Studies in Medieval History
 565 Studies in Modern European History

 NON-WESTERN
 370 History of Latin America
 376 Modern East Asia
 384 Modern Islam
 385 Modern Middle East
 388 Introduction to African Civilization
 471 History of Latin American Nations
 476 Traditional China
 477 Modern China
 479 Modern Japan
 485 Early Islam
 488 History of West Africa
 489 Topics in Asian and African History
 585 Studies in Asian and African History

 GENERAL
 300 Arts and Ideas: Ancient/Medieval
 301 Modern Arts and Ideas
 306 Technology and Culture
 309 History of Medicine and Medical Care
 320 Global History 1850-1945
 333 The World since 1945
 400 Topics in History
 414 Topics in Military History
 418 Topics in Legal and Constitutional History
 517 Topics in Economic and Social History
 519 Topics in Intellectual and Cultural History

 THEORY AND PRACTICE
 390 Introduction to the Study of History
 396 Teaching Methods for Secondary Schools
 404 Introduction to Public History
 406 Archives Administration
 408 Museum Studies
 410 Historic Preservation
 412 Local History Techniques
 496 Senior Seminar
 499 Senior Thesis
 515 Topics in Public History
 591 Topics in Theory and Practice
 592 Computers in Historical Research
 595 History Writing Workshop
 596 Local History Workshop

 OTHER COURSES
 495 Internship
 498 Directed Research
 500 Studies in History
 510 Colloquium
 590 Proseminar

 History Courses (HIST)

 A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

 HIST 100 Early Western Civilization
 3 hrs.
 Survey of major developments in European civilization from the first millennium B.C. to approximately 1500.

 HIST 101 Modern Western World
 3 hrs.
 Survey of major developments in Western civilization from the Renaissance to the present.

 HIST 102 Western Civilization: The Modern Era
 3 hrs.
 Survey of major developments in European civilization from the late nineteenth century to the present.

 HIST 103 History and Current Events
 3 hrs.
 Historical background of a contemporary issue and news events.

 HIST 110 Outline of World History
 3 hrs.
 Major patterns and themes in world history considered from the perspective of the major centers of civilization.

 HIST 120 Outline of American History
 3 hrs.
 Overview of major themes and developments in the history of the United States. Students who complete HIST 120 may not receive credit for HIST 210 or 211.

 HIST 145 Heroes and Villains in the Middle Ages
 3 hrs.
 Cross listed with MIDL 145.

 HIST 190 Historians in the Modern World
 3 hrs.
 A survey of the historical professions and the academic preparation needed to enter them.

 HIST 204 Business History
 3 hrs.
 The business community as an integral part of history and society. Uses the case study method and business biography to explore economic and financial issues in historical setting. Covers the whole range of Western history with emphasis on the American experience.

 HIST 210 American History to 1890
 3 hrs.
 General survey of United States history from colonial times to the late nineteenth century.

 HIST 211 American History since 1890
 3 hrs.
 General survey of United States history with emphasis on the twentieth century.

 HIST 212 American Culture
 3 hrs.
 Major concepts in American life as seen from the perspective of literature, the arts, and mass media, and the role of these forms of communication on the development of public historical consciousness.

 HIST 250 Michigan History
 3 hrs.
 Political, economic and social development of Michigan with emphasis on its relation to the history of the United States.

 HIST 270 Asian Civilizations
 3 hrs.
 Historical survey of the major civilizations of Asia and their interaction with one another and with the West.

 HIST 298 Directed Reading in History
 1-3 hrs.
 Registration requires approval of the supervising faculty member and the Department Chair. May be repeated to a maximum of three semester hours.

 HIST 300 Arts and Ideas: Ancient/Medieval
 3 hrs.
 Survey of the history and interplay of intellectual and artistic developments in the West from ancient through medieval times.

 HIST 301 Modern Arts and Ideas
 3 hrs.
 Survey of the history and interplay of intellectual and artistic creativity from the Renaissance to the present. Covers all major areas of material culture.

 HIST 306 Technology and Culture
 3 hrs.
 Major technological developments throughout history, and interaction between technological change and culture. Survey of ancient and medieval technology, the industrial revolution, and the twentieth century, including aspects
emphasis on cultural achievements and
3 hrs.
Survey of the development of medicine as a science, a healing agency, and a social institution. Includes medical achievements from ancient to modern times, overview of the changing role of medical experts in various cultures, medical education, medical social work, and evolution of the nursing profession.

HIST 313 American Diplomatic History
3 hrs.
History of American foreign relations from the American Revolution to the present, emphasizing diplomacy of the twentieth century.

HIST 314 American Minorities
3 hrs.
Surveys of the historical experiences of American ethnic groups such as Black Americans, Native Americans, and major European, Asian, and Hispanic communities. Topics listed in Schedule of Classes. May be repeated under different topics. Topics may be cross-listed with BAS 300 or BAS 301.

HIST 315 Popular Art and Architecture in America
3 hrs.
Popular themes in American history as shown in paintings, buildings, cartoons, and commercial art. Extensive use of local illustrations adaptable to elementary and secondary teaching.

HIST 316 Women in United States History
3 hrs.
Women’s legal and social status, work, daily life, and participation in major events and processes in United States history; variety of women’s experience due to class, race, region, ethnicity, and religion. Survey of the women’s movement and emergence of feminist perspectives.

HIST 318 Environment and the American Experience
3 hrs.
Impact of environmental conditions on American historical and cultural development; changing attitudes toward environmental issues.

HIST 320 American Military History
3 hrs.
Survey of major events and developments in North American and United States military history from the eighteenth century to the present.

HIST 322 The American West
3 hrs.
A study of the exploration and settlement of the North American continent. Topics include Indian relations, utilization of land and resources in the fur trade, mining, and cattle ranching, and the establishment of law and order on the frontier.

HIST 324 Everyday Life in America
3 hrs.
Introduction to the study of artifacts and the built environment in understanding everyday life in America. Artifacts as social and cultural documents in the American experience and sources for examining culture.

HIST 326 American Indian Cultural History
3 hrs.
Survey of history and culture of American Indians from earliest times to the present: emphasis on cultural achievements and diversity, myths and prejudices of non-Indian Americans, and Indian-government interaction.

HIST 328 African-American Cultural History
3 hrs.
Survey of history and culture of African-Americans from colonial times to the present; emphasis on cultural achievements and diversity, myths and prejudices of non-African-Americans, struggle for civil and human rights, and the dilemmas of integration versus separate identity. Brief survey of United States in a pan-Diaspora context.

HIST 330 History of Canada
3 hrs.
A survey of Canada from the sixteenth century to the present: Special attention to the sources of Anglo-French discord and Canada’s changing relationship with the United States.

HIST 332 Global History 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 Homeric age, and development of the polis. Examination of the contrasting city-states of Athens and Sparta, as well as the unique cultural achievements and legacy of Hellenism. Alexander the Great and the Hellenistic world.

HIST 351 Ancient Rome
3 hrs.
Roman history from earliest beginnings to the decline and fall of the Roman empire. The early Italic, Etruscan, and Greek cultures of ancient Italy prior to the emergence of Rome, rise of the Roman republic and conquest of the Mediterranean, civil wars, development of the empire, and 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; British search for new roles in the twentieth century.

HIST 364 Modern Europe: Culture and Society
3 hrs.
Social and cultural history of Europe in the late nineteenth and twentieth centuries with emphasis on the post-World War II period: reconstruction, era of the Cold War; the dilemma of economic integration and cultural fragmentation; Europe in the wider world, modern European cultural life.

HIST 366 Russia Yesterday and Tomorrow
3 hrs.
Historical survey of Russia and the regions included in the former Soviet Union. Emphasis on the Russian cultural core and its potential for the reformulation of the Russian republic. Consideration of the ideals and realities of the Soviet Union, and the triumph of culture over ideology in its collapse.

HIST 368 History of European Nations
3 hrs.
Surveys of selected European national histories. Emphasis on the growth of national consciousness and national culture 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 Modern East Asia
3 hrs.
The recent history of China, Japan, and Korea: tradition, reform, and revolutionary movements; ideologies 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 on elements which contribute to the uniqueness of the African experience.

HIST 390 Introduction to the Study of History 3 hrs.
Major themes and developments in historiography and historical thought. Ideas and interpretations of history from different periods are studied in their historical context. Prerequisite: HIST 190.

HIST 396 Teaching Methods for Secondary Schools 3 hrs.
Theories and techniques for the effective teaching of history at the secondary level. Evaluation and selection of reading assignments and instructional materials; methods of measuring cognition of historical concepts, course organization and learning activities for students of varying backgrounds and abilities; use of interactive media; the role of history in social science and humanities education, and of historians as curriculum leaders. Prerequisite: In addition to 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 era, emergence of the United States as a superpower.

HIST 428 United States since 1960 3 hrs.
Major domestic developments and international challenges since the Kennedy presidency.

HIST 432 Women in America to 1870 3 hrs.
Women’s historical experiences from the early 16th century to 1870; focus on women’s relationships to the economy, the family, politics, changing concepts of gender and ideals of womanhood; variations in experience by class.

HIST 433 Women in America Since 1870 3 hrs.
Continuation of HIST 432.

HIST 434 American Indians to 1887 3 hrs.
Historical survey of the native peoples of North America from origins to the late 18th century. Emphasis on Federal-Indian relations, settlement, contact, Indian removal, military confrontations and treaties, and major aspects of culture.

HIST 435 American Indians Since 1887 3 hrs.
American Indian history since the Dawes Land Allotment Act of 1887. Emphasis on Indian rights, education, health, stereotypes and self-concepts, communal relations, reservation and urban life, leadership, and evolution of federal policy.

HIST 436 Topics in African-American History 3 hrs.
Major themes and topics in African-American history in North America and the Caribbean. Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 439 Topics in United States History 1-3 hrs.
Examination of major social, economic, intellectual and cultural themes and issues in United States history. Topics announced in Schedule of Classes. May be repeated under different topics.

HIST 440 Imperial Rome 3 hrs.
Rome from the close of the republic to the zenith of the imperial age, with emphasis on the first century of the empire.

HIST 441 Early Christianity 3 hrs.
History of the Christian church and community from its inception to its triumph in the Western and Eastern Roman empires; emphasis on the relationships between church and state.

HIST 442 Byzantine Civilization 3 hrs.
The fusion of Western Roman, Hellenistic, Christian, and diverse cultural traditions into a unique Byzantine phenomenon. Coverage from Constantine the Great to the capture of Constantinople by the Ottoman Turks in 1453.

HIST 444 Early Medieval History 3 hrs.
Evolution of medieval institutions and culture from the collapse of Rome to approximately the twelfth century.

HIST 445 Later Medieval History 3 hrs.
The maturation and flourishing of medieval civilization from approximately the twelfth century to the disintegration of medieval unity in the Renaissance. Emphasis on social and political institutions and intellectual developments.

HIST 446 Renaissance Europe 3 hrs.
Political, intellectual, and artistic developments in Renaissance Europe, and the process of dissolution of the medieval world-view in the fourteenth and fifteenth centuries.

HIST 447 The Reformation 3 hrs.
The collapse of European religious unity in the sixteenth century; religious wars, the appearance of regional churches, and Roman Catholic renewal; early traces of scientific and intellectual revolutions; arts and culture of the era.

HIST 450 Europe in the Seventeenth and Eighteenth Centuries 3 hrs.
Major social, political, intellectual and cultural developments from the Thirty Years War through the Enlightenment.

HIST 452 French Revolution and Napoleon 3 hrs.
Background, major events and phases of the French Revolution; Napoleon and the French empire; impact of the revolution on Europe and the rest of the world.

HIST 456 Europe 1815-1871 3 hrs.
Europe from the Congress of Vienna to the Franco-Prussian War. Emphasis on the struggle between conservative and liberal forces and the growth of modern nationalism and national unity; economic and social
impact of industrialization; arts and culture of the era.

HIST 457 Europe 1871-1919
3 hrs.
Continued growth of nationalism and national rivalries; the golden age of European imperialism. Evolution of alliance patterns; background and major military and political events of World War I; economic and social impact of the second industrial revolution; arts and culture of the era.

HIST 458 Europe 1919-1945
3 hrs.
Aftermath and political settlement of World War II; 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 1655
3 hrs.
History of Russia from medieval times to the beginning of the reign of Tsar Alexander II and the close of the Crimean War.

HIST 466 Russia since 1855
3 hrs.
History of Russia since the mid-nineteenth century. Political, social, economic and cultural developments presaging the revolutions of 1905 and 1917; evolution of the Soviet state.

HIST 468 Topics in European History
1-3 hrs.
Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 471 History of Latin American Nations
3 hrs.
History of various Latin American nations and regions, such as Mexico and the Caribbean, Brazil, Argentina, and the Andean states. Topics listed in Schedule of Classes. May be repeated under different topics.

HIST 476 Traditional China
3 hrs.
History of China from the earliest beginnings of Chinese civilization to the collapse of the Ming Dynasty in the seventeenth century.

HIST 477 Modern China
3 hrs.
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 course work in public history.

HIST 496 Senior Seminar
3 hrs.
Interpretive and theoretical issues. Preparation of a major paper. Topics listed in Schedule of Classes. Prerequisite: 24 hours of course work in history.

HIST 498 Directed Research
3 hrs.
Individualized research and production of a written project supervised by a faculty member. Registration requires a research proposal approved by a faculty member and the Department Chair. Prerequisite: 18 hours of history at the 300-level and above.

HIST 499 Senior Thesis
3-6 hrs.
Research, preparation and defense of a supervised research project. Registration requires approval by two faculty supervising project and the Department Chair. Honors students may substitute HNRS 499 (Honors College Theses) 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 556 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 595 History Writing Workshop
1-3 hrs.
Practicum in the writing of history: editing and publishing, preparation of written materials for lay readers and audiences outside the discipline. May be repeated to a maximum of six semester hours.
HIST 596 Local History Workshop
1-3 hrs.
Practicum in research techniques for problems in local and small community history, including oral tradition, genealogy, and interdisciplinary method. May be repeated to a maximum of six semester hours.

INTERNATIONAL AND AREA STUDIES PROGRAM
See “Interdisciplinary Programs” in the College of Arts and Sciences.

LATIN
See “Foreign Languages and Literatures” in the College of Arts and Sciences.

LATVIAN
See “Foreign Languages and Literatures” in the College of Arts and Sciences.

LINGUISTICS
See “Foreign Languages and Literatures” in the College of Arts and Sciences.

MATHEMATICS AND STATISTICS
Ruth Ann Meyer, Chair
Yousef Alavi
Robert Blefko
Christine Browning
Joseph T. Buckley
Dwayne Chanell
Gary Charttrand
John Crowell
Cifton Ealy
Paul Eningenburg
Anthony Gioia
Christian Hirsch
Philip Haisel
S.P. Kapoor
Robert Laing
Niloufer Mackey
John Martin
Joseph McKean
Daniel Mihalko
Joshua Naranjo
Dennis Pence
John W. Petro
Thomas Richardson
James Riley
Allan Schwenk
Charlene Sheets
Gerald Sievers
Arthur Stoddart
Michael Stolte
Jay Treiman
Walter Turner
Laura VanZoest
Jung Chao Wang
Arthur White
Kung-Wei Yang
Qiy Zhu

The Mathematics and Statistics Department offers a wide variety of courses and programs in both theoretical and applied areas. There are four majors available: Applied, General, Secondary Teaching, and Statistics. Minors available include the General Minor, Applied Statistics Minor, Statistics, Secondary Teaching of Mathematics, and the Science and Mathematics Teaching Minor. These major and minor programs incorporate emphasis on computer methods, mathematical modeling, and problem solving. The various mathematics and statistics majors all require two semesters of calculus as well as introductory computer science courses. Students may begin coursework in these areas while deciding on a branch of mathematics in which to specialize. During the first year interested students should contact Barbara McKinney, student advisor/assistant to the chair, through the Mathematics and Statistics Department. Phone (616) 387-4510 or write: Mathematics and Statistics Department, Western Michigan University, Kalamazoo, MI 49008. All majors must contact a faculty advisor in mathematics and statistics during their second year of study. All minors, except General Math minors, must contact an advisor.

At most, one course with a grade below “C” can be applied toward a major or minor in Mathematics or Statistics.

Mathematics Major Options
Applied Mathematics Option
There is a growing need for people who combine knowledge of mathematics and science to formulate and solve practical problems. The intent of the Applied Mathematics Option is to provide a broad range of computational and analytical skills, practice in mathematical modeling and some fundamental knowledge of a scientific discipline. Computational and applied mathematicians are employed in a variety of positions in industry, business, and government. Students must complete a minor in one of Biomedical Sciences, Chemistry, Computer Science, Physics, or Statistics. Students should select their minor in the area in which they intend to apply their mathematical talents, and then they should select electives that are particularly suited to the problems in that area.

MATH 122 Calculus I 4
MATH 123 Calculus II 4
MATH 145 Discrete Mathematical Structures OR
MATH 314 Mathematical Proofs 3
MATH 230 Elementary Linear Algebra 4
MATH 272 Vector and Multivariate Calculus 4
MATH 274 Introduction to Differential Equations 3
MATH 364 Statistical Methods 4
MATH 402 Mathematical Modeling 3
Three of: MATH 330, 362, 408, 440, 445, 490, 507, (510 or 530), 567, 568, 570, 572, 574 9-12

COGNATE SCIENCE REQUIREMENTS:
CS 111 Computer Science I 4
CS 201 Programming in FORTRAN 2
MATH 506 Scientific Programming 3
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 OR
CHEM 101 or 102 General Chemistry 4/1-5

The Physics/Chemistry courses will satisfy the Area III General Education requirements in the Distribution Program. MATH 507 may be substituted for MATH 506 in the above “Cognate Science Requirements” and better prepared students are encouraged to do so. However, MATH 507 cannot be counted both as a mathematics elective and as a cognate science 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 567 and CHEM 101 or CHEM 102. Computer Science minors should select MATH 145 and either MATH 440 or MATH 445. Physics minors must select MATH 314 and MATH 570. Students in the Applied Mathematics Option who elect the Statistics minor should take the CS 201 course in the cognate science requirements and would be exempt from CS 306 in the Statistics minor.

NOTE: Graduate study in mathematics typically requires MATH 314, MATH 330, and MATH 570.

BACCALAUREATE WRITING REQUIREMENT
Students who have chosen the Applied Mathematics option will satisfy the Baccalaureate Writing Requirement by successfully completing MATH 402 Mathematical Modeling.
General Mathematics Option

The General Mathematics Option is a flexible program that may be combined with minors in diverse areas such as physics in the natural sciences, economics in the social sciences, or even be used as a base for law school. This option also serves as excellent preparation for graduate study in mathematics. A student in this program should develop, in addition to a broad background in mathematics, an ability for communicating mathematics and for rigorous logical thinking.

**CORE (12 hrs.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 122 Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 123 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 230 Elementary Linear Algebra</td>
<td>4</td>
</tr>
</tbody>
</table>

**REQUIRED (17 hrs.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 272 Vector and Multivariate Calculus</td>
<td>4</td>
</tr>
<tr>
<td>MATH 314 Mathematical Proofs</td>
<td>3</td>
</tr>
<tr>
<td>MATH 391 Modern Algebra I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 440 Graphs and Mathematical Models</td>
<td></td>
</tr>
<tr>
<td>OR MATH 445 Algorithmic and Applied</td>
<td>3</td>
</tr>
<tr>
<td>Combinatorics</td>
<td></td>
</tr>
<tr>
<td>MATH 570 Advanced Calculus</td>
<td>3</td>
</tr>
</tbody>
</table>

**ELECTIVES (select three)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 274 Introduction to Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 340 Fundamental Concepts of Geometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH 362 Probability</td>
<td>4</td>
</tr>
<tr>
<td>MATH 364 Statistical Methods</td>
<td>4</td>
</tr>
<tr>
<td>MATH 402 Introduction to Topology</td>
<td>3</td>
</tr>
<tr>
<td>MATH 430 Modern Algebra II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 490 Topics in Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 506 Scientific Programming</td>
<td>3</td>
</tr>
<tr>
<td>MATH 510 Applied Matrix Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 529 Introduction to Topology</td>
<td>4</td>
</tr>
<tr>
<td>MATH 530 Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 531 Real Analysis</td>
<td>4</td>
</tr>
<tr>
<td>MATH 572 Vector Calculus and Complex Variables</td>
<td>4</td>
</tr>
<tr>
<td>MATH 574 Advanced Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 580 Number Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

*(at least one of which will be chosen from MATH 430, MATH 522, MATH 571)*

**BACCALAUREATE WRITING REQUIREMENT**

Students who have chosen the General Mathematics option will satisfy the Baccalaureate Writing Requirement by successfully completing MATH 314 Mathematical Proofs.

Secondary Teaching Option

The Secondary Teaching Option, which combines theoretical mathematics with teaching techniques, is designed for students planning to teach in a junior or senior high school. With the current national focus on the improvement of mathematics and science education, this program offers a timely and attractive option.

A minimum grade point average of 2.5 must be attained in this major option to satisfy the requirements of this program.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 122 Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 123 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 230 Elementary Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 314 Mathematical Proofs</td>
<td>3</td>
</tr>
<tr>
<td>MATH 330 Modern Algebra I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 340 Fundamental Concepts of Geometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH 350 Teaching of Middle School Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 351 Computing Technology in Secondary School Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 440 Graphs and Mathematical Models</td>
<td></td>
</tr>
<tr>
<td>MATH 450 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>
</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, pharmaceuticals, demography, economics, and the health sciences. Shortages of qualified statisticians are anticipated through the next decade.

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MATH 122 Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 123 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 230 Elementary Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 272 Vector and Multivariate Calculus</td>
<td>4</td>
</tr>
<tr>
<td>MATH 314 Mathematical Proofs</td>
<td>3</td>
</tr>
<tr>
<td>MATH 362 Probability</td>
<td>4</td>
</tr>
<tr>
<td>MATH 364 Statistical Methods</td>
<td>4</td>
</tr>
<tr>
<td>MATH 391 Statistical Consulting</td>
<td>1</td>
</tr>
<tr>
<td>MATH 460 Introduction to Mathematical Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 567 Statistical Design and Analysis of Experiments</td>
<td>3</td>
</tr>
<tr>
<td>OR MATH 568 Regression Analysis</td>
<td>3-4</td>
</tr>
<tr>
<td>MATH 464 Introduction to Statistical Computing</td>
<td>3</td>
</tr>
</tbody>
</table>

Approved Electives (MATH 330 or 340) 3-4

Statistics Minor Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 260 Elementary Statistics</td>
<td></td>
</tr>
<tr>
<td>OR MATH 364 Statistical Methods</td>
<td></td>
</tr>
<tr>
<td>OR MATH 366 Introduction to Statistics</td>
<td>4</td>
</tr>
<tr>
<td>MATH 362 Probability</td>
<td>4</td>
</tr>
<tr>
<td>MATH 567 Statistical Design and Analysis of Experiments</td>
<td>3</td>
</tr>
</tbody>
</table>

Approved Electives 3-4

The elective would normally be selected from the following list of courses: MATH 563, 566, 567, 568, and 568. An approved introductory course in statistics may be substituted for either 260, 364 or 366.

Applied Statistics Minor Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 464 or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>MATH 567</td>
<td>4</td>
</tr>
<tr>
<td>Two of MATH 563, 566, 568</td>
<td>6</td>
</tr>
</tbody>
</table>

Elementary and Middle School Teaching Minor Option

Students in an Elementary School and Middle School curriculum must contact a mathematics advisor for information on available mathematics programs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 150 Number Concepts for Elementary/Middle School Teachers</td>
<td>4</td>
</tr>
<tr>
<td>MATH 151 Geometry for Elementary/Middle School Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH 265 Probability and Statistics for Elementary/Middle School Teachers</td>
<td>4</td>
</tr>
</tbody>
</table>
Teaching Minor for students in the elementary curriculum. For a full description of the program, consult its listing under the "Interdisciplinary Programs" section in the College of Arts and Sciences.

Honors in Mathematics

Note: The following are the requirements for graduation with Honors in Mathematics:

Qualified students may plan a program to graduate with honors in mathematics or statistics. The requirements are:

1. Grade point average of at least 3.7 in mathematics and statistics courses.
2. Overall grade point average of at least 3.25.
3. Completion of two of the following:
   - an honors seminar (can be the Putnam Seminar)
   - an upper-level theoretical course
   - an approved independent study project leading to a paper or presentation

Interested students should see the associate chair in their junior year or early in their senior year to plan an "honors program.”

Putnam Seminar

The Putnam Seminar is a problem solving seminar offered under the course number MATH 390. Under the direction of a faculty member students practice techniques for solving very challenging problems. Students in the seminar may participate in the William Lowell Putnam national intercollegiate mathematics competition.

Mathematics and Statistics Courses (MATH)

Students who fail to earn a "C" or better grade in a prerequisite course will not be permitted to enroll in the next sequence course.

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

MATH 109 Computational Skills

2 hrs.

A mastery-based remedial course designed to sharpen computational skills involving whole numbers, fractions, decimals, percents, signed numbers and simple geometric figures. These skills are used in solving word problems. All entering students must take an exam on this material unless exempted on the basis of ACT Mathematics score. Students who do not pass the exam are required to take this course and enrollment in this course is restricted to these students. Credit for the course will not apply to the number of credits needed for graduation.

MATH 110 Algebra I

3 hrs.

A course in algebra at the level usually covered in high school. Review and practice with basic algebraic skills. Topics include arithmetic foundations of algebra, properties of real numbers, linear equations and inequalities, and systems of linear equations. This is a continuous progress, mastery-based course. Credit for MATH 110 will not be granted to anyone having already received credit with a grade of "C" or better in any of MATH 111, 116, 118, 122, or 200 or equivalent transferable courses.

Prerequisite: MATH 109 or satisfactory score on placement test.

MATH 111 Algebra II

3 hrs.

A continuation of MATH 110. Topics include polynomials, fractional and radical equations, logarithmic and exponential functions, complex numbers, quadratic equations, and systems of quadratic equations. Credit for MATH 111 will not be granted to anyone having already received credit with a grade of "C" or better in any of MATH 118, 122, 200 or equivalent transferable courses.

Prerequisite: MATH 110, or one year of high school algebra and satisfactory score on placement test.

MATH 114 Excursions in Mathematics

3 hrs.

This course satisfies the general education requirement of a college level mathematics course. It is intended for students whose programs of study have no further mathematics requirements. Its purpose is to develop an awareness of the use of mathematics in the world around us. Areas of application may include: compound interest and monetary growth, planning and scheduling, collecting and interpreting data, games and decision making, measurement and geometry, patterns and art.

Prerequisite: MATH 110 or satisfactory score on Mathematics and Statistics Department Placement Examination.

MATH 116 Finite Mathematics with Applications

3 hrs.

This course is designed to give the student a background in the elements of finite mathematics. Included will be a discussion of sets, relations, functions, systems of linear equations and inequalities, vectors and matrices, concepts of probability, random variables and distribution functions, applications of linear algebra and probability.

Prerequisite: MATH 110, or 2 years of college preparatory mathematics and satisfactory score on placement test.

MATH 118 Precalculus Mathematics

4 hrs.

This course is designed to provide the student with basic algebraic and trigonometric concepts necessary for calculus. Topics include: 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 an emphasis on concepts rather than calculations. The historical origin and development of certain mathematical ideas will be included. The areas of mathematics investigated will include topics from set theory, probability, number theory, computer mathematics, and graph theory.

This course will not satisfy any program requirements in mathematics.
MATH 200 Calculus With Applications 4 hrs.
A terminal one semester course in calculus with emphasis on techniques and applications. Topics include functions, limits, differentiation, integration and applications. This course should not be elected by those students taking courses in the MATH 122-123 sequence. Prerequisite: MATH 111, or 1-½ years high school algebra and 1 year high school geometry and satisfactory score on placement test. Students will not receive full credit for MATH 200 and 122 or 123.

MATH 216 Business Statistics 3 hrs.
An applications-oriented study of statistical concepts and techniques. The course focuses on the student as a user of statistics with a minimal understanding of mathematical theory and formula derivation. Major topics of study are statistical description, central tendency, dispersion, distributional shapes, sampling, confidence levels, probability, comparison tests, association tests, regression and time series. The objectives of the course are to develop the skill to apply these concepts in conjunction with computer usage and make appropriate decisions regarding actual business problems. Students can receive credit for only one of MATH 216, 260, 364, or 366. Prerequisite: MATH 116, BIS 102.

MATH 230 Elementary Linear Algebra 4 hrs.
Vectors and geometry in two and three dimensions, systems of linear equations, matrix algebra, linear transformations in $R^2$ and $R^3$, generalizations to the vector spaces $R^n$, inner products, determinants. Some emphasis on proofs. Prerequisite: MATH 122 (MATH 123 recommended).

MATH 260 Elementary Statistics 4 hrs.
The purpose of this course is to introduce students to the rudiments of statistics. Basic concepts, rather than detailed derivation, are stressed. Topics include: probability, discrete random variables; means and variances; binomial, hypergeometric, normal, chi-square, F distributions, interval estimates, tests of hypotheses. Students can receive credit for only one of MATH 216, 260, 364, or 366. Prerequisite: MATH 200 or 122.

MATH 261 Engineering Statistics 3 hrs.
Introduction to statistical methodology, emphasizing applications in engineering. Topics include descriptive and inferential statistics, least squares curve fitting, correlation, and analysis of variance. Prerequisite: MATH 123 and a course in the use of computers. Cross listed with IE 261.

MATH 262 Probability for Engineers 3 hrs.

MATH 265 Probability and Statistics for Elementary/Middle School Teachers 4 hrs.
This course covers basic concepts of statistics and probability appropriate for elementary and middle school teachers. Topics include statistical techniques for organizing, summarizing, presenting, and interpreting data sampling techniques, simulation methods, counting techniques, and analytic methods in probability. Computers are used to reinforce major course ideas. Prerequisite: MATH 150 with a grade of “C” or better.

MATH 272 Vector and Multivariate Calculus 4 hrs.
Vector calculus, functions of several variables, partial differentiation, multiple integration. Prerequisite: MATH 123.

MATH 274 Introduction to Differential Equations 3 hrs.
Techniques of solving differential equations. Prerequisite: MATH 123.

MATH 314 Mathematical Proofs 3 hrs.
The prime objective of this course is to involve the students in the writing and presenting of mathematical proofs. The topics in this course will include logic, types of proof, sets, relations, mathematical induction, proofs in an algebraic setting such as divisibility properties of the integers, proofs in an analytic setting such as limits and continuity of functions of one variable. Additional topics may include elementary cardinal number theory, paradoxes and simple geometric axiom systems. Prerequisite: MATH 123, 230 or 374.

MATH 330 Modern Algebra I 4 hrs.
This course introduces the abstract algebraic concepts of groups, rings, and fields, and shows how 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 geometries. Transformational approaches to Euclidean geometry are also considered. Prerequisite: MATH 314.

MATH 350 Teaching of Middle School Mathematics 3 hrs.
This course considers curriculum issues and trends in middle school mathematics focusing on methods and materials for teaching mathematics 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 a program leading to secondary mathematics teacher certification. Prerequisite: Prior programming experience, MATH 350, and acceptance into Professional College of Education.

MATH 352 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.

MATH 362 Probability 4 hrs.
Discrete probability spaces, conditional probability, discrete and continuous random variables, expectations, joint distributions, special distributions. Prerequisite: MATH 123.

MATH 364 Statistical Methods 4 hrs.
This course treats both the theory and applications of statistics. Topics include: empirical distributions, discrete probability, random variables and probability distributions, special distributions, the central limit theorem, sampling distributions, point and interval estimation, hypothesis testing, analysis of variance, correlation and regression, the design of experiments. Students can receive credit for only one of MATH 216, 260, 364, or 366. Prerequisite: MATH 123.

MATH 366 Introduction to Statistics 4 hrs.
An introductory course in statistics for upper level students possessing a limited mathematical background. The emphasis is on the use of statistical tools rather than on their theoretical development. Topics will include probability distributions, means and variances, interval estimates, tests of hypotheses, correlation and regression. This course will not count toward a mathematics major. Students can receive credit for only one of MATH 216, 260, 364, or 366.

MATH 374 Introduction to Linear Algebra and to Differential Equations 4 hrs.
This course covers elementary linear algebra and differential equations, applying techniques of linear algebra to the solution of differential equations. Topics chosen from first order equations and applications, matrices, vector spaces, linear transformations, linear differential equations, systems of differential equations, and series solutions. Students may receive credit for no more than two of the following three courses: MATH 216, 274, and 374. Prerequisite: MATH 123.

MATH 390 Undergraduate Seminar 1 hr.
This seminar features student participation covering mathematical topics not normally included in regular major programs. May be repeated for credit. Prerequisite: permission of Department.

MATH 391 Statistical Consulting 1 hr.
An undergraduate course on the practice of statistical consulting in industry. This course will consider both the statistical and the nonstatistical aspects of consulting: statistical modeling, statistical 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, 566, 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 models of application and several different mathematical techniques. The computer will be used as a
tool in pursuing some of these problems. Prerequisite: MATH 272, 374 or (230 and 274), and a computer programming course.

**MATH 408 Linear Programming**
3 hrs.
Linear inequalities, convex geometry, optimization in linear systems, zero-sum games. Applications. Prerequisites: MATH 230 or 374.

**MATH 420 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 homomorphisms, subgroups, quotient groups, the fundamental homomorphism theorem, groups acting on sets, Sylow’s theorem, ring homomorphisms, 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 placed 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, SPSX, and BMCP 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, charts, and plots for report writing purposes; data management methods for large survey-type data sets. The latter topic may include: subset analysis, updating, and missing data methods. Attention may also be given to the statistical topics of: correlation and regression analysis; one and two sample problems; and analysis of variance. Prerequisites: Western Michigan University’s computer literacy requirement and an introductory statistics course.

**MATH 490 Topics in Mathematics**
3 hrs.
The content of this course varies with the semester offered and with the instructor. The course is intended to introduce students to significant topics not ordinarily encountered and to present more variety in their undergraduate programs. May be taken more than once with the approval of the student’s advisor. Prerequisite: Approval of Department.

**Undergraduates with junior status and 12 hours of work in mathematics and statistics may enroll in 500-level courses with prior approval of the department chair.**

**MATH 506 Scientific Programming**
3 hrs.
An introduction to solving scientific and engineering problems on computers. The topics include root-finding, matrix calculation, numerical integration and the numerical solution of differential equations. The FORTRAN language and various library software packages will be used. Prerequisites: MATH 230 or MATH 374, and CS 251 or CS 306.

**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. Prerequisite: MATH 230, MATH 272 and MATH 274 or MATH 374 and MATH 506.

**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 such as maximum likelihood 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 metrization. Prerequisites: MATH 330 or MATH 570.

**MATH 530 Linear Algebra**
3 hrs.
Properties of finite dimensional abstract vector spaces, linear transformations, and matrix algebra are studied. Prerequisite: MATH 230.

**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 grade of “C” or better or a course equivalent to MATH 150. Prerequisites: MATH 230 or MATH 330.

**MATH 554 Algebra in the Elementary/Middle School Curriculum**
3 hrs.
This course is devoted to the teaching and learning of algebra in elementary and middle grades. Concepts and skills are developed and reinforced using a variety of approaches and materials. Calculators and computers are used throughout the course to develop concepts, to personalize problem-solving methods, and to explore the connections between symbolic and graphic representations of mathematical ideas. Prerequisite: MATH 352 or 552 with a grade of “C” or better or consent of instructor.
methods, parameter design and tolerance design. Prerequisite: An introductory course in statistics.

MATH 566 Nonparametric Statistical Methods 3 hrs.
This course presents a broad overview of statistical methods commonly referred to as nonparametric or distribution-free methods. Topics include: inferences for proportions, contingency tables, goodness of fit problems, estimation and hypothesis testing based on ranking methods, measures of rank correlation, efficiency. Emphasis will be on the application of nonparametric statistical methods to data from many different applied fields. Prerequisite: An introductory statistics course.

MATH 567 Statistical Design and Analysis of Experiments 4 hrs.
A course in experimental design and the analysis of variance with particular emphasis on industrial experiments. Topics include: complete randomized, randomized complete block, latin square, and split-plot designs; orthogonal contrasts and polynomials; multiple comparisons; factorial arrangement of treatments, confounding, fractional replication. The course is mold this to complete analysis of good applied problems. Prerequisite: An introductory statistics course.

MATH 568 Regression Analysis 3 hrs.
An applied course in regression analysis; simple and multiple linear regression; resolution of fit of a model, including residual analysis, precision of estimation, and tests of general hypotheses; model building, step-wise regression, use of indicator variables; non-linear regression. Prerequisite: An introductory statistics course.

MATH 569 Quality Improvement Concepts and Methods 4 hrs.
This is a course on quality technology for application in business and industry involving concepts and methods from Statistics, Management and Psychology and how they must blend together to obtain results. Topics may include: quality concepts for products and services, Deming philosophy of quality improvement, leadership and management concepts, analytic vs enumerative studies, theory of variability, the seven tools, exploratory data analysis, statistical graphics, Shewhart control charts, cusum charts, process capability, principles of experimental design, robust product and process design. Prerequisite: An introductory statistics course such as MATH 260 or MATH 364.

MATH 570 Advanced Calculus 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 recommended). 

MATH 571 Real Analysis 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, conformal mapping. Prerequisites: MATH 230, 272 and 274) or 374.

MATH 574 Advanced Differential Equations 3 hrs.
Series solutions at ordinary and singular points of linear ordinary equations, Bessel and Legendre functions, self-adjoint boundary value problems, Fourier series, solution of partial differential equations by separation of variables. Prerequisites: (MATH 230, 272, and 274) or (MATH 374).

MATH 580 Number Theory 3 hrs.
Diophantine equations, congruences, quadratic residues, and properties of number-theoretic functions. Prerequisite: MATH 330.

MATH 595 Topics in Elementary/Middle School Mathematics 3 hrs.
This course addresses topics in mathematics content and pedagogy relative to the teaching and learning of elementary/middle school mathematics. Prerequisite: MATH 352 or consent of instructor. Course may be repeated for credit.

MATH 599 Independent Study in Mathematics 1-3 hrs.
Advanced students with good scholastic records may elect to pursue independently the study of some topic having special interest for them. Topics are chosen and arrangements are made to suit the needs of each particular student. Prerequisite: Approval of chairperson of Department.

MEDITIVAL INSTITUTE
PROGRAM
See “Interdisciplinary Programs” in the College of Arts and Sciences.

PHILOSOPHY

Michael Pritchard, Chair
Shirley Bach
Kent Baldwin
Sylvia Culp
John Dilworth
Joseph Elin
Arthur Falk
John Hartline, Adjunct
Timothy McGrew
Janet Pisaneschi
Guettin 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.

Appropriate courses and/or independent studies in philosophy can serve the purpose of helping to unify or “cap off” a wide variety of concentrations for those students who select the university’s “student planned curriculum,” described in the General Information section of this catalog. The Philosophy Department encourages these concentrations and members of the staff will be happy to serve as advisors to students wishing to construct concentrations that involve philosophy.

The Philosophy Department offices are located on the third floor of Moore Hall. Students are invited to visit the department office and the offices of faculty at any time. Office hours are posted beside each instructor’s door.

Before preregistration each term, the faculty prepare brief written descriptions of the courses to be offered. These descriptions are posted on the department bulletin board outside the department office and additional copies may be obtained in the office. The department also announces its tentative course offerings a year in advance.

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.

Horns 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

Because the Department of Philosophy believes that there is no single correct approach to the study of philosophy, but that, as much as possible, each student under the guidance of a faculty member should design a program in accordance with his/her interests, abilities, and intellectual maturity, no one course is required of all students in philosophy. Instead, students majoring in philosophy must plan their program with a faculty advisor. Every faculty member serves as a student advisor and normally students may select any advisor they prefer. The advisor works closely with the student in planning a program of studies and helps the student make an informed and intelligent choice of courses.

Students should select an advisor as soon as they are fairly certain that they intend to major in philosophy. Normally this would not occur until after they have taken at least one, and possibly two philosophy courses. Every major must choose and consult with an advisor no later than the completion of 12 hours of philosophy courses; no hours beyond the 12th will be credited towards a Philosophy major unless the approval of an advisor has been obtained. Students are encouraged to see their advisors frequently, but consultation should occur at least once every academic year.

A major consists of a minimum of 28 hours in philosophy including PHIL 300 or PHIL 301. PHIL 100 and 200 cannot both be taken towards a major or minor.

Cognates: Appropriate courses in other departments may be used towards a philosophy major (not a minor) up to a maximum of four hours. Consult with the department chairperson.

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
2. ONE of the following: PHIL 200, 220, 300, 301
3. TWO of the following: PHIL 201, 303, 310, 311, 313, 314, 434, 534
4. PHIL 410 Professional Ethics (4 credit hours)

The remaining credit hour requirements may be satisfied in a variety of ways. The student must make the minor by doing additional course work within the Department of Philosophy. Any courses, including PHIL 498: Independent Study, are applicable. Also, the student may apply up to four credit hours from an ethics-related course in another department, subject to approval of the Department of Philosophy.

Students Not Majoring or Minoring in Philosophy

Students not majoring or minoring in philosophy find that philosophy adds intellectual depth to their major field of study. Philosophy by its nature touches on many areas of life and thought, frequently from a perspective that students find valuable and exciting. Non-majors often consider their philosophy courses an essential element in their general intellectual growth.

In recognition of this, the department offers a wide range of courses for non-majors/minors. Students interested in a general introduction to philosophy should consider PHIL 100 or 200; students interested in a philosophical approach to a more specialized area should consider PHIL 201, 220, or some upper-level cognate. Students interested in a more technical appreciation of the central problems of philosophy should consider such courses as PHIL 330 (Theory of Knowledge) and PHIL 333 (Metaphysics). Many students will find it advisable to begin with either PHIL 100, 200 or 201, and then continue on the upper level.

Repeating Courses for Credit

Since philosophy courses may vary widely in content from year to year, a student may be occasionally justified in repeating a course for credit. Students who wish to do so must obtain permission of the instructor before they register. If the student requests, the department will have the student's record indicate that the course when repeated differed substantially in content from the identically numbered course previously completed.

Philosophy Minor

A minor consists of at least 16 hours in philosophy. Minors may choose any courses they find suitable. Minors are strongly urged to consult with advisors (preferably after completing 8 hours), but this is not required. For further information, students should read the Philosophy Department Student Handbook or see any faculty member. The handbook is available in the department office, 320 Moore Hall.

Minor in Professional and Applied Ethics

Minimum of 18 credit hours. Minor slip required. Required Philosophy courses:

1. ONE of the following: PHIL 200, 220, 300, 301
2. TWO of the following: PHIL 201, 303, 310, 311, 313, 314, 434, 534
3. PHIL 410. Professional Ethics (4 credit hours)

The remaining credit hour requirements may be satisfied in a variety of ways. The student must complete the minor by doing additional course work within the Department of Philosophy. Any courses, including PHIL 498: Independent Study, are applicable. Also, the student may apply up to four credit hours from an ethics-related course in another department, subject to approval of the Department of Philosophy.

Philosophy Courses (PHIL)

A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

INTRODUCTORY COURSES

PHIL 100 Critical Thinking and Writing 4 hrs.

A seminar for students who wish to improve their ability to think analytically, argue logically, and express a train of thought carefully and cogently in writing. There will be frequent writing assignments which will focus on issues raised by readings of broad philosophical interest. Class time will be about equally divided between discussion of the readings and critical analysis of the student’s own writings. Fullfills the University Intellectual Skills college-level writing requirement.

PHIL 200 Introduction to Philosophy 4 hrs.

An introduction to the nature of philosophy by a consideration of major types of philosophical questions, such as the principles of rational belief, the existence of God, what is the good life, the nature of knowledge, the problem of truth and verification. Selected texts from representative philosophers are used to define the questions and to present typical answers.

PHIL 201 Introduction to Ethics 4 hrs.

An introduction to the philosophic study of morality. Deals with questions such as: What is the good life? Why should I be moral? What is the meaning of right and wrong?

PHIL 220 Critical Reasoning 3 hrs.

A systematic study of extended arguments aimed at helping students develop the skills necessary for understanding, analyzing, and evaluating argumentative rhetoric. Topics included are argument identification and argument structure, definitions and disputes, deduction and induction, premise verification and informal fallacies.

PHIL 225 Deductive Logic 3 hrs.

A study of the rules and techniques of deductive reasoning. Topics include syllogistic reasoning and the logical form of propositions. Applications to every day reasoning are emphasized.

PHIL 250 Science, Technology, and Values 3 hrs.

A critical examination of the interactions between science, technology and society. The social implications of science and technology will be examined by placing them within the larger context of society, politics, ethics and economics. Issues and problems generally recognized as societal concerns will be emphasized. The detailed analysis of a case study will include teaching of the relevant science and technology.

300-LEVEL COURSES

Each semester detailed course descriptions are posted outside room 320 Moore Hall prior to pre-registration. If you are in doubt about whether you have adequate background for taking a course, talk with the instructor.

PHIL 300 Ancient and Medieval Philosophy 4 hrs.

A study of the history of selected philosophical topics up to the sixteenth century. Great thinkers, such as Plato, Aristotle, Augustine, and Aquinas will be emphasized.
PHIL 301 History of Modern Philosophy 4 hrs.
A survey of modern philosophy from the Renaissance through Kant, with particular attention to epistemological and metaphysical themes in the works of Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, and Kant.

PHIL 303 Existentialist 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.

PHIL 311 Political Philosophy 3 hrs.
An examination of ethical issues in society; conflicts of interest; safety and risk; and responsibilities to employers, clients, and society; conflicts of interest; and responsibilities to employers, clients, and society.

PHIL 312 Philosophy of Art 3 hrs.
An analysis of the nature of art and its significance in human life. The course may cover all forms of art, but is not necessarily limited to fine art, literature, drama, or 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 constitutions and statutory interpretation; basic rights including the rights to privacy and maximum liberty; the definition of criminality and the justification of punishment, excuses.

PHIL 314 Philosophy and Public Affairs 3 hrs.
A philosophical examination of principles and values underlying contemporary social issues. The course will focus on specific issues such as environmental concerns, animal rights, abortion, privacy, censorship, human rights, economic justice, business ethics, violence, war, peace, and utopian ideals. Topics to be announced in the Schedule of Classes. May be repeated for credit when topics vary.

PHIL 315 Race and Gender Issues 3 hrs.
A philosophical examination of principles and values underlying contemporary social issues involving race, gender, and related concepts. Topics include: identity, equality/inequality, equity, harassment, prejudice, discrimination, affirmative action.

PHIL 316 Ethics in Engineering and Technology 3 hrs.
An examination of ethical issues in engineering. Topics include: engineering as a profession, codes of ethics, engineering in business, industry, and government; responsibilities to employers, clients, and society; conflicts of interest, safety and risk, whistle blowing, environmental concerns, and choosing careers in engineering and technology.

PHIL 320 Introduction to Formal Logic 4 hrs.
The study of general methods of analyzing and validating deductive reasoning. Arguments expressed in everyday language are analyzed and translated into the symbolic notation of logic, and calculations are performed in this notation to check the validity of the arguments. The course may include a brief consideration of the application of logic to computers. Open to qualified first-year students.

PHIL 332 Theory of Knowledge 4 hrs.
An examination of basic problems concerning knowledge and belief, discussing traditional approaches but stressing recent analyses. Possible topics: skepticism and certainty, knowing and believing, perception, memory, "a priori" vs. "a posteriori" knowledge, self-knowledge, knowledge of others.

PHIL 333 Metaphysics 4 hrs.
A study of basic metaphysical questions, discussing traditional solutions but emphasizing recent approaches. Questions will be selected from topics such as: substances, qualities and relations, universals and particulars, identity, space and time, causation, mind and body, persons, free will.

PHIL 350 Foundations of the Modern Worldview 4 hrs.
The study of some basic ideas with which today's knowledgeable people make sense of their world and themselves. Topics may vary from term to term, but will include a philosophical study of the physical, biological or social sciences and some areas in the humanities that reflect changes in values associated with the modern worldview.

ADVANCED COURSES

PHIL 410 Professional Ethics 4 hrs.
A philosophical examination of the foundations of ethics in the professions. Topics to be considered include the professions and professionalism, relationships between professional and ordinary ethics, social responsibilities of the professions, philosophy of professional relationships, regulation of the professions, and codes of ethics.

PHIL 434 Biomedical Ethics 4 hrs.
In this course, the ethical principles (respect for autonomy, nonmaleficence, beneficence) and other ethical concerns (e.g., privacy, confidentiality, compassion, relationships among patients and professionals) are studied and applied to contemporary problems in medicine and biomedical research. These problems include genetic testing and therapy, organ transplantation, decision-making regarding treatment and care at the end of life, research involving human subjects, and treatment issues in the AIDS epidemic. Case study methods are used.

PHIL 440 Philosophy at Pre-College Levels 4 hrs.
A content-oriented course for the teaching minor that explores topics, reading materials, and ways of approaching them in the teaching of philosophy at the pre-college level. A specific philosophy is put on critical and creative thinking.

PHIL 470 Seminar in Philosophy—Variable Topics 2-4 hrs.
Seminars deal with selected advanced topics in philosophy. Since content varies from semester to semester, students are advised to check course descriptions which are available in the department office.

SUGGESTIONS FOR SEMINAR TOPICS:
1) the philosophy of one or more significant historical or 20th century thinkers,
2) a philosophical movement; or
3) a major philosophical issue that draws on a variety of sources.

PHIL 480 Senior Seminar 4 hrs.
A comprehensive and in-depth examination of a central area or areas of philosophy. Topics may vary from term to term. The course may be about 1) the philosophy of one or more significant historical or 20th century thinkers, 2) a philosophical movement, or 3) a major philosophical issue that draws on a variety of sources.

PHIL 498 Independent Study 2-4 hrs.
Independent study is available for 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 Metalogic 3 hrs.
This course will begin with a review of the fundamentals of propositional and quantifiable calculus, including the symbolization of English sentences. The main portion of the course will then be devoted to a study of the basic features of formal languages and axiomatic theories with a special emphasis on the consistency and completeness of formal systems, including at least propositional and quantifiable logic. Finally, the course will conclude with an examination of some more specialized topics, with possible examples being the deduction theorem, recursive functions, and Godel and Church theorems, decidability vs. undecidable theories. Prerequisite: PHIL 320 (MATH 310 or CS 331 may substitute, excluding PHIL 320), and two other courses in philosophy, mathematics (above the level of MATH 110), or computer science (above the level of CS 105).

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. Prerequisite: PHIL 220 or 320, and
PHYSICS

Dean Hedlund, Chair
Robert Shamu, Assistant Chair
Nora Berrah
Clement Burns
Sung Chung
Gerald Hardie
Emmanuel Kambir
Dean Kaul
Arthur McGurn
Paul Panzella
Lisa Paulius
Alvin Rosenthal
John Tanis

The Department of Physics offers four programs of study leading to a major in physics. Three of these are in the Arts and Sciences Curriculum (Physics Major, Physics Major with Electrical Engineering Option, and Physics Major with Materials Physics Option) and are programs that prepare students for graduate study or professional employment in physics. The secondary education (SED) physics major prepares students to teach physics at the high school level. A Geophysics Major, sponsored jointly by the departments of Geology and Physics, is also available, enabling students to prepare for a career in an important area of applied physics.

Any student contemplating majoring or minoring in physics should contact the Department of Physics as early as possible. This is especially true for transfer students from community colleges in regard to transfer credit and course of study. Students will want to contact the department undergraduate advisor regarding courses, employment opportunities, and graduate study in physics.

Any physics major may qualify for departmental honors in physics by fulfilling the following requirements:

1. Complete the courses recommended for students planning to enter graduate college.
2. Obtain by the end of the semester preceding graduation an accumulated grade point average of at least 3.5 in physics courses and an accumulated grade point average of 3.0 in other courses.

Minor programs are available.

Major and Minor Requirements

All students majoring or minoring in Physics are required to complete the introductory courses PHYS 205, PHYS 206, PHYS 207, and PHYS 208 with a grade of "C" or better in each course.

Physics Major

The courses required for the Physics major are:

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 205</td>
<td>Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 206</td>
<td>Mechanics and Heat Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 207</td>
<td>Electricity and Light</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 208</td>
<td>Electricity and Light Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 309</td>
<td>Introductory Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 310</td>
<td>Introductory Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 330</td>
<td>Thermodynamics and Kinetic Theory</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 342</td>
<td>Electronics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 420</td>
<td>Analytical Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 440</td>
<td>Electricity and Magnetism</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 460</td>
<td>Introductory Quantum Mechanics</td>
<td>3</td>
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Required Cognates

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 122</td>
<td>Calculus I</td>
<td>4</td>
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<tr>
<td>MATH 123</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 272</td>
<td>Vector and Multivariate</td>
<td>4</td>
</tr>
<tr>
<td>MATH 374</td>
<td>Introduction to Linear Algebra and Differential Equations</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 101</td>
<td>General Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 102</td>
<td>General Chemistry II</td>
<td>4</td>
</tr>
</tbody>
</table>

Computer Programming Requirement

The Department requires Physics majors to have computer programming skills before graduation. This requirement may be met by previous programming experience or by taking appropriate course(s) in Computer Science.

Baccalaureate Writing Requirement

Students who have chosen the Physics major will satisfy the Baccalaureate Writing Requirement by successfully completing PHYS 566 Advanced Laboratory.

Physics Major with Electrical Engineering Option

This program is designed for those students who wish to pursue a physics degree with a concentration in Electrical Engineering. The courses required for the Physics major with Electrical Engineering option program are:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 205</td>
<td>Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 206</td>
<td>Mechanics and Heat Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 207</td>
<td>Electricity and Light</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 208</td>
<td>Electricity and Light Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 309</td>
<td>Introductory Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 310</td>
<td>Introductory Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 330</td>
<td>Thermodynamics and Kinetic Theory</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 420</td>
<td>Analytical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 440</td>
<td>Electricity and Magnetism</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 460</td>
<td>Introductory Quantum Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 566</td>
<td>Advanced Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>ECE 210</td>
<td>Circuit Analysis</td>
<td>4</td>
</tr>
<tr>
<td>ECE 221</td>
<td>Electronics I</td>
<td>4</td>
</tr>
<tr>
<td>ECE 310</td>
<td>Network Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ECE 320</td>
<td>Electrical Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 330</td>
<td>Electrical Power Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 350</td>
<td>Digital Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 420</td>
<td>Power Electronics</td>
<td>3</td>
</tr>
<tr>
<td>ECE 430</td>
<td>Electrical Power Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 451</td>
<td>Digital Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 455</td>
<td>Digital Signal Processing</td>
<td>3</td>
</tr>
<tr>
<td>ECE 460</td>
<td>Communication Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 470</td>
<td>Feedback Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

In addition to the above courses the student is required to take a minimum of three courses from among the following. The courses must include at least four hours of EE and be approved by the advisor.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 255</td>
<td>Optics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 562</td>
<td>Atomic and Molecular Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 564</td>
<td>Nuclear and Particle Physics</td>
<td>3</td>
</tr>
<tr>
<td>ECE 320</td>
<td>Electronics II</td>
<td>4</td>
</tr>
<tr>
<td>ECE 330</td>
<td>Electrical Machinery</td>
<td>4</td>
</tr>
<tr>
<td>ECE 371</td>
<td>Linear Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 390</td>
<td>Probabilistic Methods of Signal and System Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ECE 420</td>
<td>Power Electronics</td>
<td>3</td>
</tr>
<tr>
<td>ECE 430</td>
<td>Electrical Power Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 451</td>
<td>Digital Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 455</td>
<td>Digital Signal Processing</td>
<td>3</td>
</tr>
<tr>
<td>ECE 460</td>
<td>Communication Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 470</td>
<td>Feedback Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Computer Programming Requirement

The Department requires Physics majors with Electrical Engineering option to have computer programming skills before
The courses required for the SED Physics major are:

PHYS 103 Astronomy Laboratory
PHYS 104 Introductory Astronomy
PHYS 205 Mechanics and Heat
PHYS 206 Mechanics and Heat Laboratory
PHYS 207 Electricity and Light
PHYS 208 Electricity and Light Laboratory
PHYS 309 Introductory Modern Physics
PHYS 310 Introductory Modern Physics Laboratory

In addition, two physics courses numbered above 300 and totaling a minimum of six hours of credit are required.

### Secondary Education Physics Minor

The courses required for the SED Physics minor are:

PHYS 205 Mechanics and Heat
PHYS 206 Mechanics and Heat Laboratory
PHYS 207 Electricity and Light
PHYS 208 Electricity and Light Laboratory
PHYS 309 Introductory Modern Physics
PHYS 310 Introductory Modern Physics Laboratory

### Physics Courses (PHYS)

A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

A student is required to earn a grade of "C" or better in a prerequisite course before enrollment is permitted in the next sequence course.

PHYS 102 Physics, Technology, and Society 3 hrs.

The main objective of this course is to provide the student with a quantitative understanding of physical principles which underlie selected environmental problems. Topics include the energy problem, air pollution, and nuclear weapons. This course may not be applied toward either a major or minor in physics. Prerequisite: MATH 110 or equivalent.

PHYS 103 Astronomy Laboratory 1 hr.

The laboratory exercises include studying atomic spectra, classifying stars, determining the orbit of the moon, calculating the recessional velocities of distant galaxies, etc. Algebra and trigonometry are required to do many of the exercises. Recommended for students majoring in the physical sciences.

PHYS 104 Introductory Astronomy 3 hrs. Fall, Winter, Spring

The aim of the course is to present the development of knowledge about the solar system, the stars, the galaxies, and the origin and evolution of the universe. Emphasis will be placed on the methods and tools of the astronomer, on the major principles and their applications, and on the challenging problems of the space age. Mathematics will be restricted to high school algebra. The course consists of three lectures per week. Some evening observation sessions will be
PHYS 105 Introductory Astronomy
4 hrs.
This is a first course in astronomy with laboratory work and covers the appearance of the night sky, the nature of the solar system; the life cycles of stars, the basic properties of star clusters and galaxies, and the evolution of the cosmos. Prerequisite: High school algebra. A student cannot receive credit for both PHYS 104 and PHYS 105.

PHYS 107 Elementary Physics
4 hrs. Fall, Winter
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.

PHYS 108 Elementary Physics Laboratory
1 hr. Fall, Winter
This is a laboratory course which includes exercises related to topics covered in PHYS 107. Normally this course is taken concurrently with PHYS 107. A student cannot receive credit for both PHYS 108 and either PHYS 109 or PHYS 114. Prerequisite: PHYS 205 concurrently.

PHYS 207 Electricity and Light
4 hrs. Fall, Winter, and Summer
This course follows PHYS 205 and consists of studies in electricity, magnetism, and light. Prerequisites: PHYS 205, MATH 123, and MATH 272 (or MATH 230) concurrently.

PHYS 208 Electricity and Light Laboratory
1 hr. Fall, Winter, and Summer
This is a laboratory course which includes exercises related to topics covered in PHYS 207. Normally this course is taken concurrently with PHYS 207. A student cannot receive credit for both PHYS 208 and either PHYS 108 or PHYS 114. Prerequisite: PHYS 205 concurrently.

PHYS 324 Mechanics and Heat Problems
1 hr. Fall
This course is intended for those who have had 113 General Physics I, or its equivalent, MATH 123, and MATH 112 concurrently. A student cannot receive credit for both PHYS 324 and any of the following: PHYS 107, PHYS 109, PHYS 113, or PHYS 205. Prerequisite: High school algebra.

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.
This course is designed to enhance the problem-solving techniques needed by Secondary Education instructors in the teaching of thermodynamics. Emphasis is on the First and Second Laws, P-V diagrams and the energy balance in simple thermodynamic systems. Prerequisite: PHYS 205.

PHYS 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 ECE 210. Prerequisite: PHYS 207.

PHYS 352 Optics
3 hrs.
This is an introductory course in geometrical and physical optics in which the main topics covered are reflection, refraction, lenses, mirrors, aberrations, and the consequences of the fundamental optical instruments, wave motion, interference, diffraction, and polarization. Lasers, fiber optics, holography, and image processing are covered qualitatively. 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 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 SCI 404.
PHYS 420 Analytical Mechanics
3 hrs. Fall
The topics studied include the dynamics of single particles and the motion of systems of interacting particles. Techniques of vector analysis are used frequently, and conservation laws are developed and applied. The Lagrangian formulation of mechanics is introduced. Prerequisites: PHYS 207 and either MATH 274 or 374. The mathematics course may be taken concurrently.

PHYS 440 Electricity and Magnetism
4 hrs.
This course provides an upper level theoretical treatment of electromagnetic phenomena, using methods of vector calculus. Electro- and magneto-statics, induction, Maxwell's equations, and electromagnetic radiation are treated. Prerequisites: PHYS 207 and either MATH 274 or 374.

PHYS 460 Quantum Mechanics
3 hrs. Winter
This is a first course in quantum theory. It treats the historical basis of the quantum concept in the theory of cavity radiation and the photoelectric effect. Topics include the Schrödinger wave equation, hydrogenic atoms, two-electron atoms, angular momentum coupling, and perturbation theory. Prerequisites: PHYS 207 and 420 or consent of instructor.

PHYS 498 Special Problems
1-3 hrs.
In this course a student works on a laboratory project or a reading project under the direction of a faculty member. Prerequisite: Consent of instructor.

The 500-level courses are offered only to advanced physics majors. Department policy requires that undergraduates enrolling in these courses have successfully completed all prerequisite studies prior to admission.

The Department recommends that Physics majors who plan to enter graduate college complete two of the following courses: PHYS 562, PHYS 563, or PHYS 564.

PHYS 562 Atomic and Molecular Physics
3 hrs. Fall
This course continues the study of the applications of quantum mechanics. Topics covered include the helium atom, multi-electron 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. Fall
After an initial study of symmetry and crystal structure, quantum mechanics is used to describe the cohesion of solids, x-ray and neutron diffraction, the elasticity of solids, lattice vibrations, and the thermal and electrical properties of solids, with particular emphasis on metals. Prerequisite: PHYS 460.

PHYS 564 Nuclear and Particle Physics
3 hrs. Winter
This course covers such topics as properties of nuclei, collision theory, nuclear reactions, nuclear models, fundamental interactions, and classification techniques used in particle physics. Discussions of experimental methods as well as theoretical treatments using quantum mechanics are included. Prerequisite: PHYS 460.

PHYS 566 Advanced Laboratory
3 hrs. Winter
The objectives of this course are to provide the student with experience in the use of laboratory equipment and with an understanding of several important physical phenomena. The student will perform experiments from a list covering three areas: atomic, solid state, and nuclear physics. A portion of the semester may be devoted to studying a problem in depth. The course consists of two three-hour laboratory periods each week. Prerequisites: PHYS 342 and PHYS 460, (460 may be elected concurrently with 566.)

PHYS 598 Selected Topics
1-4 hrs.
This course affords an opportunity for advanced students with good scholastic records in physics to pursue independently the study of some subject of interest to them. Prerequisite: Consent of instructor.

POLITICAL SCIENCE

Students who have chosen the Political Science major (any concentration) or the Public Administration major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

PSCI 391 Internship Seminar
PSCI 404 Making of Public Policy in the U.S.
PSCI 405 National Public Policy
PSCI 450 Seminar in International and Comparative Politics
PSCI 490 Political Science Honors Seminar
PSCI 494 Seminar in Political Science

Major and Minor in Political Science

MAJOR
The major consists of a minimum of 33 semester hours of work in the department. It is expected that transfer students will take at least one-half of the minimum required 33 hours in the department. The following are required courses for majors:

- PSCI 200 National Government
- PSCI 250 International Relations
- PSCI 366 Scope and Methods of Political Science

Major and Minor in Political Science

MAJOR
The major consists of a minimum of 33 semester hours of work in the department. It is expected that transfer students will take at least one-half of the minimum required 33 hours in the department. The following are required courses for majors:

- PSCI 200 National Government
- PSCI 250 International Relations
- PSCI 366 Scope and Methods of Political Science
- ONE course in foreign and comparative political systems (to be chosen from PSCI 340, 341, 342, 343 or 344)
- ONE course in political theory (to be chosen from PSCI 360, 361, 362, 363 or 562)
- Baccalaureate Writing Requirement (choose one from PSCI 391, 404, 405, 450, 490 or 494).

Students who plan to become majors are encouraged to take PSCI 100, Introduction to Political Science, as their first course in the department during their freshman year.

MINOR
The standard political science minor consists of 20 semester hours in political science. It is expected that transfer students will take at least one-half of the minimum required 20 hours in the department. A political science minor shall complete:

- PSCI 200 National Government
- PSCI 250 International Relations
- ONE course in foreign and comparative political systems (to be chosen from PSCI 340, 341, 342, 343 or 344).
- ONE course in political theory (to be chosen from PSCI 360, 361, 362, 363, 366 or 562).

Requirements may be waived with the written permission of the chairperson of the department.

International and Comparative Politics Concentration
This concentration is available within the political science 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. Complete the required core for the Major (19 hrs.)
PSCI 200 National Government 3
PSCI 240 Introduction to Comparative Politics 3
PSCI 250 International Relations 3
ONE course in political theory (to be chosen from PSCI 360, 361, 362, 363 or 562) 3
PSCI 366 Scope and Methods of Political Science 3
PSCI 395 Quantitative Methods for Political Scientists 3

B. Complete TWO of the following courses (8 hrs.)
PSCI 340 West European Political Systems 3
PSCI 341 African Political Systems 3
PSCI 342 Asian Political Systems 3
PSCI 343 Latin American Political Systems 3
PSCI 344 Russian and East European Politics 3
PSCI 350 American Foreign Policy 3
PSCI 400 Public Administration 3

C. Complete EACH of the following courses (6-7 hrs.)
PSCI 450 Seminar in International and Comparative Politics (prerequisites: PSCI 250, one of the 340s, and approval of the instructor or the advisor) 3
ONE other course in international or comparative politics (prior Approval by advisor required) 3

D. Complete Cognate courses (9-11 hrs.)
Complete at least the additional courses on foreign international, or cross-national topics from at least two of the following departments: Anthropology, Economics, Science Studies, Geography, History, Languages and Linguistics, Marketing, Religion, or Sociology. Students must receive prior permission from the concentration advisor before selecting courses in these departments.

Public Law 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. Students interested in the concentration should see the Public Law Advisor of the Political Science Department, Dr. Peter Rainstorm—3029 Friedmann Hall (387-3697).

To complete the concentration within political science, a student must:

A. Complete the required core for the Major (17 hrs.)
PSCI 200 National Government 3
PSCI 250 International Relations 3
PSCI 366 Scope and Methods of Political Science 3
ONE course in comparative politics (to be chosen from PSCI 340, 341, 342, 343 or 344) 3
ONE course in political theory (to be chosen from PSCI 561, 562) 3
Baccalaureate Writing Requirement (choose one from PSCI 391, 404, 405, 450, 490 or 494).

B. Complete PSCI 320 American Judicial Process (4 hrs.)

C. Complete THREE of the following courses (9 hrs.)
PSCI 325 Criminal Justice Policy 3
PSCI 420 Constitutional Law 3
PSCI 422 Civil Liberties and Civil Rights 3
PSCI 526 Administrative Law and Public Regulation 3

D. Complete TWO of the following courses (6-7 hrs.)

Public Policy Concentration
This concentration is available within the political science major for students with particular career and/or advanced degree interests in this field. The concentration provides for students completing the program to receive designation of this specialization on their Permanent Record Card.

The concentration in public policy is aimed at preparing students for careers in government service at national, state, and local levels, and in politics.

Students interested in a major in political science with a concentration in public policy should see the designated departmental advisor.

To complete the major, a student must complete the following:

I. Required core (10 hrs.)
PSCI 200 National Government 3
PSCI 202 State and Local Government 4
One theory course to be chosen from:
PSCI 362 Contemporary Political Theory 3
PSCI 363 American Political Theory 3
PSCI 562 Modern Democratic Theory 3

II. Methods (6 hrs.)
Two courses to be chosen from:
PSCI 366 Scope and Methods of Political Science 3
PSCI 395 Quantitative Methods for Political Scientists 3

III. Policy Applications and Institutions (16 hrs.)
Required:
PSCI 304 Intro. to Public Policy 3
PSCI 405 National Public Policy 4
PSCI 535 Budgeting and Finance 3

One course from List A:
PSCI 300 Urban Politics 3
PSCI 306 Environmental Politics 3
PSCI 350 American Foreign Policy 4
PSCI 404 Making Public Policy 3
PSCI 526 Administrative Law and Public Reg. 3

One course to be chosen from List B below OR from the courses not already selected from List A above:
PSCI 314 The Presidency 3
PSCI 315 Politics of Congress 3
PSCI 320 American Judicial Process 4

Programs in Public Administration
These programs are designed to prepare students for entrance level positions in public and public-related agencies by equipping them with a knowledge and understanding of the political, social, economic, and legal environment of public agencies, by introducing them to operational and procedural problems of public agencies, and by providing them with an understanding of selected administrative tools.

The major in public administration has an interdisciplinary focus, which includes courses in government, economics, and statistics as well as public policy. Internships which permit students to assist public administrators in their work are available. Credit can be obtained for these internships.

All students who elect the public administration programs are to complete a
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)

Students who may become teaching majors are encouraged to take PSCI 304, Introduction to Political Science, as their first course in the department during their freshman year.

Students planning to use this major to meet teacher certification requirements are required to complete GEOG 460, Concepts and Strategies in the Teaching of Geography, or HIST 396, Teaching Methods in the Secondary School.

Teaching majors must also complete the secondary education minor in group social science.

MINOR

A teaching minor consists of 21 semester hours of work in political science. It is expected that transfer students will take at least one-half of the minimum required 21 hours in the department. A teaching minor shall complete PSCI 200 National Government.

PSCI 202 State and Local Government

PSCI 250 International Relations

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 SCIENCE

Students in the secondary education curriculum who major in Political Science must also complete the SED minor in group social science. Refer to the “Interdisciplinary Programs” section of this catalog for a description of the minor requirements.

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, Dr. M. Scot Tanner.

Foreign Study

Study abroad is encouraged by the Political Science Department. University funds are available to assist students who would like to spend a semester studying abroad. Credit toward any of the majors in political science can be obtained while studying in other countries. To explore these opportunities, talk with one of the faculty in the Political Science Department or contact Christina Sonneville, Foreign Study Coordinator, Office of International Affairs, 2090 Friedmann Hall.

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 by extending their educational experiences beyond the confines of the classroom. IGP also reaches out into the larger community, to the university, its immediate environment, the state and national scene, as well as the international arena. In this regard, IGP gives particular attention to the practical applications of political science training. It is therefore charged with the development of relationships between the Department of Political Science and the various colleges, departments, and programs comprising the University.

Courses By Topic

PRINCIPLES

100 Introduction to Political Science
105 Critical Thinking about Politics
366 Scope and Methods of Political Science

AMERICAN POLITICAL SYSTEM

200 National Government
202 State and Local Government
210 Citizen Politics
300 Urban Politics in the United States
304 Introduction to Public Policy
306 Environmental Politics
310 Political Parties and Elections
314 The Presidency
315 The Politics of Congress
320 The American Judicial Process
325 Criminal Justice Policy
404 Making of Public Policy in the U.S.
405 National Public Policy
420 Constitutional Law
422 Civil Liberties and Civil Rights
506 Problems of American Government
526 Administrative Law and Public Regulation

PUBLIC ADMINISTRATION

330 Introduction to Public Administration
530 Problems in Public Administration
531 Administration in Local and Regional Governments
533 Public Personnel Administration
534 Administrative Theory
536 Comparative Public Administration

FOREIGN AND COMPARATIVE POLITICAL SYSTEMS

240 Introduction to Comparative Politics
340 West European Political Systems
341 African Political Systems
342 Asian Political Systems
343 Latin American Political Systems
344 Russian and East European Politics
346 Women in Developing Countries
542 Administration in Developing Countries
444 Political Change in Russia
549 Problems of Foreign Political Systems

INTERNATIONAL RELATIONS

250 International Relations
350 American Foreign Policy
450 Seminar in International and Comparative Politics
552 Studies in International Relations
553 United Nations
555 International Law

POLITICAL THEORY AND METHODOLOGY

360 Introduction to the History of Political Theory I: Political Theory to Thomas Hobbes
361 Introduction to the History of Political Theory II: Political Theory from Thomas Hobbes to Karl Marx
362 Theoretical and Ideological Bases of Contemporary Politics
363 American Political Theory
395 Quantitative Methods for Political Scientists
562 Modern Democratic Theory
563 Theories of Revolution
590 Research Methods
591 Statistics for Political Scientists

Secondary Education Curriculum

MAJOR

The teaching major consists of a minimum of 30 semester hours of work in political science. It is expected that transfer students will take at least one-half of the minimum required 30 hours in the department. The following are required courses for teaching majors:

PSCI 200 National Government
PSCI 202 State and Local Government
PSCI 250 International Relations
Political Science Courses (PSCI)

A list of approved General Education courses outside in "Academic Policies and Procedures" earlier in this catalog.

PSCI 100 Introduction to Political Science
3 hrs.
An introduction to those concepts useful for an understanding of politics. These concepts and their interrelationships will be examined in the context of contemporary political systems.

PSCI 105 Critical Thinking About Politics
3 hrs.
The application of critical thinking to the analysis of politics. The basic components of logical argumentation will be applied to the examination of a variety of political, social, economic and ideological issues. Major topics to be covered include power, authority, political ideology, and the structures and processes of political systems.

PSCI 200 National Government
3 hrs.
An introductory survey of American national government. This course introduces the basic principles and theories of American government, explores the political process, describes the structure, and illustrates its functions. Consideration is given to the relationships of government to the ethnic, religious, and cultural diversity of the American society.

PSCI 202 State and Local Government
4 hrs.
A study of the institutions, the problems and the politics of policy making at the state and local levels in the United States. Consideration is given to the changing relations of state and local government to the total framework of government in the United States.

PSCI 210 Citizen Politics
3 hrs.
An examination of participatory democracy in the U.S., and the roles of the mass media and interest groups in influencing public opinion and voting behavior and public policy.

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 presented and substantively 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. Elements of public 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 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 extended 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 trends and forces challenging and reshaping democratic institutions are examined.

PSCI 341 African Political Systems
4 hrs.
A systematic survey of the social, economic and political characteristics of the area. Political culture, institutions and processes, including both traditional and modern forms, and examined in detail. Major 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, and examined in detail. Intra-national differences, intra-state political problems, country differences, and various paths to 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, including both traditional and modern forms, and examined in detail. Major problems dealing with political development 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 political processes of the communist period and the post-communist transition to widely divergent societies and politics. Social and economic policy and popular attitudes are also examined.

PSCI 346 Women in Developing Countries
4 hrs.
Women's socioeconomic and political role and status will be examined in relation to the impact of colonialism, forces of modernity, and developmental issues.

PSCI 350 American Foreign Policy
4 hrs.
An analysis of the institutions and processes by which the American people and their government determine and seek to achieve the national interest of the United States in the international community.

PSCI 360 Introduction to the History of Political Theory I: Political Theory to Thomas Hobbes
3 hrs.
A survey of political philosophy as it developed in Classical Greece, Rome, Medieval Europe, the Reformation and the Renaissance. Emphasis placed on comparative analysis of political philosophies as they reflect the richly diverse sociocultural conditions of these periods.
PSCI 361 Introduction to the History of Political Theory I: 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 ideological systems of the modern period: conservatism, liberalism and socialism.

PSCI 362 Theoretical and Ideological Bases of Contemporary Politics
3 hrs.
A survey of the more significant developments beginning with the confrontation between socialism and liberalism and concluding with an analysis of the ideological trends and ideologies that have emerged in our own time.

PSCI 363 American Political Theory
3 hrs.
An exposition and critical analysis of American political thought from the Puritans to the contemporary period, with primary emphasis on concepts of democracy, liberty, and property, and on varieties of liberalism and conservatism.

PSCI 366 Scope and Methods of Political Science
3 hrs.
An introduction to the discipline of political science, including an examination of the development of political science and the methods and approaches used by contemporary political scientists to describe, explain, predict and evaluate political phenomena. Prerequisite: 9 hours of political science.

PSCI 370 Issues in Contemporary Politics
3-4 hrs.
This course is designed for the study of contemporary political problems. It is intended to provide opportunity for the study of political phenomena normally beyond the scope of regular departmental offerings. Essentially the course relates the theory and principles of political science to practical politics. The course may be applied to the appropriate field distribution requirement. Topics will vary from semester to semester. Students may repeat the course for credit.

PSCI 390 Field Work in Political Science
1-12 hrs.
An opportunity for students of Political Science or Public Administration to test theoretical and practical knowledge in an internship situation under the supervision of a faculty sponsor and a public or public-related official. Students wishing to apply must have a minimum of fifteen hours in Political Science and department approval before registering. Approved application required. Graded on a Credit/No Credit basis.

PSCI 391 Internship Seminar
3 hrs.
An undergraduate seminar in conjunction with Field Work in Political Science (PSCI 390). An emphasis will be placed on readings that analyze the administrative realm and also focus on recent political, economic, and social developments. Interns also will discuss their field experiences. Department approval must be obtained to enroll for this seminar.

PSCI 395 Quantitative Methods for Political Scientists
3 hrs.
The 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. Prerequisite: PSCI 350 or consent of instructor.

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 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 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 governments in the area visited; and issues of political importance in the area visited. An overview of both general themes of political economy and the political history of the region visited will be included in the course. Prerequisite: 12 hours of social science or 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. It is designated as one of the department's writing intensive courses. Prerequisites are PSCI 250, 350, any one of the PSCI 340 series, and approval of the instructor.

PSCI 490 Political Science Honors Seminar
3 hrs.
An undergraduate seminar for honor students and others admitted by consent of the Department Honors Committee. The content of the seminar varies and will be announced in advance. May be repeated. Prerequisite: Admission by permission of the Department Honors committee.

PSCI 492 Political Science Honors Research
2-3 hrs.
Honor students, with the guidance of a faculty advisor, conduct research and write the Honors Paper on a topic of individual interest. Prerequisite: Membership in the Political Science Department Honors Program and approved application 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. 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 or 4 hrs.
A critical examination of major problems facing national, state, or local government with emphasis upon contemporary efforts and studies designed to understand or solve such problems. Topics will vary from semester to semester and students may repeat the course.

PSCI 526 Administrative Law and Public Regulation
3 hrs.
A study of the requirements for, and the limits on, the exercise of administrative powers by public officials charged with regulating significant aspects of the social and economic life of the nation. Special attention is paid to the extent of governmental regulations and the means of safeguarding individual rights through fair administrative procedures and judicial control over administrative determination. Prerequisite: PSCI 200 or a course in Economics.

PSCI 530 Problems in Public Administration
3 or 4 hrs.
Consideration of issues and problems of current interest in the field of public administration. The course is intended to provide advanced work for undergraduates and to serve as an introduction to the field for graduate students without previous training in public administration.

PSCI 531 Administration in Local and Regional Governments
3 hrs.
The administrative organization, structure, procedure and forms of local units of government are analyzed.

PSCI 533 Public Personnel Administration
3 hrs.
A study of descriptive theories of 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 and administrative history of these systems are compared with current systems found in the Western world and African systems. Various public administration systems in Western Europe, North America, the Soviet Union, and in contemporary Asian and African systems.

PSCI 542 Administration in Developing Countries
3 hrs.
A consideration of the relation of administrative structure and technique to the political, economic and social problems of the developing countries. Special attention is given to the role of the bureaucracy in the political system and the nature of, and obstacles to, administrative modernization.

PSCI 544 Political Change in Russia
3 hrs.
An examination of processes of political change in Russia in areas of policy and structure. Past reform efforts in the former Soviet Union and Russia are studied, followed by an extensive inquiry into system change. The course relates the Soviet and Russian experience to the literature on political change and theories of comparative politics.

PSCI 549 Problems of Foreign Political Systems
3 or 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.

PSCI 552 Studies in International Relations
3 or 4 hrs.
Examines selected topics within the field of international relations. Topics will vary and will be announced each semester. Course may be repeated.

PSCI 553 United Nations
3 hrs.
A study of the United Nations in action. Attention is focused on significant political, economic, and social problems of the United Nations, the relationship of law to the dynamics of international politics, and the relationship of international law to the dynamics of international politics. Decisions of international and municipal tribunals and the practices of states will be used to demonstrate the basic rights and obligations of states in time of peace and war. Such topics as recognition of states, diplomatic practice, treaties and neutrality will also be discussed.

PSCI 562 Modern Democratic Theory
3 hrs.
The course consists of two parts. First, a consideration of traditional democratic theories, and the criticism of these theories emanating from modern elitists such as Mosca, Michels, Pareto and Ostrogorski. Second, an analysis of the attempts by contemporary economists, political scientists, and sociologists to meet these criticisms by revising democratic theory.

PSCI 563 Theories of Revolution
4 hrs.
Examines significant classical and contemporary theories of revolution with reference to both their analytical and normative implications.

PSCI 572 Computer Applications for Political Scientists
3 hrs.
This course is designed to provide students in Political Science and Public Administration with a foundation in computer concepts and applications. They will learn to use application packages such as SPSS and DPL. The course includes computer exercises and a term project. Prerequisite: CS 105 or equivalent or consent of instructor.

PSCI 590 Research Methods
3 hrs.
Study of the formulation of research questions, the design of research, the methods of data collection, and the procedures for analyzing data concerning political institutions and behavior.

PSCI 591 Statistics for Political Scientists
3 hrs.
An introduction to statistical reasoning with particular reference to research on political institutions and behavior. This course will emphasize bivariate statistics, but will include a brief introduction to multivariate analysis. No mathematical prerequisite is required.

PSCI 598 Studies in Political Science
1-4 hrs.
An opportunity for advanced students with a foundation in political science to pursue independently the study of some subject of interest to them. Subjects are chosen and arrangements made to suit the needs of individual students. Approved application required.

PSYCHOLOGY

Howard E. Farris, Chair
Galen J. Aleski
Kevin J. Armstrong
Lisa E. Baker-Oldham
Dave M. Brethower
Anna Kay Campbell
Alyce M. Dickinson
Krystal Erhardt
Douglas P. Ferraro
R. Wayne Fuqua
Bradley E. Huliterna
Neil D. Kent
David O. Lyon
Richard W. Malott
Patricia M. Menhold
Jack L. Michael
Alan Poling
Malcolm H. Robertson
C. Richard Spates
Roger E. Ulrich

Pre-Psychology Major (PPY)

ADMISSION REQUIREMENT
Any freshman or transfer student planning to pursue psychology as a major will be admitted as a pre-psychology student (PPY) and will work with a psychology advisor to develop a planned program. Admission as a major requires that the student complete PSY 100, 160, and 250, all with grades of "C" or better.

Transfer students who present appropriate psychology courses will be evaluated and may be admitted on an individual basis directly into the program. Transfer students with no psychology courses will be required to take PSY 100, 160, and 250, and receive a grade of "C" or better in each course.

Application forms and additional information can be obtained from the departmental office or from a psychology advisor. Students who do not meet admission requirements will be informed of steps they can take to earn admission. Admission of students on a probationary status to the psychology major will be considered on an individual basis.

Baccalaureate Writing Requirement
Students who have chosen the Psychology major will satisfy the Baccalaureate Writing Requirement by successfully completing one of the following courses:

PSY 330 Methodology of Behavior Analysis
PSY 460 Survey of Behavior Analysis Research

Psychology Major
A minimum of nine (9) hours must be taken from the WMU Psychology Department.

34 hours

Introductory Core (9 hrs.)
PSY 100 General Psychology .............. 3
PSY 160 Child Psychology .............. 3
PSY 250 Abnormal Psychology .............. 3

Method and Theory Core (13 hrs.)
PSY 300 Statistics for the Behavioral Sciences .............. 3
PSY 330 Methodology of Behavior Analysis .............. 3
PSY 360 Concepts and Principles of Behavior Analysis .............. 4
PSY 460 Survey of Behavior Analysis Research .............. 3
Psychology Minor
A minimum of six (6) hours must be taken from the WMU Psychology Department.
A minimum of 15 hours
PSY 100 General Psychology 3
and in addition
PSY 160 Child Psychology 3
PSY 250 Abnormal Psychology 3

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 3.6.
3. Completion of PSY 499. Honors Project in Psychology (6 credit hours) and the preparation of an Honors Thesis.
4. The successful defense of the Honors Thesis before a departmental committee.
5. Participation in a professional apprenticeship program (2 credit hours).

Psychology Courses (PSY)
A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

PSY 100 General Psychology 3 hrs. Fall, Winter
An eclectic approach to a social and behavioral survey of major topics in psychology, including learning, motivation, intelligence, personality, mental illness, and social relations. Approved for General Education.

PSY 150 Introduction to Human Behavior 3 hrs.
An introduction to general psychology from the point of view of humanistic behaviorism: the use of the science of behavior to help people achieve their full potential as human beings. Emphasizes how the environment has a major influence on the way we are and how the environment can be changed so that we can be who we wish.

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 which is supervised by advanced students enrolled in a practicum course.

PSY 250 Abnormal Psychology 3 hrs. Fall, Winter
An introduction to the description, classification and interpretation of human behavior labeled by society as "abnormal" with an emphasis on the social variables and environmental conditions related to the acquisition and persistence of such behavior. Prerequisite: PSY 100.

PSY 255 Teaching Apprenticeship in Abnormal and Social Psychology 2-4 hrs.
A laboratory course in the instructional methods of teaching abnormal psychology. Prerequisite: PSY 250. 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.

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. Prerequisite: PSY 300 or consent of instructor.

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 workplace, behavioral applications in the 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 stucture and design, and employee motivation and stress. Open only to Employee Assistance Academic Program majors. Prerequisite: PSY 100.

PSY 347 Practicum: Learning and Self-Management 3 hrs.
Supervised experience in the application of principles of behavioral 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. Prerequisite: PSY 100. May be repeated for credit, but does not fulfill major/minor requirements.
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, and PSY 300.

PSY 362 Experimental Analysis of Behavior 3 hrs.
An advanced level coverage of respondent and operant behavior. There is an emphasis upon research design, the theoretical interpretation of data, experimental methodology and the techniques of response measurement. Prerequisite: PSY 300. Concurrent enrollment in PSY 368 is required.

PSY 368 Laboratory in Experimental Analysis 3 hrs.
An advanced laboratory emphasizing the variations in response measurement and experimental methodology in research areas within operant conditioning. 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 brain alterations. Lecture only. May be taken concurrently with PSY 378. A previous course in biology or chemistry is helpful but not required. Prerequisites: PSY 250.

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 academically remediated, nutrition, health and physical education programs. Students learn the techniques of direct instruction and other programs while serving as apprentice teachers. Prerequisite: PSY 330.

PSY 378 Laboratory in Physiological Psychology 3 hrs.
An intermediate laboratory and companion to PSY 372 emphasizing the acquisition of laboratory techniques, surgical skills and research methodology in physiological psychology and brain behavior interactions. Laboratory procedures, research methodology, data analysis and professional writing are stressed. Concurrent enrollment in PSY 372 is required.

PSY 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-aged 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, and PSY 397.

PSY 397 Practicum in Psychology 3 hrs.
Supervised experience at a community based mental health site as announced in the schedule of classes or as approved by the undergraduate advisor. Corresponding seminar sessions provide structure and integration of the experience with other practicum experience. This course may be repeated for credit with different experiences. Prerequisites: PSY 100, PSY 160, PSY 250.

PSY 398 Independent Study 1-5 hrs.
This course provides the undergraduate student with the opportunity for independent reading and/or research under the direction of a Department staff member. Written permission must be obtained from the available departmental office. May be repeated for credit within 10 hours. Prerequisite: 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.

PSY 460 Survey of Behavior Analysis Research 3 hrs.
An overview of diverse topics of behavior analysis research and applications. Topics include: clinical psychology, child psychology, behavioral medicine, environmental quality, mental retardation, education and genetics. Prerequisite: PSY 330 and 360.

PSY 462 Individual, Group, and Family Treatment 3 hrs.
This course provides an overview of individual, group and family treatment modalities. Concepts, intervention strategies, and specific methods of current treatment models are presented through lecture, assigned reading, hand-outs, and film. Included are assignment on demonstration and practice of micro-counseling skills. Treatment focus is the employed adult whose job performance is adversely affected by mental health and/or substance abuse problems. Open only to Employee Assistance Academic Program majors. Prerequisite: PSY 250.

PSY 463 Management of Health-Related Behaviors 3 hrs.
A behavior analysis approach to the management of behavior directly and indirectly affecting health. Emphasis will be placed on out-patient, public health applications and preventive approaches in health maintenance. Prerequisites: PSY 100, PSY 160, PSY 250.

PSY 464 Systems and Theories in Psychology 3 hrs.
A critical examination of the assumptions, methods and problems of several major schools of psychology; Structuralism, Functionalism, Associationism, Behaviorism, Gestalt Psychology and Psychanalysis. Prerequisite: 9 hours of psychology.

PSY 474 Experimental Social Psychology 3 hrs.
Methodology of research with groups of animals and humans with emphasis upon design, application and ethical implications. Prerequisites: PSY 100, PSY 160, PSY 250.

PSY 490 Honors Projects in Psychology 1-5 hrs.
Independent study and research projects completed under the supervision of a faculty member and coordinated through the Department Honors Program. Prerequisite: Permission of instructor.

All 500 level courses in the Department of Psychology have a prerequisite of junior level status and of PSY 360 (Concepts of Principles of Behavior Analysis) and PSY 330 (Methodology of Behavior Analysis). Exceptions to this requirement must be approved by the course instructor on a case-by-case basis.

PSY 510 Advanced General Psychology 3 hrs.
Readings, lecture and discussion designed to introduce non-majors in psychology to modern behavior theory. Emphasis will be upon human behavior, both normal and abnormal, with a significant portion of the course devoted to the higher cognitive processes. Prerequisite: Permission of instructors.

PSY 513 Research in Animal Behavior 3 hrs.
Research in various areas of animal behavior. An individual research project is required with emphasis on animal learning processes. Research design, data collection, analysis and reporting are included.

PSY 517 Psychology of Learning for Teachers 3 hrs. Fall, Winter
Designed to teach the principles of behavior and the special application of these principles to teaching. Topics include the use of behavior principles in the development of objectives, selection and preparation of instructional material, classroom management and incentive motivation, behavior change, performance contracting and program evaluation. Practical application is stressed.

PSY 518 Stimulus Control and Perceptual Processes 3 hrs.
An examination of the literature surveyed sensory and perceptual processes with an emphasis upon the research methodology in, and theoretical interpretation of data from studies of stimulus control and discrimination in non-human animals. Prerequisites: 9 hours of psychology or permission of instructor.

PSY 519 Corrective and Remedial Teaching 3 hrs.
An introduction to and survey of various content skills, curriculum approaches and special teaching techniques used in elementary school reading and mathematics.
instruction. Designed primarily for prospective school psychologists. Focus is on academic skill content, sequencing of skill hierarchies, devising short term educational plans to teach specific skills and evaluating the effectiveness of such plans. Prerequisite: Graduate standing in psychology, education or permission of instructor.

PSY 524 Human Sexuality 3 hrs. Fall
Discussion of those human behaviors concerned with sex, sexuality and reproduction. Consideration is given to the anatomical and psychological properties of sexual functioning in male and female. Emphasis is placed upon the sexual response cycle as described by Masters and Johnson. The course is not intended to provide therapy training.

PSY 526 Human Drug Use and Abuse 3 hrs.
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. Although human drug use and abuse will be the primary focus of the course, non-human research findings will be emphasized where appropriate.

PSY 535 Instrumentation and Computer Use in Psychology 3 hrs.
A survey of problems of response measurement in experimentation. Lecture and laboratory. May be repeated for credit.

PSY 560 Behavioral Medicine 3 hrs.
Application of behavioral technology to medical patients with emphasis on in-patient treatment. Sample topics include biofeedback, pain control, compliance with medical regimen and issues of work in a medical setting.

PSY 570 A Behavior Analysis Approach to the Area of Retardation 3 hrs.
Topics will include: Historical background, assessment, training and legal implications of treatment.

PSY 578 Research Practicum: Developmentally Disabled Population 3 hrs.
Supervised experience at the Croydon Avenue School which offers an educational program for the developmentally disabled. This course involves a variety of problems in behavior change and learning which can be studied at the school. The research problems are carefully selected to be beneficial to the client and provide appropriate experience for the student. Data collection and report writing are stressed. Prerequisite: PSY 570 or concurrent enrollment.

PSY 595 History of Psychology 3 hrs.
The historical and philosophical foundations of contemporary American psychology.

PSY 597 Topical Studies in Psychology 2-4 hrs.
A survey and discussion of selected research topics of current interest. Topics may include both basic science and applied aspects of the discipline. Permission of instructor. Courses may be repeated for credit although the total number of credits may be limited by the degree program. Students should consult the program advisor. Courses may include the following:
- Parent Training
- Studies in Industrial Psychology
- Computer Assisted Instruction
- Theory of Direct Instruction

PSY 598 Special Projects in Psychology 1-5 hrs.
This course provides the graduate student with the opportunity for independent reading and/or research under the direction of a faculty member. Graduate standing and permission of instructor. May be repeated for credit, although the total number of hours in a degree program may not exceed 5 hours.

PSY 599 Practicum in Psychology 2-4 hrs.
In depth training in the application of the principles of behavior to a specific and restricted problem area in the discipline. The 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. May be repeated for credit although number of credits may be limited by program requirements. Written permission must be obtained from the department.

PUBLIC AFFAIRS AND ADMINISTRATION

Susan B. Hannah, Director
Ralph C. Chandler
David S. DeShon
George James
Peter Kобрak
Robert A. Peters
Kathleen M. Reding
James A. Visser

The School of Public Affairs and Administration offers courses, seminars, and workshops designed to prepare Master of Public Administration (MPA) and Doctor of Public Administration (DPA) degree candidates for leadership positions in public and independent sector agencies.

Public Affairs and Administration (PADM)

Undergraduates with senior status in appropriate major fields, may enroll in 500-level courses with prior approval of the student's advisor or have the consent of the program director.

PADM 532 Program Planning and Proposal Writing 3 hrs.
This course seeks to build skill in program planning, program management, and proposal writing. The first part of this course will be devoted to the grantmanship process, including how to: formulate and promote a project concept; prepare the project proposal; submit the project proposal; and follow-up after acceptance or rejection of the proposal. Emphasis will be placed upon the project proposal as an integral component of agency planning, program management, and assessment activities, from both grantor and grantee perspectives. In the second part of this course each participant will prepare a project proposal.

PADM 572 Computer Applications in Administration 3 hrs.
Administrators at all levels increasingly rely upon computers to perform the tasks for which they are responsible. Whether to prepare reports, access data, or communicate with others, administrators at all levels of the organizational hierarchy are expected to possess a certain minimum facility with this technology. In this introductory technical core course, MPA degree candidates will become proficient in the administrative uses of computers.

PADM 598 Readings in Public Administration 1-4 hrs.
A program of independent study to provide the well qualified MPA candidate with an opportunity to explore in-depth a topic or problem of interest under the guidance of a faculty member. The end product of this effort may be an annotated bibliography, a bibliographic essay, or a major paper. Planning a topic for investigation is a joint responsibility of the candidate and supervising faculty. Approval is contingent upon the merits of the proposal. Prerequisite: Consent of both instructor and School Director.

PADM 599 Topics in Public Administration 1-4 hrs.
A variable topic course dealing with particular issues of interest and concern to students of public affairs and administration. Since content varies, students are advised to read course descriptions distributed by the School. The course may vary in the number of credit hours awarded and may last more or less than a semester's length.
the study of science and the impact of science on the human condition. Faculty in the three components, thus, try to:

1. assist students in developing the ability to think critically, seek knowledge, and apply knowledge in decision making,
2. help students develop confidence in their ability to make judgements while acquiring a willingness to reconsider their judgments in light of new insights, information, and values,
3. expose students to the scientific mode of inquiry and encourage them to develop an interdisciplinary perspective, and
4. help students develop a responsible awareness of themselves as human beings living in a variety of social and physical environments, and an awareness that each set of those social-physical environments is interrelated in an increasingly interdependent world.

The faculty of the department has developed:
1. graduate programs in science education leading to Master of Arts and Doctor of Philosophy degrees; and
2. individual courses for meeting the University General Education requirements
3. undergraduate programs in environmental studies leading to an EVS Major, a Teaching Minor, and a Non-Teaching Minor.

Science Education
The graduate programs in science education are described in the Graduate Catalog. In addition, the department offers science courses for General Education, Liberal Education, and for those students majoring in education. The department also houses the Center for Science Education. The Center offers many in-service workshops and educational opportunities for area teachers.

Interdisciplinary Studies
The department offers interdisciplinary courses most of which are designed to contribute to the general education of the University students.

Environmental Studies

ADVISING
Given the interdisciplinary nature of the program, it is very important that students work with one of the program advisors on an ongoing basis. Enrollment in ENVS courses is controlled by the advisors and is inaccessible to students using the Touchtone registration system. Program advisors are also available to help students clarify their career goals and assist them in their choice of a second disciplinary major. Information about internships, international experiences, summer jobs, graduate programs, and career opportunities is also available in the program office.

ACADEMIC STANDARDS
Students in all options of the Environmental Studies Program must earn at least a grade of “C” in all courses counted for their major/minor.

BACCALAUREATE WRITING REQUIREMENT
Students who have chosen an Environmental Studies major will satisfy the Baccalaureate Writing Requirement by successfully completing ENVS 320 Major Environmental Writings.

LIBERAL EDUCATION/GENERAL EDUCATION REQUIREMENTS
Students in the Arts and Sciences curriculum who successfully complete the Environmental Studies Program must be deemed to have satisfied the criteria for Areas 4, 5, 6, 7 and 12 of the Liberal Education Curriculum. Beginning Fall 1996, students in other curricula who successfully complete the Environmental Studies program will be deemed to have satisfied the criteria for Areas V, VI and VII of the new General Education requirements (limited to 10 hours effective Fall 1996).

MAJOR
Since the Environmental Studies Program is broadly interdisciplinary in scope, students opting for a major in the program are required to take a second major, chosen from any college of the University at the student’s discretion, to provide requisite depth in a particular discipline.

Those choosing their disciplinary major from within the College of Arts and Sciences have the option of selecting either major as their first or degree major. If the Environmental Studies major is selected as the degree major, the student will 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.

Those choosing a disciplinary major from outside the College of Arts and Sciences must consider that disciplinary major to be their first degree major, with the EVS major being their second major.

In all instances the student must fulfill the following program requirements:
1. Successful completion of a minimum of 35 semester hours of approved course work in ENVS courses as listed below
2. Selection of a second, disciplinary major, appropriate to the student’s career goals.

In addition to these program requirements, students selecting the EVS major as their first major must satisfy the College of Arts and Sciences curriculum requirements as well as all University degree requirements. Those selecting the disciplinary major as their first major must satisfy the curriculum requirements identified by that disciplinary major as well as all University degree requirements.

ENVIRONMENTAL STUDIES MAJOR
35-36 hrs. plus cognates
1. PROGRAM INTRODUCTION ENVS 110 Introduction to Environmental Studies . . . . 3
2. CONCEPTUAL FOUNDATIONS 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 Earth Science . . . . 3
ENVS 240 Cultures and Global Change . . . . 3
ENVS 250 Political Economy of the Environment . . . . 3
3. SKILLS AND VISION
Prerequisites for all three courses below are ENVS 110 and all 200-level 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
ENVS 360 Values and Sustainable Society . . . . 4
4. APPLICATIONS
A minimum of four semester hours required from the 400-level courses listed below. Courses taken from this group to satisfy the level two requirement do not count toward this total. Prerequisites are ENVS 110 and all 200-level courses listed above or approval of a program advisor.
ENVS 401 Selected Environmental Topics . . . . 3
ENVS 410 Appropriate Technologies and Sustainability . . . . 3
ENVS 420 Internship . . . . 1-3
ENVS 430 Environmental Projects . . . . 1-4
ENVS 440 Field Experience . . . . 1-4
5. CAPSTONE
Environments are ENVS 350 and ENVS 360 or approval of a program advisor.
ENVS 450 Senior Seminar in Environmental Studies . . . . 3
6. COGNATES
In addition to the core courses listed above, each student opting to take an Environmental Studies major will be required to take a minimum of one cognate course from a list of departmental courses identified as potential cognates for specific dual-major packages. The course chosen must be approved by a program advisor.

MINORS
The Environmental Studies Program offers both a non-teaching and a teaching minor. These minors are offered for students who are unable to pursue a major but still seek some insights into the nature of environmental concerns.

THE NON-TEACHING MINOR
22-23 hrs.
Those electing a non-teaching minor in Environmental Studies must successfully complete a minimum of 22 semester hours of approved course work within the program.
1. PROGRAM INTRODUCTION ENVS 110 Introduction to Environmental Studies . . . . 3
2. CONCEPTUAL FOUNDATIONS Prerequisite for all five courses below is ENVS 401 or approval of a program advisor. Students whose disciplinary major is in Cultural Anthropology, Biology, Chemistry, Environmental Resource Management, or Political Science may,
SKILLS AND VISION

Those electing a teaching minor in having a major in an approved science discipline. Those electing a teaching minor in Environmental Studies must successfully complete a minimum of 22 hours of approved course work within the program.

1. PROGRAM INTRODUCTION
   ENVS 110 Introduction to Environmental Studies 3 hrs.

2. CONCEPTUAL FOUNDATIONS
   Prerequisite for all five courses below is ENVS 110 or approval of a program advisor. Students may, with the approval of a program advisor, substitute ENVS 360 for the science course below that is in their major discipline.
   - ENVS 210 Environmental Ecology 3 hrs.
   - ENVS 220 Environmental Physical Science 4 hrs.
   - ENVS 230 Environmental Earth Science 3 hrs.
   - ENVS 240 Cultures and Global Change 3 hrs.
   - ENVS 250 Political Economy of the Environment 3 hrs.

3. SKILLS AND VISION
   An approved environmental/outdoor education course chosen in consultation with a program advisor. 3-4 hrs.

Environmental Studies Courses (ENVS)

ENVS 110 Introduction to Environmental Studies 3 hrs.
This course is an interdisciplinary introduction to the study of environmental concerns open only to those enrolled as majors or minors in the Environmental Studies Program. Through the use of case studies and other methods, students will be introduced to the broad array of local, regional and global environmental problems facing the human race. 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, 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 course is designed to provide students with a working knowledge of the laws of physics and the chemistry that constitute 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 technological/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 reviewed 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 will be used to develop criteria to evaluate which will better mitigate global threats and be socially sustainable. Prerequisite: ENVS 110 or approval of a program advisor.

ENVS 250 Political Economy of the Environment 3 hrs.
This course reviews the political and economic assumptions underlying twentieth century political and economic systems. It analyzes the political economy of environmental policy-making and regulation in the United States. It discusses emerging alternatives that are based upon principles of sustainability and the challenges involved in institutionalizing them. Prerequisite: ENVS 110 or approval of a program advisor.

ENVS 320 Major Environmental Writings 3 hrs.
This course utilizes selected readings of classical works from an environmental field, together with current works of significant importance, to introduce students to the wisdom and the variety of voices speaking on behalf of the environment and environmentally responsible courses of human action. Course satisfies the baccalaureate level writing requirement. Prerequisite: Required conceptual foundations courses or approval of a program advisor.

ENVS 350 Environmental Problem Solving 4 hrs.
This course develops an approach to solving complex problems, together with specific skills for analyzing problem situations and making decisions. It introduces students to the structure and behavior of complex systems and to the elements 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 the sustainability of our natural and social systems. It presents the decisions that we make and 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 of approval of a program advisor.

ENVS 401 Selected Environmental Topics 3 hrs.
An intensive, focused study of an environmental topic such as solid waste management and resource recovery, energy management, environmental law, or environmental communications. Topic to be announced in the Schedule of Classes. This course may be repeated for credit with a second topic. Prerequisite: Required conceptual foundations courses or approval of a program advisor.

ENVS 410 Appropriate Technologies and Sustainability 3 hrs.
In the light of the debates on sustainability, the course analyzes how technological and technological systems have interacted with and influenced social change in both industrial countries and the Third World. Criteria for assessing the sustainability and ethical systems in different settings will be discussed and mini-assessments will be conducted. Prerequisite: Required conceptual foundations courses or approval of a program advisor.

ENVS 420 Internship 1-3 hrs.
The environmental internship gives students the opportunity to gain practical experience in a particular area of environmental activity, and to work with professionals. Students will gain “hands on” knowledge and add an important non-academic dimension to their resumes. Prerequisite: Approval of program advisor.

ENVS 430 Environmental Projects 1-4 hrs.
This course is designed for students who wish to carry on advanced interdisciplinary work in Environmental Studies under the direction of a faculty member. Work will be geared to a single project in which there is outside investigation, research, and/or workshop experience. Students selecting this course will work on projects especially designed for them by their advisor. Students are 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.

ENVS 440 Field Experience 1-4 hrs.
This course is a vehicle to provide academic credit for students participating in legitimate off-campus environmental field programs and foreign exchange programs. Credit is not repeatable for up to eight hours of academic credit. Prerequisite: Approval of a program advisor.

ENVS 450 Senior Seminar in Environmental Studies 3 hrs.
A team-taught, integrated capstone experience involving a semester-long environmental problem-solving 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.
Science Courses (SCI)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

SCI 132 Aims and Achievements of Science 4 hrs.
This course is designed as a broad philosophical and historical view about science as a human endeavor. It examines the aims or goals of science and compares these to the achievements of the scientific enterprise, as well as demonstrating the methods of science and other methods of obtaining reliable information. The course, designed for the non-scientist, is a non-mathematical examination of science and the way it affects and is affected by culture. The interrelationships between science and other disciplines and some of the important issues of our day are discussed.

SCI 133 Issues in Social Biology 4 hrs.
This course involves a study of some recent advances in biology and medicine, their social and ethical implications, and the public-policy problems raised by such questions as organ transplantation, drugs, population, food, 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 231 Physical Science in Elementary Education 4 hrs.
This course is a continuation of SCI 180 for those students who desire or need further study in the concepts and methods of the physical sciences. Instruction will be in laboratory sections of limited size; and a learning-by-doing inquiry approach will be utilized. This course will further elaborate on some concepts introduced in SCI 180 and will also introduce additional important concepts in the physical sciences. Prerequisite: SCI 180 or consent of instructor.

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 prospective high school science teachers 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 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 590 Earth Science Workshop for Teachers 1-3 hrs.
This course will involve participants in several activities especially designed to help them achieve an understanding of some of the important concepts of earth science. The course is designed and taught to address the needs of K-12 teachers. It is a variable topics course and may be repeated for credit if different topics are involved. Intended for delivery in one-to-two-week workshop format.

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.

Interdisciplinary Courses (GENL)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

GENL 305 Non-Western Societies in the Modern World 4 hrs.
An analysis of the distinctive cultural configuration of one of the following regions: East Asia, Southeast Asia, South Asia, the Middle East and North Africa, Sub-Saharan Africa. The types of transition being made in the particular region from a traditional to a modern society will be explored through an examination of the interrelationship between technology, social structure and ideology.

GENL 325 Self-Images and Social Images 4 hrs.
An inter-disciplinary inquiry into the personal and social factors which shape self-images. The course will examine how images of the self are related to the images of other individuals and groups. The aim is to understand how this process affects the quality of our lives.

GENL 356 In Pursuit of Awareness 4 hrs.
This course is a study of the methods and techniques by which individuals acquire, transmit, utilize and block knowledge. The students apply various theories of perception...
in case-studies, exercises and simulated problems during classroom sessions and in written assignments. These sessions and assignments are designed to give students insights and skills of interpretation that will be useful to them throughout their lives.

GENL 499 Independent Study in General Studies
1-8 hrs.
Various extra-classroom activities, including independent reading or research under the direction of a faculty member or projects associated with field experience or travel of recognized educational value. Prior arrangement with a faculty member and prior approval of the Chair of the Department of Science Studies. May be repeated for credit. This course will not be accepted for General Education credit without approval.

SOCIAL SCIENCE TEACHING MINORS
See “Interdisciplinary Programs” in the College of Arts and Sciences.

SOCIOLOGY
Lewis Walker, Chair
Susan Caringella-MacDonald
Susan A. Carlson
Susan L. Caultfield
Charles E. Crawford
Douglas V. Davidson
Thomas E. Ford
Ronald C. Kramer
Richard R. MacDonald
Gerald Markee
Ellen Page-Robin
James C. Petersen
Herbert L. Smith
Zoann Snyder-Joy
Subhash R. Sonnad
Sylvie C. Tourigny
Thomas L. Van Valey
Morton O. Wagenfeld
Robert Wait

Courses are designed to give students a better understanding of the significant factors and processes of modern life; to provide study useful for particular applied fields, such as social work, criminal justice, market research, opinion polling, city, state, and federal governmental service, and social research; to meet the needs of students preparing to teach in the social science field; and to prepare students for graduate work in sociology or criminal justice.

The Kercher Center for Social Research, as the research arm of the department, provides facilities and services available to students as well as faculty for instructional and research purposes. The center maintains computer and other research facilities that are used in research course instruction. Research conducted through the center has dealt with subjects such as: criminal justice, marital roles, race relations, voting behavior, alcoholism, mental health, demography, and education.

Honors Program
Students in sociology and criminal justice may participate in the department honors program in three ways:
1. Membership in Alpha Kappa Delta, the national sociology honorary society. AKD is open to all students who have completed at least ten hours in sociology with a grade point average of 3.0 or better, and whose overall average is at least 3.0.
2. Leonard C. Kercher Fund Awards are made each year for outstanding student achievement. Dr. Kercher was head of the department from 1940 to 1972.
3. Membership in Alpha Phi Sigma, the national criminal justice honor society. Alpha Phi Sigma is open to all criminal justice students who have completed at least one third of the credit hours required for graduation with an overall grade point average of 3.0 or better, and whose criminal justice average is at least 3.2.

Further information and application forms may be obtained at the Sociology Office, 2420 Sangren Hall.

Advising
DEPARTMENT ADVISOR
2407 Sangren Hall, 387-5286. Students must consult the department advisor for major/minor slips in Sociology, Criminal Justice, and the Social Psychology Concentration and for the evaluation of transfer credits, or for any other questions involving majors or minors.

Undergraduate Assistantships
Students interested in becoming more involved in the department’s activities and projects may wish to apply for undergraduate assistantships which are available fall and winter semesters. Department assistants receive a moderate stipend and are assigned to work for a faculty member or department project. Applicants for these awards are also considered for the Kercher Award. For further information and application forms, see the department advisor.

Baccalaureate Writing Requirement
Students who have chosen the Sociology major will satisfy the Baccalaureate Writing Requirement by successfully completing SOC 456 Social Stratification.

Sociology Major
A major in sociology consists of a minimum of 30 hours in sociology courses: SOC 200, 300, 320, 382, 383, and 456 are required. Students may choose their electives from the many offerings in the Department. At least two of the courses must be 400-500 level. Only one 100-level course may be used (SOC 182 is not an allowable elective). Limitations include:
1. A maximum of 12 hours transferred from a two-year institution may be included; (2) at least 9 hours must be taken at Western Michigan University; (3) no more than one course at the 100-level may be included. Any variance of the above requirements must be approved by the Undergraduate Advisor, 2407 Sangren Hall.

Honors Program
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.

Sociology Major, Accelerated BA/MA Program
This program is intended for the exceptional sociology major who intends to pursue a disciplinary masters degree in sociology at Western Michigan University. It is designed to accelerate progress toward the attainment of the disciplinary masters degree in sociology.

Prerequisites include:
1. application during the second semester of junior standing,
2. declared sociology major; and
3. recommended 3.4 GPA overall, based on at least 30 hours at WMU.

The program requires completion of all requirements of the Sociology major with this difference: SOC 581 and one additional 500-level sociology course be taken during the junior year and SOC 622, or SOC 603, or SOC 625 and one additional 600-level sociology course be taken during the senior year as part of the thirty-hour minimum requirement for the Sociology Major.

Applicants will be considered for this program by evaluation by the Department of Sociology. Upon completion of the BA the participant will apply for admission to the MA program in Sociology through standard procedures.
Sociology Minor
A minor in sociology consists of 18 hours. SOC 200 and 210 are required in either case. 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.

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. While the goal of the program is to provide knowledge and skills necessary for students interested in careers in criminal justice, it will support a number of related areas. In addition, students will be well prepared to pursue professional or graduate work in law, criminology, or other areas. Students should consider internships. Not all students are guaranteed internships and some placements require the applicant to undergo security checks. Applications are required.

CRIMINAL JUSTICE MAJOR (33 hours)
Required Prerequisites
The following courses are required before taking any of the core courses. These hours are not included in the 33 hour requirement for the major.
SOC 200 Principles of Sociology or
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.

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
SOC 454 Juvenile Delinquency
SOC 466 Advanced Criminology

Research Methods Requirement
The following is required:
SOC 382 Methods of Sociological Inquiry I (3)

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 495 Special Topics in Sociology and Criminal Justice (when applicable)

SOC 560 Corporate and Governmental Crime
SOC 561 Violence and the Violent Offender

SOC 562 Victimology
SOC 563 Gender and Justice
SOC 566 Race, Ethnicity, and Justice
BAS 300 Black Experience

CORRECTIONS
SOC 465 Non-Institutional Corrections

COURTS
PHIL 313 Philosophy of Law (4)
PSCI 320 American Judicial Process (4)
PSCI 325 Criminal Justice Policy
PSCI 422 Civil Rights and Civil Liberties
SOC 578 Sociology of Law

JUVENILE JUSTICE
SOC 422 Adolescent Socialization
SOC 456 Juvenile Justice Casework
SOC 459 Juvenile Justice

INTERNSHIP AND DIRECTED STUDY
SOC 496 Criminal Justice Internship
SOC 598 Directed Individual Study

LAW ENFORCEMENT ADMINISTRATION
SOC 467 Police and Community Dynamics
SOC 468 Police and Crime Prevention

SPECIAL LAW ENFORCEMENT CERTIFICATION OPTION
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 Topics in Criminal Investigation (4)
SOC 262 Juvenile Delinquency
SOC 359 Criminal Justice Process
SOC 362 Criminology
SOC 466 Advanced Criminology
SOC 383 Criminal Justice Process
SOC 364 Sociology of Law Enforcement
SOC 365 Correctional Process
SOC 454 Juvenile Delinquency

SOC 562 Victimology
SOC 563 Gender and Justice
SOC 566 Race, Ethnicity, and Justice
BAS 300 Black Experience

MINOR REQUIREMENTS
SOC 200, 210, and 320. Two (6 hours) of the following electives are required: SOC 412, 421, 422, 479, and 520. The student may include any other sociology course to complete the required eighteen (18) hours.

Sociology Courses (SOC)
A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog.

SOC 100 American Society
3 hrs.
An analysis of contemporary American society, including 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.

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, SOS, 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, CRT 225 or CS 105.

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, our 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.
The course aims to develop a theoretical framework for understanding selected social problems in American society in such areas as: intergroup conflict, race, poverty, juvenile delinquency and crime, population changes,
SOC 336 Modern Japanese Society
3 hrs.
An introduction to Japanese society, focusing upon current developments in the process of industrialization and urbanization. Examines the impact of these processes on Japanese population, family life, village organization, urban community, class structure, and personality.

SOC 352 Introduction to Social Gerontology
3 hrs.
An exploration of the social, psychological, economic, and physical aspects of aging. Consideration will be given to institutional programming for older people in the United States and other societies.

SOC 353 The City and Society
3 hrs.
An examination of the city and the process of urbanization from earliest times to the present. Focusing upon the United States, emphasis will be placed on the characteristics, problems, and consequences of urban growth and development.

SOC 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. The uses of institutional placements, intermediate sanctions, and community-based programming to fulfill the formal and informal goals of corrections are critically assessed. Prerequisite: SOC 362.

SOC 373 Sociology of Health and Illness
3 hrs.
Introduction to the concepts of health and illness in our society; ways of measuring disease, the impact of social class, race, religion, and ethnicity on the perception and distribution of 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 375 Sociology of Work
3 hrs.
An introduction to the problems arising from employment, such as worker morale and productivity, and the integration of women, racial and ethnic minorities, and handicapped workers. The course also involves a survey of various attempts at solving these problems from unions and collective bargaining and other forms of worker participation to government manpower programs and other employment policies.

SOC 382 Methods of Sociological Inquiry I
3 hrs.
An introduction to the quantitative and qualitative methods of empirical research in the social sciences. Major topics include the logic of scientific inquiry, ethics, design, measurement, and an introduction to univariate and bivariate descriptive statistics. Computer-assisted projects and exercises are introduced in laboratory sessions. Sociology majors are urged to take this course following SOC 200 and to develop the ability to evaluate research findings in subsequent content courses. Prerequisite: SOC 200 and SOC 182 or Computer Literacy Requirement.

SOC 383 Methods of Sociological Inquiry II
3 hrs.
A further consideration of the quantitative and qualitative methods of empirical research in the social sciences. Topics include experimental and survey designs, utilization of available data, field studies, evaluation procedures, statistical inference, association and non-parametric statistics, and an introduction to multivariate analysis. Computer-assisted projects and exercises are conducted in laboratory sessions. A continuation of SOC 382. Prerequisite: SOC 382.

SOC 390 Marriage and Family Relations
3 hrs.
A sociological analysis of the structural and 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 Adolescent Socialization
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 the 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. Examines causative factors, methods of treatment, and programs of prevention and control are covered. When feasible, students visit community programs. Prerequisite: SOC 200.

SOC 456 Social Stratification
3 hrs.
An analysis of the nature, causes and consequence of class and status differences within societies. Stress is placed upon such concepts as mobility, class, status and differential power. Conflict and functional theories of stratification are treated. This class satisfies the Baccalaureate Writing Requirement for Sociology majors. Prerequisite: SOC 200.

SOC 458 Juvenile Justice Casework
3 hrs.
This course is a seminar/practicum in the area of non-formal treatment of juvenile offenders and their families. The course focuses on the holistic assessment, decision making, discharge and reintroduction of juveniles released to the attention of the court for delinquent behavior. Each student is expected to provide a wide range of casework services for a minimum of one hour per week. These services include home visits, interaction with schools and numerous other community agencies. Prerequisite: SOC 454.

SOC 459 Juvenile Justice
3 hrs.
This course deals with the processing of offenders through the juvenile justice system with concentration on 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 class satisfies the Baccalaureate Writing Requirement for Criminal Justice Majors. Prerequisites: SOC 362, SOC 363, SOC 364, and SOC 365.

SOC 467 The Police and Community Dynamics
3 hrs.
Study of the role of the police in the community by looking at the public's perceptions, knowledge, and expectations, and the police's responsibilities in community relations. This course stresses the practical application of knowledge to contemporary issues facing police such as the use of deadly force, police performance, neighborhood relations, law enforcement, minority relations, victimless crime, and the resolution of police/community differences. Prerequisite: SOC 364.

SOC 468 The Police and Crime Prevention
3 hrs.
This course provides an intensive examination of the important issue of crime prevention. Crime prevention is viewed within the larger political process and is related to the etiology of criminal behavior. The utility of general and specific prevention is discussed, looking at techniques and programs of both the police and community including target hardening and methods of decreasing the opportunity for victimization. The security business and various security techniques will also be analyzed. Prerequisite: SOC 364.

SOC 479 Female/Male Interaction
3 hrs.
Examines the variable of gender as it influences interaction between women and men. Topics include female/male stereotypes, differences in female and non-verbal codes, and female/male interaction on the job. (Cross-listed with COM 479.)

SOC 492 The Family as a Social Institution
3 hrs.
The family viewed in historical and cross-cultural perspectives. A structural-functional analysis of the family institution and the relationship between the social structure of society and the family system. Emphasis is placed on change and comparative analysis. Prerequisite: SOC 200 or equivalent.

SOC 490 Social Context of Sexual Behavior
3 hrs.
This course focuses on a systematic analysis of contemporary sexual codes and behavior in American society. Present-day beliefs and practices are viewed in historical context (especially from 1900 to the present) to gain insight into what is today, with the purpose of projecting what may be in the future. 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.

SOC 495 Special Topics in Sociology or Criminal Justice: Variable Topics
1-3 hrs.
A specialized course dealing, each time it is scheduled, with some particular aspect of sociology or criminal justice not usually included in other course offerings. May be repeated for credit with a different topic. Prerequisite: SOC 200.

SOC 496 Criminal Justice Internship
2-8 hrs.
Opportunity is provided through the Criminal Justice Program for supervised experiences in state and local criminal justice agencies. Approved application is required. Prerequisite: Approved application.

SOC 498 Field Experience
2-8 hrs.
Structured as part of a specific departmental program and identified as such in the printed schedule when offered. Opportunity is provided for supervised experiences in local organizations or activities in such areas as criminal justice, gerontology, and urban studies. Approved application required.

SOC 499 Honors Seminar
2-6 hrs.
Investigation of selected topics in seminar sessions by advanced undergraduates. May be repeated for credit with a different topic.

500-level courses in the Department of Sociology are designed for a graduate student audience. Advanced undergraduates with at least 12 hours of prerequisites and junior class status will be allowed to enroll. Prerequisites must include SOC 200, and/or admission to another related social science discipline, and/or 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.

SOC 500 Computer Application in Social Research
3 hrs.
An introduction to computer applications for graduate students in the social sciences. Since they all have utility in the research process, the full range of applications will be covered, including: word processing, spreadsheets, graphics, data base management, communications, and statistical processing. A hands-on course, it includes individual assignments relating to each of the application areas. Special attention will be paid to the use of SPSS (The Statistical package for the Social Sciences) in the analysis of quantitative data. Several assignments will relate to the use of this software package. Primarily for graduate students in the social and behavioral sciences with no special mathematical or computer experience. Undergraduates admitted only with the permission of instructor.

SOC 501 Social Systems Theory and Analysis
3 hrs.
An investigation and critique of social systems theory, general systems analysis, and specific systems analysis techniques which have been used in social organizations. Each student will be required to conduct a systems analysis during the course. Prerequisite: SOC 200.

SOC 510 Studies in Social Problems: Variable Topics
3 hrs.
An examination of a selected area of concern in social problems not intensively covered in other courses. The focus of the course will be substantive, as well as theoretical and methodological. Topics may include such areas as poverty, mental illness, narcotics addiction, alcoholism, aging, and international tensions. May be repeated for credit with a different topic. Prerequisite: SOC 200 or 210.

SOC 515 Sociology of Mental Disorder
3 hrs.
This course will be concerned with examining the historical evolution and contemporary meaning of concepts of mental health and mental disorder. The course will also consider the amount and kind of mental disorder in society, the structure of the mental health care delivery system, the nature of help-seeking for mental disorder, and sociological analysis of psychotherapy. Prerequisite: SOC 200.

SOC 520 Studies in Social Psychology: Variable Topics
3 hrs.
Further analysis of selected topics in social psychology not intensively covered in other courses. Specific topic to be announced in the course title when scheduled. May be repeated for credit with a different topic. Prerequisite: SOC 320.

SOC 531 Studies in Social Change: Designated Areas
3 hrs.
Analysis of social change in specific geographic or national areas designated in the course title as scheduled. Change is
The function of the professional Haworth College of Business is to prepare capable men and women for responsible positions in business, industry, and public service. Three major areas of education are involved in the development process. They are:

1. A foundation of liberal arts and sciences in full recognition that as a future leader in the business and industrial world, the student will need a solid understanding of his/her relationships to social, economic, political, and cultural trends.

2. The presentation of a core curriculum that contemplates a thorough grounding in the fundamentals through which our free enterprise economic system operates. These fundamentals are met through business core subjects such as accounting, statistics, law, finance, marketing, management, and communications.

3. An opportunity for specialization in various aspects of business activity.

Continuing opportunities are made available to resident students to participate in campus meetings with business, industrial, and public service leaders, as well as outstanding professionals from various disciplines. In addition, business firm visitations, as well as business internships, give ample opportunity for the student to relate to his/her future role.

Western’s Placement Office is visited by the major firms that are engaged in recruiting business, industry, and public service. Three business firm visitations, as well as business internships, give ample opportunity for the student to relate to his/her future role.

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II. Professional BBA Curriculum

In order to graduate from the professional BBA curriculum, a student must have a minimum of 122 non-repeated semester hours. In addition to the University requirements of general education, physical education and the first two years of study as outlined in the pre-business curriculum, students must complete the following:

1. Upper Class Requirements:
   A. BIS 142, Informational Writing 3 hrs.
   B. One of the following: 3 hrs.
      PSY 100, General Psychology; PSY 344, Organizational Psychology; SOC 200, Principles of Sociology
   C. MATH 116, 122 or 200 3 hrs.
   D. BIS 102, Intro. to Information Processing 3 hrs.
   E. ECON 201 and 202, Principles of Economics 6 hrs.
   F. ACY 210 and 211, Principles of Accounting 6 hrs.
   G. MATH 216, Business Statistics 3 hrs.

2. Additional hours will be taken in the following areas during the 60 semester hours:
   A. General Education Distribution Program: Area I Humanities and Fine Arts, 6 hours; Area II Natural Science, 3 hours
   B. Physical Education, 2 hours
   C. Non-business electives, 22 hours

After completion of not less than 45 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 the first semester at WMU. Admission of transfer students from accredited two- and four-year institutions will be considered on an individual basis. The same criteria for admission listed above will apply.

Transfer work must be credited to the same areas listed above.

Students not meeting admission requirements will be informed of steps they can take to earn admission. Admission of students on a probationary basis to the professional business administration curriculum will be considered on an individual basis and include an examination of ACT test results in addition to a personal interview.

All students will receive academic advising from the Haworth College of Business during their first two years on an appointment basis. After admission to the Haworth College, students will be assigned to a specific advisor in the Academic Advising Office. After a choice of major has been made, students will also be assigned an advisor in that particular area.

Students following non-business curricula within the University beyond their sophomore year must realize that they could have difficulty graduating with a BBA degree in a four-year span.

Baccalaureate Writing Requirement

Students who have chosen to major in any area of business will satisfy the Baccalaureate Writing Requirement by successfully completing BIS 340 Principles of Business Communication.

Advising

For questions regarding BBA curriculum requirements and transfer credit equivalencies, contact the Haworth College of Business Advising Office.

Special Notes

1. A further requirement is that a minimum of 40 percent of the coursework must be taken from areas other than business and upper division economics.
2. The last 30 hours of work for those in the B.B.A. curriculum must be taken on campus. Exceptions may be granted only by approval of the department head and the Dean of the Haworth College of Business. CLEP examinations may not be used to fulfill the final 30-hour requirement.
3. Students at two-year community colleges who plan to continue at WMU are urged to take courses equivalent to the ones listed in the pre-business curriculum, as this will facilitate entry into the upper level program of the college. Community college students should also be aware of coursework acceptable by transfer on the basis of the university’s MACRAO agreements and acceptable validation procedures.
4. Regarding the Mathematics 116 requirement, a 3-hour college algebra course based on a prerequisite of three years of college preparatory mathematics is acceptable as a transfer course.
5. With departmental approval, transfer courses from four-year schools (and appropriate lower division courses from community colleges) may be included in majors and minors. However, a minimum of 12 semester hours for a major and 9 for a minor must be taken at WMU.
6. To declare a minor in any business area, the student must meet with a College of Business advisor. The requirements for declaration of a minor are:
   a. Junior status (56 completed hours)
   b. A 2.5 overall grade point average

Accountancy (ACY)

MAJOR REQUIREMENTS

The accountancy program has a core of courses to be taken by all majors. The core consists of the following required courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ACTY 311</td>
<td>Financial Accounting</td>
<td>6</td>
</tr>
<tr>
<td>ACTY 313</td>
<td>Accounting Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 322</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 324</td>
<td>Income Tax Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 516</td>
<td>Auditing</td>
<td>3</td>
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</tbody>
</table>

The additional courses to complete the accountancy major are to be selected from options 1 through 3 described below.

Courses may be selected as the student chooses within the guidelines of the University and the Haworth College of Business, but a student must complete the requirements for an accountancy major by selecting from only one of the options listed below.

Each option requires a minimum of 33 credit hours. A student meeting the requirements with less than 33 credit hours should select from the following courses to reach that minimum:

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<tr>
<td>ACTY 511</td>
<td>Advanced Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 513</td>
<td>Advanced Accounting Systems</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 514</td>
<td>Institutional Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 518</td>
<td>Accounting Theory and Problems</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 522</td>
<td>Cost Accounting—Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 524</td>
<td>Studies in Tax Accounting</td>
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Option 1 (33 hours)

A student may take the following courses to complete the accountancy major.

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<tbody>
<tr>
<td>ACTY 464</td>
<td>Production and Control</td>
<td>3</td>
</tr>
<tr>
<td>IE 326</td>
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Option 2 (33 hours)

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</tbody>
</table>

All of the prerequisites for IE 326 and IE 328 must be met.
A General Options Minor in Computer Science

Science sequences listed below:

1. ADMINISTRATIVE SYSTEMS (BIS)
   BIS 260 Microcomputer Business Applications 3
   BIS 386 Advanced Office Systems 3
   BIS 387 Records Management 3
   Plus 6 hours, as advised, from 6
   BIS 360 Information Systems Analysis and Design 3
   BIS 456 Office Management 3

   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 9 additional accountancy hours for which the student meets the prerequisites to be selected with the student’s professional objectives in mind. The remaining 6 hours must be selected from the following courses: FCL 320 and 380, MGMT 300, and MKTG 370.

   Qualifications for Accounting Certification Exams: A graduate from the Haworth College of Business with a major in Accountancy will be qualified to take many of the professional certification exams. Since the qualifying rules differ by state, and are subject to change, the student is responsible for determining if additional criteria need to be met for a specific exam or state.

   Advisors: Report to the Department of Accountancy, 3190 Schneider Hall for assignment to an advisor.

   Transfer Credits: Up to 6 hours of elementary accounting may be accepted from other than a four-year accredited school. All majors must take a minimum of 12 hours of accounting courses at WMU.

2. BUSINESS COMMUNICATION (BCM)
   BIS 340 Principles of Business Communication 3
   BIS 342 Organizational Communication 3
   BIS 343 Report Writing 3
   BIS 344 Business Communication Problems and Practices 3
   BIS 442 Seminar in Business Communication 3
   BIS 454 Intercultural Business Communication 3
   BIS 480 Business Communication Technology 3
   Plus 6 hours, as advised, from 9
   BIS 360 Information Systems Analysis and Design 3
   BIS 386 Advanced Office Systems 3
   BIS 400 Topics in Business Communication 3
   BIS 410 Internship in Business Communication 3
   BIS 456 Office Management 3
   BIS 483 Business Publications and Presentations 3
   BIS 596 Independent Study in Business Communication 3
   BIS 598 Independent Readings in Business Communication 3
   Plus 9 hours, as advised from 9

   Minor Requirements (21 hours)
   BIS 340 Principles of Business Communication 3
   BIS 342 Organizational Communication 3
   BIS 343 Report Writing 3
   BIS 442 Seminar in Business Communication 3
   BIS 454 Intercultural Business Communication 3
   BIS 480 Business Communication Technology 3
   BIS 490 Topics in Business Communication 3
   BIS 410 Internship in Business Communication 3
   BIS 483 Business Publications and Presentations 3
   BIS 596 Independent Study in Business Communication 3
   BIS 598 Independent Readings in Business Communication 3
   May include 6 additional credit hours selected from among the following (non-business majors must include ACTY 210):

3. COMPUTER INFORMATION SYSTEMS (CIS)
   BIS 360 Information Systems Analysis and Design 3
   BIS 456 Office Management 3
   BIS 484 Micrographics and Reprographics 3
   BIS 486 Corporate Records Centers 3
   Plus 9 hours, as advised, from 9
   BIS 261 COBOL Programming 3
   BIS 264 Report Program Generator 3

   Minor Requirements (30 hours)
   BIS 360 Information Systems Analysis and Design 3
   BIS 362 Advanced COBOL 3
   BIS 462 Applied CIS Development Project 3
   CS 111 Computer Programming I 3
   CS 443 Data Base Management Systems 3
   Plus 9 hours, as advised, from:

   Finance and Commercial Law (FCL)
   The Finance and Commercial Law Department offers majors in finance, general business, insurance, and real estate and minors in finance, general business, insurance, and real estate.

1. FINANCE AND COMMERCIAL LAW MAJORS

A: Finance Major (FIN)
   Advisors: Report to department office, 3290 Schneider Hall, for assignment to an advisor.

B: General Business Major (GBS)
   Advisors: Report to department office, 3290 Schneider Hall, for assignment to an advisor.

C: Insurance Major (INS)
   Advisors: Kennedy

In addition to completion of the curriculum requirements for all students pursuing the Bachelor of Business Administration degree, for which FCL 320 is required, all insurance majors must complete FCL 342, as their upper class advanced quantitative course plus FCL 310 and FCL 351. The remaining fifteen hours shall be selected in consultation with an advisor from the finance faculty.

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.

In addition to the upper class requirements of MGMT 300 and 499, FCL 320 and 380, and MKTG 370 and an upper level quantitative class, a student may elect a logical sequence of seven advanced business courses at or above the 500 level. At least three of the seven courses must be from the Finance and Commercial Law Department and no more than three may be from any one area of study. A student majoring in general business may not minor in general business.

In addition to completion of the curriculum requirements for all students pursuing the Bachelor of Business Administration degree, for which FCL 320 is required, all insurance majors must complete FCL 342, as their upper class advanced quantitative course plus FCL 320 and FCL 361. The additional nine hours are to be selected in consultation with an advisor.
D: Real Estate Major (REA)
Advisor: Scheu

In addition to the completion of the curriculum requirements for all students pursuing the Bachelor of Business Administration degree, for which FCL 320 is required, all real estate majors must complete FCL 342, as their upper class accounting course plus 21 hours of finance and commercial law courses including:

FCL 330 Real Estate Fundamentals 3
FCL 331 Real Estate Finance 3
FCL 332 Real Estate Investments 3

The remaining 12 hours are to be at the 300 level or above and are to be selected, in consultation with an advisor, from an appropriate curriculum, such as courses in real estate, finance, insurance, and commercial law.

2. FINANCE AND COMMERCIAL LAW

A: Finance Minor (FIN)
Advisors: Finance Area Faculty

Students wishing to minor in finance are required to take 21 hours. Of the 21 hours, 12 hours are required (3 in accounting and 9 in finance) and 9 are elective finance courses as shown below:

ACTY 210 Principles of Accounting 3
FCL 310 Introduction to Financial Markets 3
FCL 320 Business Finance 3
FCL 361 Investment Analysis 3

Nine (9) additional hours from available finance courses at the 300-level or above must be selected in consultation with the advisor and with the student's professional objectives in mind.

B: General Business Minor (GBS)
Advisors: Finance and Commercial Law Faculty

With the exception of general business majors, any student who has completed the BBA curriculum requirements will automatically receive a general business minor. Students pursing a degree other than a BBA degree may minor in general business by completing the following 21 hours or substitute business courses approved by a general business advisor (3290 Schneider Hall).

ACTY 210 and 211 Principles of Accounting 6
BIS 340 Business Communications 3
FCL 320 Business Finance 3
FCL 380 Legal Environment 3
MGMT 300 Fundamentals of Management 3
MKTG 370 Marketing 3

C: Insurance Minor (INS)
Advisor: Kennedy

Students wishing to minor in insurance are required to take 21 hours. Fifteen of these hours are in Finance and Commercial Law courses and six are from other disciplines in the Haworth College of Business. The real estate minor consists of:

Six (6) hours from the following Haworth College of Business courses:

ACTY 210 Principles of Accounting 3
MKTG 270 Salesmanship 3
MKTG 370 Marketing 3

Six (6) hours in required FCL courses:

FCL 320 Business Finance 3
FCL 330 Real Estate Fundamentals 3

Nine (9) hours in elective Real Estate courses from the Finance and Commercial Law Department.

FCL 331 Real Estate Finance 3
FCL 332 Real Estate Investments 3
FCL 437 Real Estate Management 3

Management (MGMT)
Advisors: Report to the Department of Management, 3390 Schneider Hall, for assignment to an advisor.

MAJOR IN MANAGEMENT (24 hours)
A major in management consists of the three courses listed below plus 15 hours of additional work. 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 management major, the student must complete MGMT 314 Small Business Ownership and Management, MGMT 414 Entrepreneurship, MGMT 352 Personnel Management, and two electives from management courses approved by a departmental advisor.

Concentration in Human Resource Management
In addition to the requirements of the management major, the student must complete MGMT 352 Personnel Management, MGMT 355 Compensation Administration, MGMT 453 Organizational Behavior, MGMT 454 Managing Employee Relations, and one elective from management courses approved by a departmental advisor.

Concentration in Production/Operations Management

MGMT 300 Fundamentals of Management 3
MGMT 460 Decision Analysis 3
MGMT 463 Production and Operations Management 3
MGMT 464 Production Management and Control 3
MGMT 470 Production/Operations Simulation 3
MGMT 480 Materials Management Strategy 3

Two electives from the Management Department approved by a Departmental advisor 6

Two additional courses selected from among the following:

ACTY 210 Principles of Accounting (required of Non-BBA majors) 3
FCL 320 Business Finance 3
FCL 340 Legal Environment 3
MKTG 250 Marketing 3

Marketing (MKTG)

The Marketing Department offers five major areas of concentration as shown below. Course prerequisites are listed after the course descriptions. Any deviations from the course requirements must have written approval of the department chairperson.

1. ADVERTISING AND PROMOTION (ADV)
27 hours
Advisor: Report to Department of Marketing, 3210 Schneider Hall, for assignment to an advisor.

Required Courses (18 hours):

MKTG 250 Marketing Principles 3
MKTG 371 Marketing Research 3
MKTG 374 Advertising 3
MKTG 471 Quantitative Marketing Applications 3
MKTG 477 Consumer Behavior 3
MKTG 486 Marketing Strategy 3

Select three courses (9 hours) from the following:

MKTG 360 Professional Selling 3
MKTG 377 Sales Promotion 3
MKTG 472 Media Planning 3
MKTG 473 Direct Marketing Strategy 3
MKTG 474 Advertising Copy and Layout 3
MKTG 475 International Marketing 3
MKTG 487 Marketing Ethics 3
2. FOOD MARKETING (FMK)
29-31 hours
Advisor: Report to Department of Marketing, 3210 Schneider Hall, for assignment to an advisor.
Required courses (26-28 hours):
- MKTG 250 Marketing Principles 3
- MKTG 250 Food Marketing Systems 3
- MKTG 371 Marketing Research 3
- MKTG 391 Food Merchandising 3
- MKTG 397 Food Marketing Field Experience 2-4
- MKTG 471 Quantitative Marketing Applications 3
- MKTG 484 Business Logistics 3
- MKTG 487 Marketing Ethics 3
- MKTG 477 Consumer Behavior 3
- MKTG 478 Special Topics in Marketing 3
- MKTG 480 Franchising 3
- MKTG 494 Business Logistics 3
- MKTG 487 Marketing Ethics 3

5. RETAILING (RET)
27 hours
Advisor: Report to Department of Marketing, 3210 Schneider Hall, for assignment to an advisor.
Required courses (18 hours):
- MKTG 250 Marketing Principles 3
- MKTG 371 Marketing Research 3
- MKTG 375 Principles of Retailing 3
- MKTG 471 Quantitative Marketing Applications 3
- MKTG 486 Marketing Strategy 3
- MKTG 492 Marketing Information Technology 3
- MKTG 473 Direct Marketing Strategy 3
- MKTG 371 Marketing Research 3
- MKTG 374 Advertising 3
- MKTG 377 Sales Promotion 3
- MKTG 484 Business Logistics 3

3. INDUSTRIAL MARKETING (IDM)
27 hours
Advisor: Report to Department of Marketing, 3210 Schneider Hall, for assignment to an advisor.
Required courses (24 hours):
- MKTG 250 Marketing Principles 3
- MKTG 360 Professional Selling 3
- MKTG 371 Marketing Research 3
- MKTG 372 Purchasing Management 3
- MKTG 476 Retail Management 3
- MKTG 477 Consumer Behavior 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 selecting a “related major” option must meet the minimum requirement of 40 percent of their coursework in business and upper division economics courses, in addition to the 40 percent in non-business requirement.

1. ECONOMICS (ECO)
Advisor: Caruso
Elet in conjunction with an Economics advisor an additional 21 semester hours of advanced courses (300-500 level) to include ECNS 402, 403, 406, and 409

2. INTEGRATED SUPPLY MANAGEMENT (ISM)
37 hours
In addition to the curriculum requirements for all student pursuing the Bachelor of Business Administration Degree, complete the following:

ECE 101 Fundamentals of Electronics and Machines 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 3
MGMT 464 Production Management and Control 3
MGMT 480 Materials Management Strategies 3
MGMT 481 Integrated Materials Systems 3
MKTG 372 Purchasing Management 3
MKTG 484 Business Logistics 3
MKTG 485 Materials Systems Analysis 3

3. PUBLIC ADMINISTRATION (PAB)
Advisor: Gossman, McCarly
Major Requirements: 24 hours
In addition to the curriculum requirements for all students pursuing the Bachelor of Business Administration Degree, complete 24 hours from the following courses:

Required Course—Select one of the following courses:
FCL 380 Legal Environment 3
FCL 320 Business Finance 3

Eletive Courses—Select seven (7) courses (5 hours) from the following list of courses:
ACTY 322 Managerial Accounting 3
ACTY 324 Managerial Accounting 3
ACTY 514 Institutional Accounting 3
BIS 343 Report Writing 3
BIS 358 Records Management 3
BIS 466 Office Management 3
FCL 330 Real Estate Fundamentals 3
FCL 331 Real Estate Finance 3
FCL 482 Management and Labor Relations Law 3
FCL 483 Real Estate Law 3
FCL 485 Government Regulation of Business 3
MGMT 352 Personnel Management 3
MKTG 372 Purchasing Management 3
Minor Requirements: 21 hours

PSCI 200 National Government ......................... 3
PSCI 202 State and Local Government .................. 4
PSCI 330 Introduction to Public Administration .......... 3
PSCI 526 Administrative Law and Public Relations ........ 3
PSCI 533 Public Personnel Administration ............... 3
PSCI 535 The Politics of Governmental Budget and Finance .... 3

Plus one of the following:
PSCI 404 Making of Public Policy in U.S. ................ 3
PSCI 531 Administration in Local and National Governments .... 3
PSCI 534 Administrative Theory .......................... 3
PSCI 591 Statistics for Political Science ................... 3

4. STATISTICS (STB) 40-41 hours
Advisor: Sievers

The following courses from the Department of Mathematics plus one business elective comprise the major in statistics. All students electing the statistics option must make sure they meet the minimum requirement of 40 percent of their coursework in business and upper division economics courses.

CS 306 Introductory Programming/FORTRAN ............... 2
MATH 122 Calculus I ................................... 4
MATH 123 Calculus II ................................... 4
MATH 230 Elementary Linear Algebra ..................... 4
MATH 272 Vector and Multivariate Calculus ............... 4
MATH 362 Probability ................................... 3
MATH 364 Statistical Methods ............................. 4
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

Elective—3 hours (one of the following)
IME 328 Quality Assurance and Control ............... or
IME 318 Statistical Quality Control .................... 3
FCL 486 Marketing and Sales Law ..................... 3
MKTG 485 Materials Systems Analysis .................. 3
MGMT 480 Materials Management ........................ 3
MGMT 481 Integrated Materials Systems ................. 3

2. INTERNATIONAL BUSINESS MINOR (INT) 21 hours

Two courses from the following list .................. 6
FCL 320 Business Finance (Prereq. MATH 216 and ACTY 210)
FCL 380 Legal Environment
BIS 340 Principles of Business Communications (Prereq. BIS 142)

Four courses from the following list .................. 12
FCL 442 International Finance (Prereq. FCL 320)
FCL 484 International Business Law (Prereq. FCL 380)
FCL 494 International Business Seminar
MKTG 410 Multinational Management
MKTG 475 International Marketing (Prereq. MKTG 250)
ECON 380 International Economics (Prereq. ECON 201-202)

One course from one of the following areas chosen in consultation with minor advisor .................. 3
1. Foreign language course: must be at second semester of first year or higher
2. Cultural and regional study: available only for students otherwise meeting foreign language requirement
3. Skill specialization: available only for students otherwise meeting foreign language and cultural/regional area study requirement

Related Minors

1. INTEGRATED SUPPLY MANAGEMENT 15 hours
This program was originally developed in 1989 to integrate business and technological concepts for a successful career in supply management. The program offers a major for students in the Haworth College of Business and a minor geared toward students in the College of Engineering and Applied Sciences.

Core Classes—9 hours (take all of the following)
IME 326 Operations Planning and Control
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
MGMT 480 Materials Management Strategy
MGMT 481 Integrated Materials Systems

Haworth College of Business Courses (BUS)

BUS 170 Introduction to Business 3 hrs.
This course will provide students with an introduction to business and the business environment, both domestic and international. Students will study various business functions and how they are interrelated. Students will gain an understanding of how the various environments (political, legal, economic, and cultural) influence and are influenced by business. Course may not be used for business minor or major credit. Students in the BAD curriculum may not enroll in this course.

BUS 220 Introduction to Global Business 3 hrs.
An introduction to global business and its complex environment. Factors having an impact on global business including cultural differences, management theories, marketing activities and various legal and financial institutions are examined. Dominant international business policies will also be addressed. Prerequisite: Freshman/sophomore standing only. Not to be counted toward major/minor in BBA.

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 504 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 independent of seminars planned by the Haworth College of Business.
ACCOUNTANCY
Richard L. Hodges, Chair
Alan I. Blankley
Hans J. Dykhxhoom
J. Patrick Forrest
Debra A. Bullis Fransson
Charles E. Hines, Jr.
Jerry G. Kreuze
Sheldon A. Langsam
William C. Morris
Gale E. Newell
David Rozelle
Jack M. Ruhl
FW Schaeberle
Kathleen E. Sinning
Roger Y. W. Tang
William R. Welke

The Department of Accountancy prepares its majors for positions as accountants in industrial, governmental, and public accounting enterprises. Accountancy majors must complete the business administration curriculum.

Accountancy Courses (ACTY)

ACTY 201 Accounting Concepts and Applications
3 hrs.
A study of the fundamental concepts and applications of accounting. Especially designed for the non-business student. This course does not serve as a prerequisite for any other accounting course and cannot be used for a major or minor in business. Not open to students with credit in accounting.

ACTY 210 Principles of Accounting
3 hrs.
An introductory course in accounting which includes the recording and reporting of business transactions, and the measuring, planning and controlling of business income, assets and equities.

ACTY 211 Principles of Accounting
3 hrs.
A continuation of course 210 with emphasis on managerial/cost accounting concepts. Prerequisite: 210.

ACTY 310 Financial Accounting I
3 hrs.
This course reviews the accounting cycle, related accounting records and theory. Accounting principles and reporting requirements for current assets, plant and equipment, intangibles, and other assets are also studied. Prerequisite: 211.

ACTY 311 Financial Accounting II
3 hrs.
This course is a continuation of Accounting 310. Accounting principles and reporting requirements for liabilities, long-term investments, and stockholders' equity are studied. Other topics generally included are the study of the Statement of Changes in Financial Position, the recording and reporting of accounting changes, the analysis of financial statements, and the study of statements adjusted for inflation. Prerequisite: 310.

ACTY 313 Accounting Information Systems
3 hrs.
A study of concepts, organization, technology, and controls of an accounting information system. Includes a study of specific application (payroll, accounts receivable, etc.), with particular emphasis on data input, processing, and output utilizing the computer. Prerequisites: ACTY 211, 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: 211.

ACTY 324 Income Tax Accounting
3 hrs.
A study of the federal tax laws as they apply to individuals, partnerships, and corporations. While the course is primarily organized around the individual taxpayer, particular emphasis is given to the concepts that apply to all reporting entities. Prerequisite: 211.

ACTY 410 Internship in Accounting
1-4 hrs.
Under the direction of a faculty coordinator, students obtain full-time accounting related employment experience. Participation is limited to available internships and competitive selection by the faculty coordinator and potential employers. Students are required to write a final report. Each employer will provide an evaluation of the student. 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.

ACTY 411 Advanced Accounting
3 hrs.
The study of entities and special transactions not covered in Financial Accounting I and II. Particular emphasis is given to partnership equity accounting, fund accounting, accounting by agencies and branches, business combinations, reporting by parent-subsidiary consolidated entities (including foreign subsidiaries). Prerequisite: ACTY 311.

ACTY 414 Institutional Accounting
3 hrs.
A comprehensive study of the recording of transactions by government units and the preparation of financial statements by fund entities. City government is the basic unit of study; however, school districts, universities, and hospitals are given brief coverage to illustrate the similarity in accounting for all not-for-profit entities. Prerequisite: ACTY 211.

ACTY 416 Auditing
3 hrs.
The theory and practice of auditing business enterprises and government agencies. Topics include a review of professional pronouncements, internal control concepts, ethics, and a discussion of audit objectives. Prerequisites: ACTY 311, ACTY 313 or their equivalents.

ACTY 518 Accounting Theory and Practice
3 hrs.
A study of financial accounting theory and practice. The course is organized around pronouncements of the Financial Accounting Standards Board and other authoritative bodies. Case studies are used to illustrate application of the concepts of such pronouncements. Prerequisite: Senior standing and accounting major.

ACTY 522 Cost Accounting—Theory and Practice
3 hrs.
A study of the accounting methodology and concepts that have been developed to account for both product and period costs of a business enterprise. Includes product costing for job order and continuous process situations with related systems concepts, cost allocations among departments of an enterprise, joint and by-product costing, and standard costing as it relates to inventory pricing. Prerequisite: ACTY 322.

ACTY 423 Studies in Tax Accounting
3 hrs.
Special studies related to tax problems of individuals, partnerships, and corporations. Emphasis is on federal taxation of corporations, trusts and estates. Prerequisite: ACTY 324.

Open to Underclass and Graduate Students

ACTY 511 Advanced Accounting
3 hrs.
The study of entities and special transactions not covered in Financial Accounting I and II. Particular emphasis is given to partnership equity accounting, fund accounting, accounting by agencies and branches, business combinations, reporting by parent-subsidiary consolidated entities (including foreign subsidiaries). Prerequisite: ACTY 311 or equivalent.

ACTY 513 Advanced Accounting Systems
3 hrs.
Special studies related to computerized accounting packages currently used in practice. A case-study approach involving typical business transactions, internal accounting control review, flowcharting, financial statement preparation, special reports, and decision making processes using specific software packages. Prerequisite: ACTY 416.

ACTY 514 Institutional Accounting
3 hrs.
A comprehensive study of the recording of transactions by government units and the preparation of financial statements by fund entities. City government is the basic unit of study; however, school districts, universities, and hospitals are given brief coverage to illustrate the similarity in accounting for all not-for-profit entities. Prerequisite: 211 or written consent of instructor.

ACTY 516 Auditing
3 hrs.
The theory and practice of auditing business enterprises and government agencies. Topics include a review of professional pronouncements, internal control concepts, ethics, and a discussion of audit objectives. Prerequisites: ACTY 311, ACTY 313 or their equivalents.

ACTY 518 Accounting Theory and Problems
3 hrs.
A study of financial accounting theory and practice. The course is organized around pronouncements of the Financial Accounting Standards Board and other authoritative bodies. Case studies are used to illustrate application of the concepts of such pronouncements. Prerequisite: Senior standing and accounting major.

ACTY 522 Cost Accounting—Theory and Practice
3 hrs.
A study of the accounting methodology and concepts that have been developed to account for both product and period costs of a business enterprise. Includes product costing for job order and continuous process situations with related systems concepts, cost allocations among departments of an enterprise, joint and by-product costing, and standard costing as it relates to inventory pricing. Prerequisite: 322.
ACTY 524 Studies in Tax Accounting
3 hrs.
Special studies related to tax problems of individuals, partnerships, and corporations. Emphasis is on federal taxation of corporations, trusts and estates. Prerequisite: ACTY 304 or equivalent.

ACTY 598 Readings in Accounting
1-4 hrs.
Directed individual study of topics not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.

BUSINESS INFORMATION SYSTEMS

Joel P. Bowman, Chair
Robert A. Allen
Kuniakose Athetaffily
Earl E. Halvus
Darrell G. Jones
Marcia Mascolini
L. Michael Moskovis
Pamela S. Rooney
Hung-Lian Tang
Andrew S. Targowski
Judy A. Yeager
Bee K. Yew

The Department of Business Information Systems offers three undergraduate programs of study: (1) Administrative Systems (ADS), (2) Business Communication (BCM), and (3) Computer Information Systems (CIS).

Business Information Systems Courses (BIS)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

BIS 100 Introduction to Business Writing
3 hrs.
A course dealing with those areas of written communication necessary for the development of basic business writing skills. Designed as a foundation for subsequent business writing/communication courses. Credit for this course will not apply toward the number of credits needed for graduation. (Credit/No Credit)

BIS 102 Introduction to Information Processing
3 hrs.
An introductory survey of the needs for and roles of computer information systems within business organizations which will prepare students to be relatively sophisticated computer users. Emphasis is on (1) management information systems (MIS) including a focus on information management and information processing, (2) microcomputer applications, and (3) the development of elementary level programs in BASIC language. A student may not receive credit for both BIS 102 and CS 105.

BIS 142 Informational Writing
3 hrs.
Development of the basic composition skills required of the competent writer in business and professions. Through continuing directed practice in writing, students develop competence in the organization and presentation of facts and information in writing. This course fulfills the University college-level writing requirement.

BIS 182 Keyboarding
2 hrs.
To provide basic touch keyboarding skill to input to typewriters and computers efficiently. To develop speed and accuracy on the alphabetic, numeric, and symbol keys.

BIS 183 Formatting
2 hrs.
An opportunity to build keyboarding speed and to learn to format common business information such as letters, memos, reports, and tabular material. Prerequisite: BIS 182.

BIS 242 Organizational Communication
3 hrs.
A study of communication in modern organizations and the application of communication theory to information systems and current business practices. Group decision-making is emphasized.

BIS 260 Microcomputer Business Applications
3 hrs.
A study of the role of microcomputers in business. Through hands-on exposure to small systems, students learn about microcomputer hardware configurations, business software application packages, and advanced BASIC programming techniques, especially file creation and manipulation, applicable to micros. Prerequisite: BIS 102 or equivalent.

BIS 261 COBOL Programming
3 hrs.
Computer programming in the most widely used language for business type application. Programming will be done in timesharing and/or batch sequential mode. Current computer developments are discussed. Prerequisite: BIS 102 or equivalent.

BIS 264 Report Program Generator
3 hrs.
Study of feasibility and applicability of RPG (Report Program Generator) computer programming to business problems. Included are the design, coding, compiling and execution of programs in RPG, RPG II, and RPG III. Prerequisite: BIS 102.

BIS 340 Principles of Business Communication
3 hrs.
This course focuses on written communication in modern organizations. Students will apply communication strategies in formulating objectives, structuring messages, and choosing appropriate communication channels to solve business problems. Assignments will center on writing appropriate to the business disciplines. Prerequisite: BIS 142 or equivalent, junior standing.

BIS 343 Report Writing
3 hrs.
Intensive discussion and practice of the commonly used report-writing techniques. The study includes various formats and graphics of reports. In addition to writing several brief reports, students prepare a complete research report, give oral reports. Prerequisite: BIS 340.

BIS 344 Business Communication Problems' and Practices
3 hrs.
An in-depth analysis of communication problems and practices as they occur in modern business. Special emphasis is given to development of business writing skills as they apply to decision making, report writing, and business communication systems. Prerequisite: BIS 340.

BIS 350 Management Information Systems
3 hrs.
Provides an understanding of and experience in the integration of the computer and information systems into the management process. Incorporates the tools, techniques, and applications for managing and using computerized information systems in business environments for improved productivity. Prerequisites: BIS 102 and MGMT 300.

BIS 360 Information Systems Analysis and Design
3 hrs.
A study of the total systems analysis and design process including data collection, problem definition, systems analysis and design, systems implementation, and application of the tools and techniques of the systems professional. Prerequisite: BIS 102 or equivalent.

BIS 362 Advanced COBOL
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 368 Records Management
3 hrs.
The study of efficient methods, procedures, and systems for processing, controlling, and disposing of organizational records. Includes records inventory and classification, information retention and retrieval, and the administration of office information systems.

BIS 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 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 442 Senior Seminar in Business Communication
3 hrs.
The senior seminar in business communication is a capstone course designed to teach participants how to analyze communication in modern business organizations. Focus of the course will be on evaluating and improving organizational communication. Seminar emphasis will vary depending upon semester and instructor.

BIS 454 Intercultural Business Communication
3 hrs.
Intercultural Business Communication is designed to develop the effectiveness of students' communication skills with culturally diverse audiences, both at home and abroad. Prerequisite: BIS 340.

BIS 456 Office Management
3 hrs.
Procedures of office administration with attention to supervisory patterns in development, appraisal, and management of human resources.

BIS 458 Topics in Administrative Systems
3 hrs.
Includes an intensive study of a selected topic in administrative systems such as communication audits, consumer relations, office systems, work measurement and simplification, forms control and design, and others. The topic will be announced in advance. May be repeated for credit.

BIS 462 Applied CIS Development Project
3 hrs.
Application of computer programming and system development concepts, principles, and practices to a comprehensive system development project. A team approach is used to analyze, design, and document realistic systems of moderate complexity. Use of project management methods, project scheduling and control techniques, formal presentations, and group dynamics in the solution of information system problems.

BIS 464 Decision Support and Expert 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 managerial decision making. Students apply these concepts by developing actual decision support systems/expert systems as part of their course work. Prerequisite: BIS 362.

BIS 465 Trends in Information Systems
3 hrs.
This course is designed to familiarize students with "leading edge" issues of computer information systems. Because the computer field continues to evolve at a rapid rate, the specific content of the course will change from year to year. Prerequisite: BIS 350.

BIS 466 Business Data Networks
3 hrs.
The features of centralized, decentralized, and distributed systems will be examined. The impact of distributed systems on the business enterprise will be exposed via the medium of a seminar. Technology implications of computer hardware, software, and communications are discussed as they relate to the design, development, and implementation of distributed data processing systems. Prerequisite: BIS 360.

BIS 474 Information Resource Management
3 hrs.
This seminar course provides an overview of the management of information systems resources. The student will gain an insight and understanding of the subject through study of the fundamentals of organizing, planning, controlling, and other significant management tasks that relate to management of information resources. Prerequisite: BIS 462.

BIS 480 Business Communication Technology
3 hrs.
Business Communication Technology reviews the changes in communication strategies and procedures being brought about by modern technology, especially the computer. The course provides a theoretical framework for understanding the application of communication technology in modern business organizations and affords hands-on experience with word processing, electronic mail, electronic conferencing systems, electronic databases, computer graphics, FAX, voice mail, and desktop publishing procedures. Prerequisites: BIS 102 or CS 105; and a 300-level or 400-level writing class.

BIS 483 Business Publications and Presentations
3 hrs.
Business Publications and Presentations provides students actual experience in developing numerous types of publications and presentations-from conception through camera-ready production. The course provides a working understanding of the processes involved in determining page layout and design and the psychology used in various components of the document production and presentations. While working on collaborative projects, students will benefit from extensive interaction with community professionals involved in the designing, typesetting, printing, and distributing of business documentation. Hands-on experience is also provided through training in advanced word processing, graphics generation, scanning techniques, file transfers, and page layout techniques. Prerequisites: BIS 102, BIS 340.

BIS 484 Micrographics and Reprographics
3 hrs.
Fundamentals of micrographics and reprographics, including basic components of technology, legal implications, systems applications and trends, feasibility, and industry standards.

BIS 486 Corporate Records Centers
3 hrs.
An examination of commercial and corporate records centers. Includes services, equipment, systems, and technology, addresses functions of planning, staffing, operating, and managing records centers. Prerequisite: BIS 388 or permission.

BIS 555 Topics in Computer Information Systems
3 hrs.
Special topics appropriate to business applications such as data base management systems, structured concepts, networking, programming documentation and efficiency, planning, organizing and directing management information systems. May be repeated for credit.

BIS 560 Office Systems and Procedures
3 hrs.
A study of paperwork systems and procedures. Emphasis is placed on office systems and the techniques of systems development including fact gathering and recording, work analysis, and office work simplification and measurement.

BIS 596 Independent Study
1-4 hrs.
A directed independent project in an area of Administrative Systems, Business Communication, or Computer Information Systems. Prerequisite: Approved application required.

BIS 598 Readings
1-4 hrs.
A series of direct readings in an area of Administrative Systems, Business Communication, or Computer Information Systems. Prerequisite: Approved application required.
FINANCE AND COMMERCIAL LAW

Christopher M. Korth, Chair
Robert Balk
Nicholas C. Batch
David Burnie
James D'Mello
Adrian Edwards
Thomas Gossman
Norman Hawker
A. D. Issa
Robert Jones
Kenneth Kennedy
C. R. Krishna-Swamy
Inayat Mangla
F. William McCarty
Ali Metwalli
Craig Peterson
Ajay Samant
Tim F. Schaeu
Leo Stevenson
Carol VanAuken-Haight

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.  
Provides a basis for understanding the financial management function of the business enterprise. Covers financial principles and techniques essential for planning and controlling profitability and liquidity of assets, planning capital structure and cost of capital, and utilizing financial instruments and institutions for capital raising. Prerequisites: MATH 216 and ACTY 210.

FCL 330 Real Estate Fundamentals
3 hrs.  
Supplies the basis for comprehension of the basic economic characteristics and the organization and techniques used in the real estate business. Treats real estate resources, marketing, financing, valuation, and trends.

FCL 331 Real Estate Finance
3 hrs.  
Considers the field of real estate finance from the viewpoint of sources of funds, various real estate contracts, valuation techniques, appraisals of residential and income properties and the various aspects of risk analysis in real estate. Prerequisite: FCL 330 or consent of instructor.

FCL 332 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 330 or consent of instructor.

FCL 333 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 330 or consent of instructor.

FCL 342 Quantitative Applications in Finance
3 hrs.  
The applications of quantitative analysis to finance. Emphasis will be placed on the techniques available in financial decision making, determination of financial relationships, and financial forecasting. Applications in corporate financial management, investment analysis, and financial institutions. Prerequisite: FCL 330.

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 330 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.

FCL 361 Life and Health Insurance
3 hrs.  
This course combines a discussion of the economic aspects of life and health insurance with basic analysis of life insurance and annuity contracts. It also includes investigation of the major functions, aspects of life and health insurance companies. Prerequisite: FCL 360.

FCL 362 Property and Liability Insurance
3 hrs.  
This course includes analytical study of the major property and liability contracts, together with discussion of the principal functional aspects of property and liability company operations. Prerequisite: FCL 360.

FCL 412 Advanced Financial Markets
3 hrs.  
Further studies of financial markets stressing theories, supporting evidence, and policy implications of selected topics. Research and analytical methods are included in the course content. Prerequisite: FCL 310.

FCL 414 Management of Financial Institutions
3 hrs.  
This course is devoted to in-depth analysis of the operations of selected financial institutions with emphasis on management decision-making processes. Case analysis and analytical problems are included in the course content. Prerequisite: FCL 310.

FCL 425 Asset Management: Theory and Practice
3 hrs.  
An analytical approach to the study of the concepts and theories underlying asset valuation and management. Apart from this theoretical framework, the course includes cases covering financial decision-making processes in the areas of financial analysis and forecasting, asset valuation and working capital management. Prerequisite: FCL 320.

FCL 426 Corporate Financing: Theory and Practice
3 hrs.  
An analytical approach to the study of the concepts and theories underlying the financing decisions of business enterprises. Apart from this 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 430 Mortgage Banking
3 hrs.  
Mortgage lending in the United States with special emphasis on the function, lending policies and operations of mortgage banks. Considers interrelationships of these institutions with savings and loan associations, savings banks, insurance companies, individuals and governmental institutions in providing funds to the primary and secondary mortgage markets. Prerequisites: FCL 310.

FCL 437 Real Estate Management
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 executives. Available only to students majoring or minoring in finance, insurance, or real estate. No more than 3 hrs. can be used as credit toward a major or minor.

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 351.

FCL 462 Group Insurance and Pensions
3 hrs.  
By means of problems and cases this course analyzes in detail the following areas, group life and health insurance, business life and health insurance, insured pension plans and estate and tax planning. Prerequisite: FCL 360.

FCL 463 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 484 Insurance Company Management 3 hrs.
The topics studied by means of cases and problems in this course include multiple-line insurance operations, special problems in functional areas of industry operations and personal and commercial risk surveys and analysis. Prerequisite: FCL 362.

FCL 562 Group Insurance and Pensions 3 hrs.
By means of problems and cases this course analyzes in detail the following areas: group life and health insurance, business life and health insurance, insured pension plans and estate and tax planning. Prerequisite: FCL 361 or consent.

FCL 563 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.

LAW AREA

FCL 380 Legal Environment 3 hrs.
An introduction to the legal environment in society. An examination of the role of law in society, the structure of the American legal system and the basic legal principles governing individual conduct.

FCL 381 Ecology and the Law 3 hrs.
The study of law as it relates to people’s efforts to protect the environment. Included will be an examination of traditional common law principles and federal and state statutes relating to environmental protection, analysis of recent cases, and discussion of techniques for the effective use of administrative procedures of the various environmental protection agencies.

FCL 382 Business Law 3 hrs.
The study of law affecting common business transactions. The course examines the formation and performance of contracts, basic types of property interests, and key aspects of laws affecting commercial paper, Sales law, creditor-debtor relationships, and estate planning laws are briefly discussed. Prerequisite: FCL 380.

FCL 383 Commercial Law 3 hrs.
The study of law affecting the organization and operation of business firms. Organizational concerns focus on partnership and corporation laws and regulations affecting the issuing and sale of corporate securities. The agency relationship, particularly between employer and employee, which affect the operation of business activities are also examined. Prerequisite: FCL 380.

FCL 384 Criminal Law and Procedure 4 hrs.
This course surveys the laws and procedures underlying the American criminal justice system. After an introduction to the philosophy and sources of criminal law, the course investigates the legal definition of particular crimes and studies their elements. Legal procedures from arrest, through pre-trial and trial phases, to sentencing, probation and parole are also considered, together with relevant evidentiary topics. Prerequisite: SOC 462 or PSCI 325 or FCL 380 or consent of Instructor.

FCL 480 Tort Law and Liability 3 hrs.
The study of individual and business rights and liabilities with respect to negligence, intentional wrongs, libel, misrepresentation, and insurance aspects thereof. Prerequisite: FCL 380.

FCL 482 Management and Labor Relations Law 3 hrs.
A survey of laws affecting management-labor relations. The course examines general employer-employee relationships, emphasizing the hiring and firing of employees, employee benefit programs, worker’s compensation laws, and civil rights rules and regulations. Prerequisite: FCL 380.

FCL 483 Real Estate Law 3 hrs.
The study of land ownership, sales agreements, mortgages, land contracts, leases, zoning, condemnation and urban land development problems. Prerequisite: FCL 380.

FCL 484 International Business Law 3 hrs.
A study of national, regional and international laws which affect the conduct of international business. An examination of the legal regulations which promote or restrain trade or investment by international business firms. Prerequisite: FCL 380.

FCL 485 Governmental Regulations of Business 3 hrs.
Examines the laws, rules and regulations at the federal, state and local level which affect most business enterprises. Substantive laws affecting the firm’s obligation to employees, stockholders and the general public are examined as are procedural laws affecting the regulations written by public institutions. Prerequisite: FCL 380.

FCL 486 Marketing and Sales Law 3 hrs.
The course examines the law as it applies to the sale of goods, warranties affecting such sales and the methods of financing those sales. Legal obligations imposed upon and risks assumed by the seller are emphasized. Prerequisite: FCL 380 or consent.

FCL 586 Marketing and Sales Law 3 hrs.
The course examines the law as it applies to the sale of goods, warranties affecting such sales and the methods of financing those sales. Legal obligations imposed upon and risks assumed by the seller are emphasized. Prerequisite: FCL 380 or consent.

GENERAL AREA

FCL 494 International Business Seminar 1-6 hrs.
A foreign study seminar designed for qualified and capable undergraduate students, graduate students, teachers and business executives. The seminar introduces participants to a firsthand knowledge of business operations abroad through on-site inspection of foreign manufacturing, marketing, financial, and governmental organizations, supplemented by coordinated faculty lectures and assigned reading. Students completing such a seminar may receive credit in the Departments of 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 the instructor.

FCL 583 Real Estate Law 3 hrs.
The study of land ownership, sales agreements, mortgages, land contracts, leases, zoning, condemnation and urban land development problems. Prerequisite: FCL 380 or consent.

FCL 584 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 or consent.

FCL 585 Governmental Regulations of Business 3 hrs.
Examines the laws, rules and regulations at the federal, state and local level which affect most business enterprises. Substantive laws affecting the firm’s obligation to employees, stockholders and the general public are examined as are procedural laws affecting the regulation of the firm by public institutions. Prerequisite: FCL 380 or consent.

FCL 586 Marketing and Sales Law 3 hrs.
The course examines the law as it applies to the sale of goods, warranties affecting such sales and the methods of financing those sales. Legal obligations imposed upon and risks assumed by the seller are emphasized. Prerequisite: FCL 380 or consent.
MANAGEMENT
Sanjay Ahire
Raymond E. Alle
Henry H. Beam
Thomas A. Carey
Satinish Deshpande
Dan Farrell
David Flanagan
Damarad Gohar
J. Michael Keenan
Robert Landeros
Claudio Milman
K.C. O'Shaughnessy
John R. Rizzo
Trudy G. Verser

Management Courses (MGMT)
(Courses described in italics are approved for General Education.)

MGMT 210 Small Business Management
3 hrs.
A study of the fundamental principles involved in the operation of a small business enterprise. The structure, functions, and basic operating principles will be discussed and developed. Prerequisite: Non-BBA students only.

MGMT 300 Fundamentals of Management
3 hrs.
An introduction to the concepts, theories, models, and techniques central to the practice of management. Historical and contemporary thought are presented in the context of the behavioral, structural, functional, quantitative, and ethical aspects of managing organizations. Cross-cultural aspects of management are also explored. Expected outcomes for the student are: a general familiarity with the management process, and limited situational application of course content. Prerequisite: junior standing.

MGMT 301 Management Analysis and Behavior (I)
3 hrs.
Management analysis and behavior will be presented and practiced by the students in small task-oriented groups working on real problems. Group decision making, problem solving, and business presentations are emphasized. In addition, the student will learn the costs and benefits of assuming different group roles. Prerequisites: MGMT 300.

MGMT 302 Management Analysis and Behavior (II)
3 hrs.
An extension of MGMT 301.

MGMT 310 Survey of Management
3 hrs.
An introduction for non-business students to the key concepts and issues underlying management. The course includes a survey of management history and theory, management organization, and the process of management. Not open to PBA students or business majors or minors.

MGMT 314 Business Ownership and Management
3 hrs.
This course is designed to supply the specific knowledge and skills a business-trained individual needs after founding or buying an independent firm. Specific applications of business areas such as finance, advertising, accounting and tax law for the owner/operator of a small business will be addressed. It is assumed that students have a basic knowledge of business fundamentals before taking this course. Prerequisites: MGMT 300, MKTG 250.

MGMT 352 Personnel Management
3 hrs.
The personnel function in organizations including manpower needs, staffing and development, organization, and individual appraisal; employee compensation and benefits; safety and health; approaches to employee problems; labor relations. Open also to Employee Assistance Academic Program majors. Prerequisite: MGMT 300.

MGMT 360 Quantitative Methods for Business Decisions
3 hrs.
Introduction to quantitative methods and their application to the functional areas of business. Topics covered will include system modeling, probability theory, forecasting methods, decision making under conditions of certainty, risk and uncertainty, inventory models, linear programming, elementary queuing theory, and introduction to techniques of mathematical simulation. Prerequisite: MATH 216 or equivalent.

MGMT 400 Topics in Management
3 hrs.
An examination of advanced topical problems in management. (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 414 Entrepreneurship
3 hrs.
An elective for students interested in entrepreneurial careers. Primary attention given to managing a new or rapidly growing business. Alternative sources of capital are examined. Various growth strategies considered along with personal requirements for entrepreneurial success. Prerequisite: MGMT 300, FCL 320, FCL 380, MKTG 250 or department consent.

MGMT 432 Compensation Administration
3 hrs.
This course is an advanced introduction to compensation management. The course covers four general topics: wages and salary administration, performance appraisal, incentive systems, and supplementary benefits. Intended to emphasize application, the course assumes a knowledge of motivation and reinforcement theory. Prerequisites: MGMT 300, MGMT 352, and MGMT 360.

MGMT 453 Organizational Behavior
3 hrs.
A study of current theory, research, and practice regarding variables that influence human behavior in complex organizations. Emphasis is placed on models relevant to human productivity, satisfaction, retention, and leadership in organizational settings.

MGMT 454 Employment Relations
3 hrs.
This course is designed to present methods and concepts of managing employment relations. How labor unions operate and how businesses avoid or become involved with labor unions are investigated. Negotiation, conflict resolution, and contract administration processes and their operation are covered. The goals, purposes and history of organized labor are examined. Maintenance of the quality of relationships between employees and organizations is explored. Prerequisites: MGMT 300, MGMT 352.

MGMT 460 Decision Analysis
3 hrs.
This course is designed to present methods and concepts of decision making in uncertain business environments. It will address both the philosophy, and the methodology of scientific decision processes to supplement intuitive decision making. The objective of the course is to provide a clear understanding of both the limitations and potential benefits of formal analysis and information gathering. Some of the topics covered include: utility functions, values of perfect and imperfect information, and preference assessment. Prerequisite: MGMT 360.

MGMT 463 Production and Operations Management
3 hrs.
Economic and socio-technical characteristics of the major types of production systems. Managerial aspects of workplace and facility design. Simple models for controlling operations in purposeful organizations. Prerequisites: MGMT 360 or equivalent (BIS 464, FCL 420, ECON 400, MKTG 471).

MGMT 464 Production Management and Control
3 hrs.
Quantitative and computer-based methods of planning and controlling operations in manufacturing industries and service organizations. Areas covered in depth include scheduling, aggregate planning, and inventory control. This course is intended for students interested in quantitative applications in business as well as management majors concentrating in production and operations management. Prerequisite: MGMT 360.

MGMT 465 Managing for Quality
3 hrs.
The course will examine the total quality management (TQM) philosophy. The topics include benchmarking, continuous improvement, employee participation, and statistical control charts and tools. A detailed discussion of the Deming, Juran and Crosby principles is undertaken. Also, Malcolm Baldrige Award and ISO 9000 certification are examined to further enhance understanding about the TQM philosophy, the principles are applied in the classroom. Prerequisites: MGMT 300 and MKTG 250.

MGMT 470 Production/Operations Simulation
3 hrs.
Familiarizes students with simulation model development, and the use of simulation results to evaluate the effectiveness of production management strategies. Production environments are simulated that involve uncertainty and interdependency among decision variables, and the effects of managerial decisions on the performance of a production facility are also evaluated. In particular, model development, model validity and statistical analysis issues will be critically examined. 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 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. Prerequisite: Senior standing and successful completion of all course courses.

**MGMT 512 Women in Management: Male, Female, and Organizational Perspectives**

3 hrs.

A seminar dealing with the changing roles of women in business. Emphasis is given to the unique needs of women aspiring to management and professional ranks. Changes in attitudes and behaviors of women, men, and organizations and the implications of change for traditional male-female relationships and organizational operations are explored.

**MARKETING**

Andrew A. Brogacwicz, Chair
Joseph J. Bernacax
Lowell E. Crow
Linda M. Delene
Frank Gambino
Paul Lane
Hank A. Laskey
Hainoonee Lee
Jay D. Lindquist
Mustaq Luomani
Edward J. Mayo
Martin S. Meloche
Richard E. Plant
Zahir A. Quraeshi
Robert Reck
Judith M. Schmitz

**Marketing Courses (MKTG)**

**MKTG 250 Marketing Principles**

3 hrs.

Introduction to the role of marketing in the U.S. and global economy. Emphasis on how organizations create customer value through marketing strategy planning. Topics covered include buyer behavior, market segmentation, product planning, service quality, promotion, pricing, and managing channel relationships. Prerequisite: ECON 201.

**MKTG 290 Food Marketing Systems**

3 hrs.

An introductory course designed to provide an overview of food marketing systems. The marketing functions performed by producers, manufacturers, wholesalers, and retailers are examined, along with consumer shopping, purchasing, and consumption behavior. Prerequisite: Sophomore standing.

**MKTG 360 Professional Selling**

3 hrs.

An introduction to the principles of selling. Includes study of selling in our present economy; analysis of the steps in a sales presentation, and a classroom demonstration. Prerequisite: MKTG 250 or departmental approval.

**MKTG 371 Marketing Research**

3 hrs.

An introduction to the research process as it aids decision making in marketing management. The focus is on the stages of research process from the planning of the research to gathering, analysis, and interpretation of data as it relates to marketing management. Prerequisites: MKTG 250, MATH 216.

**MKTG 372 Purchasing Management**

3 hrs.

The organization and operation of the purchasing function, responsibilities and policies; problems confronting the purchasing department, relationships with other departments and suppliers. Prerequisite: MKTG 250.

**MKTG 373 Introduction to Direct Marketing**

3 hrs.

A survey course in direct marketing intended for majors and minors other than Advertising. Introduction to the marketing of goods and services to consumers and businesses using direct mail, catalog, telemarketing, and electronic media. Prerequisite: MKTG 250.

**MKTG 374 Advertising**

3 hrs.

A comprehensive survey of basic principles and practices of advertising and their relationship to the economy, society, and the system of mass communication. Prerequisite: MKTG 250.

**MKTG 375 Principles of Retailing**

3 hrs.

An introductory course designed to identify the fundamentals, challenges, and responsibilities of today's retailers. The topics covered include human resources and store operations which help successful retailers anticipate, interpret, adapt, and react to the changing environment. Prerequisite: MKTG 250.

**MKTG 376 Sales Administration**

3 hrs.

Topics include the role of personal selling in the firm; determination of market and sales potential; recruiting; training; sales compensation; territories and quotas; motivation; measuring selling effectiveness. Prerequisite: MKTG 250.

**MKTG 377 Sales Promotion**

3 hrs.

The course is designed to introduce the student to the principles 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 391 Food Merchandising**

3 hrs.

A course designed to acquaint students with merchandising principles and applications related to the marketing of food and other consumer products. Emphasis will focus on product and category management, advertising, sales promotion, pricing, purchasing and inventory control, and changing retail formats. The impact of consumer demographics and lifestyles will be related to store design/foculation; product mix, and promotion methods used by retailers, manufacturers, and wholesalers. Prerequisite: MKTG 250, MKTG 290.

**MKTG 396 Food Industry Survey**

3 hrs.

A two-week intensive survey and tour of midwestern food processors, wholesalers, and retailers, including presentations by industry executives. Students observe industry practices related to marketing, production, packaging, distribution, research, and technology development. Written reports are required. Bus travel and overnight stays are necessary. A fee for transportation and housing is required. Prerequisite: MKTG 290.

**MKTG 397 Food Marketing Field Experience**

1-4 hrs.

Students are employed full-time in professional food industry work experiences under the supervision of participating employers. An application form, signed by the student's food marketing faculty advisor, is required for employment. Scheduled meetings with an advisor and written reports are required. A performance appraisal of the trainee must be submitted by the employer. May be repeated for a maximum of 4 credit hours. Graded on a credit/no credit basis to be included in the major for Food Marketing Majors only. Prerequisite: Food Marketing major.
MKTG 470 Industrial Marketing
3 hrs.
An advanced course in planning and implementing business-to-business marketing strategies with an emphasis on segmenting markets, managing channel relationships, and creating customer value through continuous improvement and re-engineering. Prerequisites: MKTG 371, MKTG 372, and senior standing.

MKTG 471 Quantitative Marketing Applications
3 hrs.
Provides marketing student with a basic understanding of fundamental quantitative techniques and shows how these techniques will assist the decision maker in solving marketing problems. A term project applying the research process, concepts, and quantitative methods is required. Prerequisites: MKTG 250, MKTG 371.

MKTG 472 Media Planning
3 hrs.
A practical course in media planning intended for advertising majors and minors. Computerized allocation software is employed to develop complete media plans for advertising goods and services. A number of research sources are covered. Prerequisite: MKTG 374 and MKTG 477. Advertising majors and minors only.

MKTG 473 Direct Marketing Strategy
3 hrs.
An applied course in direct marketing intended for advertising majors and minors only. Covers principles, methods, and applications of direct mail, catalog, telemarketing, and electronic media to the selling of goods and services to consumers and businesses. Student teams develop a complete direct marketing plan involving research, marketing strategy, media plan, and budget for current case situation. Prerequisite: MKTG 374, MKTG 474, and MKTG 477. Advertising majors and minors only.

MKTG 474 Advertising Copy and Layout
3 hrs.
A practical course for advertising majors and minors only. Covers the writing of targeted copy for both print and broadcast media. Includes computerized methods of print layout and fundamentals of radio and television scripting and production. Prerequisite: MKTG 374 and MKTG 477. Advertising majors and minors only.

MKTG 475 International Marketing
3 hrs.
An examination of the theories and principles of international marketing. Attention directed to related commercial policies, trade practices and procedures, and marketing research tools and techniques required to locate and evaluate foreign markets. Prerequisites: MKTG 250.

MKTG 476 Retail Management
3 hrs.
This course focuses on professional management of retail companies. It addresses all levels of management—responsibility (strategies, administrative, and operating)—within retail merchandising and store operations divisions. Attention is also given to other functions and research as they relate to merchandising and operations. Prerequisite: MKTG 375.

MKTG 477 Consumer Behavior
3 hrs.
Investigate, analyze and interpret the extensive body of research information on consumer behavior considering both the theoretical and practical implications. Prerequisite: MKTG 250 and MKTG 371.

MKTG 478 Special Topics in Marketing
3 hrs.
Study of advanced topics within the marketing discipline. The course topic will be indicated in the student record. Repeatable for different topics. Prerequisite: MKTG 250 and permission of instructor.

MKTG 479 Marketing Internship
1-3 hrs.
Marketing internship experience under the supervision of participating employers. Variable credit at the rate of approximately 100 hours of approved internship experience per credit hour. May be repeated for a maximum of 6 hours. Term reports required. Employer must submit a written performance appraisal. Graded on a credit/no credit basis. Cannot be counted toward major requirements. MKTG, IDM, RET, ADV majors only. Prerequisite: MKTG 250, MKTG 371, and permission of instructor.

MKTG 480 Franchising
3 hrs.
This is an introductory course designed to study franchising operations from both franchisor and franchisee viewpoints. The topics examine the nature of franchise development, operation of a franchise system, evaluation of franchise opportunities, and the relationships between franchisees and franchisors. Prerequisite MKTG 250.

MKTG 484 Business Logistics
3 hrs.
An analysis of the movement, handling, and storage of products and materials, including work-in-progress and finished goods. Emphasis on customer requirements and customer satisfaction, total quality management, and optimization of total distribution costs. Prerequisite: MKTG 250.

MKTG 485 Material Systems Analysis
3 hrs.
This course examines the application of analytical and judgment techniques for integrated decision-making in material, logistic, and technological systems. Prerequisites: MKTG 372 and MKTG 484.

MKTG 486 Marketing Strategy
3 hrs.
Identification of marketing problem situations and cause diagnosis with development of appropriate marketing strategies. Stress placed on application of marketing fundamentals to factual case situations and on decisions in a simulated dynamic environment. Communications of findings and strategies emphasized. Cases and computer games used. When appropriate, designated sections will use actual company projects. Prerequisites: Senior level, MKTG 250, MKTG 371, plus 6 additional MKTG hours.

MKTG 487 Marketing Ethics
3 hrs.
Critical examination of the ethical implications of responsibilities involved in the marketing discipline. Ethical and effective marketing managers have concern and respect for the welfare of those affected by their decisions. A framework is presented that will help evaluate the ethics of marketing activities. Student interests are developed through research projects. Prerequisite: MKTG 250.

MKTG 492 Marketing Information Technology
3 hrs.
Applications of information technologies utilized in the marketing of food and other consumer products. Emphasis will be on the use of computer technology to analyze price and cost controls, make merchandising, shelf management, and category decisions; develop sales forecasts; and interpret various operating performance ratios. Prerequisite:
Charles M. Hodge  
Dean  
Floyd L. McKinney  
Associate Dean for Graduate Programs, Research, and Planning  
Sandra J. Odell  
Dean of Undergraduate Studies and Professional Services

Departments:  
Consumer Resources and Technology  
Counselor Education and Counseling Psychology  
Education and Professional Development  
Educational Leadership  
Health, Physical Education and Recreation  
Special Education

Centers and Offices:  
Office of Admissions and Advising  
Office of Field Studies  
Certification Office  
Counseling and Psychological Services Center  
Merze Tate Center for Research and Information Processing  
Reading Center and Clinic

In general, the College of Education performs eight functions:  
1. Supervises the selection, admission, and retention of students in advanced teacher education curricula.  
2. Provides professional education courses designed to develop competent, efficient performance in the classroom and within a school system.  
3. Provides advanced specialized courses in selected major and minor fields in departments within the college.  
4. Provides service courses to students in other colleges within the University.  
5. Provides clinical and curricular development services to teachers and school personnel.  
6. Conducts experimentation and research at all levels of professional education.  
7. Maintains liaison with professional organizations and learned societies involved in teacher education.  
8. Prepares professionals for careers related to improving the quality of life of individuals and families and management of consumer resources.

Curricula for Teachers  
The program for prospective teachers consists of three parts: (1) general education, designed to develop an intellectual foundation of appropriate depth and breadth in liberal arts and general studies; (2) advanced specialized study, in a major and minor field structured to develop a high level of academic competence and understanding; and (3) professional education study organized to prepare teacher candidates to work effectively in schools. Prospective teachers choose to work for the Michigan Elementary Provisional Certificate (valid for teaching all subjects in self-contained classrooms in grades kindergarten through eighth grade and major/minor subjects in departmentalized classrooms in grades six through eight) or the Michigan Secondary Provisional Certificate (valid for major and minor subjects in grades seven through twelve).  
The following undergraduate curricula lead to certification and are offered in the College of Education: Elementary Education, Secondary Education, Special Education, and Physical Education. Students seeking admission to these curricula must contact the Office of Admissions and Advising, 2504 Sangren Hall.  
Students electing to major in Art, Career and Technical Education, Music, Physical Education, or Industrial Arts may be certified to teach in their specialized area in grades K-12 by completing the curriculum and certification requirements. Students seeking admission to one of the following curricula must see the appropriate college or department advisor as well as the Office of Admissions and Advising:  
- Art (see Department of Art advisor)  
- Music (see School of Music for audition)  
- Special Education (see Department of Special Education advisor)  
- Speech Pathology and Audiology (see Department of Speech Pathology and Audiology advisor)  
Teaching certificates are granted only to those students who satisfactorily complete an approved teacher education program with an overall grade point average of 2.5 and a bachelor's degree. Students in Speech Pathology and Audiology must complete a master's degree.

Office of Admissions and Advising  
2504 Sangren Hall  
387-3451  
Advisors:  
Joyce DeRight, Director  
Patricia Annen  
Wendy Asmus

The Office of Admissions and Advising provides information regarding teacher education curricula and processes applications for admissions to those curricula in the College of Education. The office also coordinates academic advisement for students enrolled in all teacher education curricula and advises post-baccalaureate students seeking initial teacher certification.  
All students seeking admission to teacher education curricula as entering freshman, transfers, or as students changing curricula must contact the Office of Admissions and Advising. All students declaring a preference for a curriculum leading to a teaching certificate will be assigned a pre-education designator (PED) at the time of admission to the University.

Students wishing to enter the Elementary Education or Secondary Education program must meet the following minimum requirements at the time of application:  
- Completion of at least 35 credit hours  
- Completion of all Western Michigan University Intellectual Skills Development requirements if required (e.g. MATH 109, ED 104, ENGL 100)  
- Completion of approved college level writing course  
- Completion of ED 250 Human Development or an approved course, with a grade of "C" or better  
- Achievement of a cumulative grade point average (GPA) of 2.5 or better  
- Achievement of passing scores on the Michigan Test for Teacher Certification (MTTC) — Basic Skills Section  
- Completion of a formal application by January 15 (Effective January 15, 1995)

Students wishing to enter the Special Education program must meet the following minimum requirements at the time of application for consideration — admission is not guaranteed:  
- Completion of 56 hours (Winter semester hours may be counted)  
- Completion of all Western Michigan University Intellectual Skills Development requirements if required (e.g. MATH 109, ED 104, ENGL 100)  
- Completion of approved college level writing course  
- Completion of ED 250 Human Development or an approved course, with a grade of "C" or better  
- Achievement of a cumulative grade point average (GPA) of 2.5 or better  
- Achievement of passing scores on the Michigan Test for Teacher Certification (MTTC) — Basic Skills Section  
- Documentation of thirty clock hours of experience with person(s) with a disability and current T.B. test  
- Completion of a formal application for admission to Special Education by January 15. Admission applications will be processed once a year.

TEACHER TESTING  
Public Act 282 (1992) amends Section 1531 of Public Act 451 (1976), as amended by Public Act 267 (1986), mandates the implementation of a teacher certification testing program in Michigan effective July 1, 1992. Under the provisions of this act, all candidates for teacher certification in Michigan must pass a basic skills (reading, writing, and mathematics) test for a secondary level teaching certificate must pass the appropriate available subject area examination for each subject area in which they are to be certified. Candidates for an elementary level teaching certificate must
Students may not enroll in other coursework campus in designated partnership schools. The following criteria must be met prior to:

1. Completion of all required coursework.
2. A cumulative grade point average of 2.5 or above.
3. An overall grade point average of 2.5 in the professional sequence and no grade lower than a "C" in any Professional Education course.
4. Recommendation from major and minor departments.
5. Completion of method course(s) in major and minor with a minimum grade of "C".

Students must contact the Office of Field Studies at least one year prior to thesemester and complete the following steps:

- Select their placements for intern teaching.
- The Office of Field Studies makes Placements.
- Students must achieve at least a grade of "C" in Intern Teaching, in addition to having met all other requirements for intern teaching and graduation.

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.

**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 master's degree.

**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 Admissions and Advising within twenty-one (21) days of the aggrieved action. Appeals may be reviewed by the Academic and Professional Standards Committee. Information about the appeal procedure is available in the Office of Admission and Advising.

**HEALTH AND LIABILITY INSURANCE**
Students engaged in field experiences or intern teaching must give evidence of having health insurance at the time of course enrollment. Liability insurance coverage will be provided by the University through a fee assessed at the time of enrollment in courses requiring field experience.

**Elementary Education Curriculum**
Advising: The Office of Admissions and Advising
2504 Sangren Hall
Bachelor of Arts or Bachelor of Science Degree
Michigan Elementary Provisional Certificate

The Elementary Education Curriculum is designed to prepare students to assume teaching responsibilities in self-contained classrooms in grades K-8. Additional information may be obtained from the Office of Admissions and Advising.

**Minimum hours required for this curriculum .................................. 130 hours**

**Program Requirements:**
General Education Distribution ........... 40 hours

General Education Requirement: 35 hours required for University General Education Requirement. An additional five hours in General Education courses from the College of Arts and Sciences (nonprofessional courses only) are required for Michigan certification. Students' General Education Distribution requirements will be met by options within the professional education program and the approved minors. Courses listed in the elementary education program description with an * are approved for General Education credit. Two courses at the 300-400 level are required.

**Minors/Majors Approved for elementary Education**
Students selecting the elementary education curriculum are required to complete three minors; the Elementary Education Minor (EED, 28 hrs.), the Science and Mathematics Teaching Minor (SCM, 27 hrs.) and one additional minor selected from the following:

- Art (ATE), 24 hrs.
- Early Childhood Education (EEE), 20 hrs.
- Integrated Creative Arts (ICA), 24 hrs.
- English Elementary Education (ENG), 21 hrs.
- French (FRE), 20 hrs.
- German (GER), 20 hrs.
- Group Social Science (SOC), 24 hrs.
- Physical Education Elementary (PEE), 22 hrs.
- Spanish (SPA), 20 hrs.
- OR

they may 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 Special Education to determine acceptable minors and desired level of preparation.

Special Education, Mentally Impaired /Elementary major** (34 hrs.) Contact Department of Special Education to determine acceptable minors and desired level of preparation.

### General Education Foundations ........... 23/27 hours

**ENGL 282 Children's Literature ........... 4 hrs.

One course from the following:

**ENGL 109 Thought and Writing .......... 4 hrs.
**BIS 142 Informational Writing .......... 3 hrs.

One course from the following:

**GEOG 102 World Geography Through Media and Maps .......... 3 hrs.
**HIST 211 U.S. History Since 1877 ....... 3 hrs.
**PSCI 200 National Government .......... 3 hrs.

One course from the following:

**COM 170 Interpersonal Communications .......... 3 hrs.
**ANTH 370 Culture and Communication .......... 4 hrs.
(SPPA majors substitute *LING 105, The Nature of Language, 4 hrs.)*

One course from the following:

**WMS 300 Working Women ........... 3 hrs.
**WMS 310 Women and Social Institutions .......... 3 hrs.
**WMS 450 Male/Female Psychological Perspectives .......... 3 hrs.
**HIST 316 Women in American History .......... 3 hrs.

One course from the following:

**ANTH 120 Peoples of the World .......... 3 hrs.
**SOC 304 Introduction to Non-Western World .......... 4 hrs.

One course from the following:

**ANTH 240 Principles of Cultural Anthropology .......... 3 hrs.
**BAS 300 Black Experience .......... 3 hrs.
**ECON 107 Contemporary Domestic Economic Issues .......... 3 hrs.
**EGEOG 311 Geography of Michigan .......... 3 hrs.
**SOC 100 American Society .......... 4 hrs.
**HIST 210 U.S. History to 1877 .......... 3 hrs.
**SOC 200 Principles of Society .......... 3 hrs.

**Note:** Approved for General Education credit.

CS 105 is required for all students not electing the Science and Mathematics Teaching Minor (Art, Music, Physical Education, Special Education, or Speech Pathology and Audiology) Professional Education Program ........... 29 hours

An overall grade point average of 2.5 and no grade lower than a "C" in any Professional Education course are required.

Pre-Professional Foundations: 3 hrs.
ED 250 Human Development ........... 3 hrs.
Professional Education: 14 hrs.

ED 309 Educational Psychology of Early Childhood (Early Childhood Emphasis or minor to be taken concurrently with ED 312) Prerequisite: ED 250. 3 hrs.

ED 310 Educational Psychology of Childhood (to be taken concurrently with ED 312) 3 hrs. Prerequisite: ED 250. Admission to professional program in education.

ED 347 Technology for Elementary Education 2 hrs. Prerequisite: ED 309 or ED 310 (must be taken concurrently with ED 351).

SPED 527 Exceptional Learners in the Classroom Organization and Management: Young Children (Early Childhood Emphasis or Minor) Prerequisite: ED 309

ED 369 Classroom Organization and Management: Young Children (Early Childhood Emphasis or Minor) Prerequisite: ED 309

ED 395 School and Society 3 hrs. Prerequisite: Minimum 10 hours satisfies Baccalaureate Writing Requirement.

**Not required for students majoring in SPPA and SPED. Physical Education majors may substitute either PEPR 320 or PEPR 520.

Professional Practicum 12 hrs. Prerequisite: All coursework completed.

ED 410 Seminar in Education 2 hrs.

ED 470 Intern Teaching: Early Childhood 5 hrs. Prerequisite: Minimum 70 hours satisfies Baccalaureate Writing Requirement.

ED 471 Intern Teaching: Primary Grades 5/10 hrs.

Other Requirements

University Intellectual Skills requirements in Reading, Mathematics, Writing, College Writing, Baccalaureate Writing, and Computer Literacy must be met.

The College Writing Literacy requirement may be met by selecting 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 362. Students not electing the Science and Mathematics Teaching Minor must select CS 105 or BIS 105. The baccalaureate writing requirement is met through ED 395.

Baccalaureate Writing Requirement

Students who have chosen the Elementary Education major must complete the Baccalaureate Writing Requirement by successfully completing ED 395 School and Society.

Elementary Education Minors

These 28 hour interdepartmental programs are designed to prepare students to assume teaching responsibilities in a general education classroom in grades K-8.

Prior to entering the minors, students must complete: (a) 12-16 hours of specified General Education coursework in addition to the hours required as part of the Professional Education sequence and (b) 7-10 hours of prerequisites to required courses in the minor.

Elementary Education minor requirements with Science and Mathematics Teaching Minor and third minor of English

Minimum 2.0 GPA required in this minor.

These courses cannot be used as part of any other minor or major.

Select one course from the following:

*GEOG 105 Physical Geography 4 hrs.
*SCI 180 Physical Science for Elementary Educators 1 3 hrs.

Select two courses from the following:

ART 200 The Creative Process 3 hrs.
MUS 240 Music for the Classroom Teacher 3 hrs.
THEA 564 Creative Drama for Children 4 hrs.

Select one course from the following:

ENGL 369 Writing for Elementary Teachers 4 hrs.

ENGL 373 Reading and Writing as Psycholinguistic Processes 4 hrs.

Required:

Additional course to be approved by education advisor (e.g. ED 200, ED 398) 3 hrs.

Required courses—to be taken in this sequence:

MATH 150 Number Concepts for Elementary/Middle School Teachers (minimum "C" grade) 4 hrs. Prerequisite: MATH 110 OR adequate performance on placement test.

ED 312 The Foundations of Literacy 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*

ED 352 Literacy and Language Arts in the Content Areas 3 hrs. Prerequisite: ENGL 282*

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 PSY 200*.

* Approved for General Education credit. See advisor in English for third minor.

Elementary Education minor requirements with Science and Mathematics Teaching Minor and third minor of Art, Integrated Creative Arts, Physical Education/Elementary Education. Minimum 2.0 GPA required in this minor.

These courses cannot be used as part of any other minor or major.

Select one course from the following:

*GEOG 105 Physical Geography 4 hrs.
*SCI 180 Physical Science for Elementary Educators 1 3 hrs.

Required courses—to be taken in this sequence:

MATH 150 Number Concepts for Elementary/Middle School Teachers (minimum "C" grade) 4 hrs. Prerequisite: MATH 110 OR adequate performance on placement test.

ED 312 The Foundations of Literacy 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*

ED 352 Literacy and Language Arts in the Content Areas 3 hrs. Prerequisite: ENGL 282*

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 PSY 200*.

* Approved for General Education credit. See advisor in English for third minor.

Elementary Education minor requirements with Science and Mathematics Teaching Minor and third minor of French, German, Spanish, or Group Social Science Minimum 2.0 GPA required in this minor.

These courses cannot be used as part of any other minor or major.

Select one course from the following:

*GEOG 105 Physical Geography 4 hrs.
*SCI 180 Physical Science for Elementary Educators 1 3 hrs.

Select two courses from the following:

ART 200 The Creative Process 3 hrs.
MUS 240 Music for the Classroom Teacher 3 hrs.
THEA 564 Creative Drama for Children 4 hrs.

Select one course from the following:

ENGL 369 Writing for Elementary Teachers 4 hrs.

ENGL 373 Reading and Writing as Psycholinguistic Processes 4 hrs.

Required:

Additional course to be approved by education advisor (e.g. ED 200, ED 398) 3 hrs.

Required courses—to be taken in this sequence:

MATH 150 Number Concepts for Elementary/Middle School Teachers (minimum "C" grade) 4 hrs. Prerequisite: MATH 110 OR adequate performance on placement test.

ED 312 The Foundations of Literacy 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*

ED 352 Literacy and Language Arts in the Content Areas 3 hrs. Prerequisite: ENGL 282*

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 PSY 200*.
Select one course from the following:
ENGL 369 Writing for Elementary Teachers 4 hrs.
ENGL 373 Reading and Writing as Psycholinguistic Processes 4 hrs.

Required:
Additional course to be approved by education advisor (e.g. ED 200, ED 398) 3 hrs.
* Approved for General Education credit. See advisor for third minor.

Elementary Education minor requirements with a major of Art, Music, or Physical Education
This program does not include the Science and Mathematics Teaching Minor. Minimum 2.0 GPA required in this minor. These courses cannot be used as part of any other minor or major.

Select one course from the following:
*GEOG 105* Physical Geography 4 hrs.
*SCI 180* Physical Science for Elementary Educators 1-3 hrs.

Required courses—to be taken in this sequence:
MATH 150 Number Concepts for Elementary/Middle School Teachers (minimum "C" grade) 4 hrs.
Prerequisite: MATH 110 OR adequate performance on placement test
ED 312 The Foundations of Reading Instruction (to be taken concurrently with ED 309 OR ED 310) 3 hrs.
Prerequisite: ENGL 282* AND ED 312
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
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*

Select one course from the following:
ENGL 369 Writing for Elementary Teachers 4 hrs.
ENGL 373 Reading and Writing as Psycholinguistic Processes 4 hrs.

Required:
Additional course to be approved by education advisor (e.g. ED 200, ED 398) 3 hrs.
* Approved for General Education credit. See major advisor.

Integrated Creative Arts Minor
Advisor: Office of Admission and Advising
2504 Sangren Hall
(616) 387-3474

This 24-hour interdepartmental program is offered to preserve elementary school teachers and special education teachers. The program stresses the integration of all the arts as a primary motivating agent in the teaching of all subject areas. It also emphasizes the stimulation and development of creative problem-solving behaviors.

- A minor is required. Students must see an advisor before they have completed eight hours in the minor. Minimum 2.0 GPA required in this minor.
- *Art 148 Direct Encounter with the Arts
- *DANC 148 Direct Encounter with the Arts
- *MUS 148 Direct Encounter with the Arts
- *THEA 148 Direct Encounter with the Arts

MATH 151 Geometry for Elementary/Middle School Teachers (Prerequisite: MATH 150) 3 hrs.
MATH 265 Probability and Statistics for Elementary/Middle School Teachers (Prerequisite: MATH 150) 3 hrs.

* Approved for General Education credit.
** ED 230 is geared to personal creative development and is not restricted to Integrated Creative Arts Minor. Students enrolled in the minor must take ED 430 (Creativity in the Elementary School) after they have taken all other courses in this group minor.
*** Electives to accommodate student needs and balance will be determined by the departments and faculties of Education and Professional Development, Art, Dance, Music, and Communication and selected with the approval of the advisor.

Science and Mathematics Teaching Minor
Advisor: College of Education
Office of Admissions and Advising
2504 Sangren Hall

The minor in science is open to students enrolled in the elementary education curriculum. Transfer students will need to have their previous coursework 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.

Because of the interdisciplinary nature of this minor, one course must be selected from each of the three science areas. Mathematics courses must be taken in sequence. Minimum 2.0 GPA required in this minor.

A. REQUIRED SCIENCE (Select one course from each area. Courses approved for general education are marked with an *)

- Biological
  - SCI 170 Life Science for Elementary Educators I 3 hrs.
  - BIOS 234 Outdoor Science 4 hrs.
- Earth Science
  - *GEOG 130 Physical Geology 4 hrs.
  - *GEOG 105 Physical Geography 4 hrs.
- Physical Science
  - CHEM 200 Chemical Science in Elementary Education 4 hrs.
  - SCI 231 Physical Science in Elementary Education II 4 hrs.

B. REQUIRED MATHEMATICS
Minimum "C" grade required in MATH courses

MATH 151 Geometry for Elementary/Middle School Teachers (Prerequisite: MATH 150) 3 hrs.
MATH 265 Probability and Statistics for Elementary/Middle School Teachers (Prerequisite: MATH 150) 3 hrs.

C. REQUIRED COURSES PRACTICUM
MATH 352 Teaching of Elementary Mathematics (Prerequisites: MATH 151, MATH 265 3 hrs.
ED 401 Teaching Elementary School Science 3 hrs.
Prerequisites: ED 310 (ED 309 Early Childhood) and all science courses. May be taken concurrently with ED 402.
ED 402 Practicum in Science and Mathematics Teaching 2 hrs.
Prerequisites: MATH 352 and ED 401. ED 401 may be taken concurrently.

MATH 352 and completion of all science courses are prerequisites for ED 401 and ED 402.
Minor or Emphasis in Early Childhood Education

Advisor: Office of Admissions and Advising
2504 Sangren Hall
(616) 387-3474

Students may complete a minor or emphasis in Early Childhood. The completion of each offers a special professional sequence for kindergarten through eighth grade certification with an endorsement signifying special preparation in teaching young children. The Early Childhood Emphasis is an 18-hour program; the minor requires 21 hours. Students may choose either course of study to receive an Early Childhood endorsement on their teaching certificate.

Prerequisite: ED 250 Human Development and admission to professional program.

Students will have an intern teaching assignment, which will be done in the Kalamazoo area or specified partnership school, where early childhood faculty are available. Students with an Early Childhood Minor or Emphasis should satisfactorily complete the Elementary Education Curriculum requirements, with the following additional courses or substitutions:

ED 350 Young Children, Their Families, and Their Society 3 hrs.
ED 351 Literacy Development 3 hrs.
ED 309 Educational Psychology: Early Childhood 3 hrs.
ED 399 Classroom Organization and Management: Early Childhood 3 hrs.
ED 410 Seminar in Education: Early Childhood Emphasis 2 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 an additional intern teaching assignment. In all, the student must complete 12 hours of intern teaching and seminar for elementary certification.

Middle School and Junior High School Curriculum

Bachelor of Arts or Bachelor of Science Degree

State Elementary or State Secondary Provisional Certificate

Applications are not currently being accepted for this program.

A program of undergraduate studies to prepare students to teach in the middle and junior high school. The program includes assignments in teaching-learning processes and content areas which are effective for working with the older child and the young adolescent in grades 5-9. (Students have option of earning elementary (grades K-8) or secondary (grades 7-12) certification. Elementary certification is recommended.)

The program includes a two-semester sequence of planned and supervised experiences specifically designed for teaching in the middle or junior high school. Program requirements must be planned and approved by advisor.

Minimum hours required for this curriculum 122 hrs.

General Education Requirement: 38 hrs.

For University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (nonprofessional coursework only) and/or the College of General Studies, are required for Michigan certification.

Major/Minor Requirements Elementary Certification Option

1. Two minors or group minors (20-28 hours), OR one major or group major (30-36 hours) selected from the following areas: English, foreign languages, mathematics, science, social science minor only
2. Elementary Education minor: see advisor in the Office of Admissions and Advising.

Secondary Certification Option

1. One major or group major
2. One minor or group minor

Majors and minors must be selected from the following areas: Communication, English, languages, linguistics (second major only), mathematics, and science.

It is strongly recommended that minors and majors be chosen from related disciplines.

See advisor for acceptable combinations.

Pre-professional Foundations: 3 hrs.
ED 250 Human Development 3 hrs.

Professional Education

An overall grade point average of 2.5 and no grade lower than a “C” in any Professional Education course are required.

Two semester-planned sequence

Fall Semester

One course from: SOC 314, 320, 353, 514.
COM 170 Interpersonal Communications 3 hrs.
COM 370 Interpersonal Communication II 3 hrs.
ED 312 The Foundations of Reading Instruction 3 hrs.
OR
ED 301 Teaching of Reading Secondary 3 hrs.
ED 371 Elementary Classroom Organization and Management 3 hrs.
ED 398 Special Studies in Education (topical seminars) 4 hrs.

Field Experiences (no credit)

Winter Semester

ED 398 Special Studies in Education (Psychology and Guidance of Young Adolescents) 2 hrs.
ED 352 Reading and Related Communication Skills for Middle and Upper Grades 3 hrs.
ED 395 School and Society 3 hrs.
ED 407 Elementary Social Studies and Multicultural Education (elementary option OR methods course in major or minor field—secondary option) 3 hrs.
ED 410 Seminar in Education 2 hrs.
ED 472 Intern Teaching: Upper Elementary/Middle School 5-10 hrs.

472 and 410 are taken concurrently during senior year. Professional Education must total 21 hours. Other professional education requirements are included in two semester planned sequence.

Physical Education 2 hrs.

Bachelor of Science Degree Elementary Music Curriculum

Elementary Education Music

Grants certification to teach in elementary grade room (K-5) and music (K-8).

General Education Requirements 35 hrs.

Music Major 40 hrs.

Music 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 220-221-300-321 4

NOTE: All students in this curriculum will complete four semesters of keyboard, and/or pass an examination given by the Keyboard and Professional Education areas. No class piano course is to be counted twice. Students who do not qualify for entry in 220 must complete 120 and/or 121 as a deficiency. Students who test out of Advanced Keyboard Musicianship (321) are urged to consider taking Basic Music (260); American Music (350); Non-Western Music (352); Voice (200); or courses not taken in the Choral or Instrumental elective areas.

Voice Class 4
Four semesters of voice, including one of Vocal Techniques for Music Educators (117) and one at 100-200 level. 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 2
Choral Elective
Select one of the following:
Choral Conducting and Literature (330); Choral Techniques (339); Choral Methods (340) 2
Instrument Elective
Select two 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 4
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 398) 3 hrs.
Professional Education Program ... 17 hrs.
ED 250 ... 3
ED 309 ... 3
ED 310 ... 3
ED 347 ... 3
SPED 527 ... 3
ED 369 ... 3
ED 371 ... 3
ED 395 ... 3
Professional Practicum ... 12
ED 410 ... 2
ED 470, 471, or 472 ... 5-10
Physical Education ... 2
Physical Education for Elementary Teacher (PEPR 340) will satisfy one hour of this requirement.

Baccalaureate Writing Requirement
Students who have chosen the Elementary Music Curriculum major will satisfy the Baccalaureate Writing Requirement by successfully completing ED 395 School and Society.

Secondary Curriculum
Bachelor of Arts or Bachelor of Science Degree
State Secondary Provisional Certificate (For the preparation of teachers in Grades 7-12)

Minimum hours required ... 122 hrs.
This curriculum may require more than 122 credit hours. A minimum grade point average of 2.5 must be attained for advancement from the Pre-Education (PED) curriculum to the Secondary Education (SED) curriculum. A minimum grade point average of 2.5 must be attained for enrollment in Intern Teaching and for recommendation for the teaching certificate. PED curriculum students are not permitted to enroll in upper level professional education courses until admission requirements are met and application is approved.

General Education Requirement—Minimum 40 semester hours of credit as follows: 35 hours from General Education Programs. 5 hours from General Education Program and/or courses in language and literature, science, or social studies areas (non-professional courses only).

General Physical Education
2 semester hours minimum. 8 semester hours maximum. Two semester hours of general physical education, distributed over at least two “activity” courses are required.

Professional Education Program: 34 hrs.
Minimum grade of “C” required in each of these courses and a grade point average of 2.5 maintained in all courses after admission to teacher education. To be taken in sequence.

Secondary Education for students with majors in the College of Arts and Sciences:
ED 250 Human Development ... 3
ED 309 The Adolescent and School Learning ... 3
ED 301 Teaching of Reading (Secondary) ... 3
Prerequisite: ED 300, must be at least a junior. To be taken concurrently with ED 302.
ED 302 Teaching and Learning ... 4
Prerequisite: ED 300, must be at least a junior. To be taken concurrently with ED 301.
ED 303 Classroom Organization and Teaching Management ... 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.)
ED 475 Intern Teaching (Secondary) ... 10
Prerequisite: All of the above and successful completion of all coursework. 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 appropriate lists of acceptable majors and minors listed below.

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. (Only programs listed below are acceptable for secondary education).

Majors
(At least 30 semester hours.)
(Choose one.)
*Art Education (ATE)
Biological (BIO) (Science Minor)
Career and Technical Education: Drafting (DRA)
Graphic Arts (GRA)
*Home Economics (HEE)
Metalworking (MWW)
Power/Auto Mechanics (POW)
Secondary Education in Marketing (SEM)
Woodworking (WDK)
Chemistry (CHM)
Earth Science (EAR)
English (ENG)
Geography (GEG) (Social Science Minor)
*Health Education (HET)
History (HIS) (Social Science Minor)
*Industrial Education:
DRAFTING (DRA)
General Industrial Ed (GIA)
Graphic Arts (GRA)
Metal Working (MWW)
Power-Auto Mechanics (POW)
Woodworking (WDK)

Language Department Majors:
French (FREN)
German (GER)
Latin (LAT)
Russian (RUS)
Spanish (SPA)

Mathematics (MAT)
Music Education (MUE) (includes vocal or instrumental minor)
*Physical Education/Teacher-Coach (PYE)
Physics (PHY)
Political Science (POL) (Social Science Minor)
Secondary Education in Business (SEB)
Theatre Education (THN) (only as second major)
These majors give K-12 certification in that subject.

Minors
(At least 20 semester hours)
(Choose One)
Biology (BIO)

Career and Technical Education:
Drafting (DRA)
Graphic Arts (GRA)
Metallurgy (MWW)
Secondary Education in Marketing (SEM)
Power/Auto Mechanics (POW)
Woodworking (WDK)
Chemistry (CHM)
Communication (COM)
Earth Science (EAR)
English (ENG)
Environmental Studies (EVS) with SCI major only
Family Life Education (FLE)
Geography (GEG)
Health Education (HET)
History (HIS)
Industrial Education (same minor areas as listed under major)

Language Department
French (FREN)
German (GER)
Latin (LAT)
Russian (RUS)
Spanish (SPA)

Mathematics (MAT)
Occupational Child Care (OCC) (with Vocational majors only)
Occupational Foods (OCE) (with Home Economics major only)
Physical Education (PES)
Physical Education/Exceptional Child (PEC) (only with PYE or SPED major)

Physics (PHY)
Political Science (POL)
Secondary Education (SEC) (with Biology major only)

Social Science (SS) (with approved major only)

*Subjects approved for secondary education only.
The primary purpose of the Reading Center and Clinic is to provide educational and clinical experiences for students enrolled at Western Michigan University who are preparing to work with children and adults in reading. Special activities carried on by the clinic are designed to provide diagnosis and developmental and corrective instruction in reading for children and adults, and to furnish consultative services for teachers and schools in Southwestern Michigan. Furthermore, the clinic provides students in education an opportunity to observe and participate in the administration of educational and clinical tests, and the procedures employed in interviewing children, parents, and school personnel. The Center also houses the Reading Recovery Project. See Education and Professional Development course listings for reading courses offered.

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**CONSUMER RESOURCES AND TECHNOLOGY**

Linda L. Dannison, Chair  
Max E. Benne  
Michelle D. Chirnoda  
Margie J. Geisler  
Gail A. Havens  
Rebecca S. Marvin  
Mary Jo Peterson  
Maja Petersen  
Nancy H. Steinhaus  
Darrell B. Thomas  
Donna R. van Westreinen  
Patricia B. Viard  
Ronald J. Wilson  
Carl A. Woloszyk

The mission of the Department of Consumer Resources and Technology is to provide integrative educational programs and conduct research focused on reciprocal relationships among individuals, families, and their environments toward the goal of improving the quality of life within a dynamic world community.

Curricula offered in the department include:
- Dietetics
- Family Studies
- Food Service Administration
- Industrial Education Teaching
- Interior Design
- Textile and Apparel Studies—Merchandising
- Textile and Apparel Studies—Production
- Vocational Education Teaching

Minors offered in the department include:
- Family Life Education (Teaching)
- Food Occupations (Teaching)
- Occupational Child Care (teaching)
- Textile and Apparel Merchandising

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**Academic Advising**

Charon Sanford, Room 3033, Kohrman Hall. The advisor is available to assist in individual program planning, recommend electives appropriate to a student's educational objectives, discuss employment opportunities, and help solve academic problems. Substitutions and transfer credit must be approved by departmental advisor.

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**Vocational Education**

Students desiring to become qualified as teachers of Vocational Home Economics, Vocational Technical Education (Drafting, Graphic Arts, Metal Working, Power/Automotives, Woodworking), or Secondary Education in Marketing must complete the appropriate study program found under Vocational Education in the final section describing programs in the College of Education. Only persons holding the appropriate Vocational and Secondary Provisional Certificates will be qualified to teach in these reimbursed Secondary programs in Michigan Public Schools.

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**Work Experience Programs**

Programs offered in textile and apparel studies, food service administration, interior design, and family studies are designed to develop occupational competencies in their respective areas. These programs, which are sponsored jointly with industries, provide students with an opportunity to complete a four-year program leading to a Bachelor of Science degree.

**Additional Information**

General information regarding counseling, scholarships and special programs of interest to students in this department may be found under the beginning of the College of Education section of the catalog. Enrollment will not be honored in any course when other students are requesting that course if the student does not attend the first class meeting (lecture or lab) unless prior arrangements have been made with the instructor. Students not attending courses for whatever reasons are responsible for processing drop slips with the Registration Office if fees are to be refunded and an "X" grade avoided.

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**Dietetics**

Bachelor of Science Degree

The Dietetics Program meets the American Dietetic Association's Standards of Education and graduates are eligible to apply for an accredited internship or an approved supervised practice program. Students must complete either the internship or the supervised practice in order to qualify for certification as Registered Dietitians. After certification, the Registered Dietitian is eligible for positions in hospitals such as clinical dietitian or food service administrator, for positions in commercial food establishments such as restaurants, hotels, industrial facilities, schools, colleges, universities and the armed forces; and for positions in community health agencies. The Student Dietetic Association provides an opportunity to meet dietetics professionals, learn about the profession and volunteer for pre-professional activities, as well as meet and interact with fellow dietetics students.

**BACCALAUREATE WRITING REQUIREMENT**

Students who have chosen the dietetics major will satisfy the Baccalaureate Writing Requirement by successfully completing CRT 461 Diet and Disease or CRT 468 Advanced and Experimental Foods.

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**Requirements**

Candidates for the Bachelor of Science degree must complete the following program of 122 semester hours. A grade of "C" or better must be earned in courses with a CRT prefix and in other specified courses presented for graduation.

**REQUIRED CRT COURSES** — 30 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRT 100</td>
<td>Career Seminar - DI/FSA</td>
<td>1</td>
</tr>
<tr>
<td>CRT 165</td>
<td>Food Science Principles</td>
<td>3</td>
</tr>
<tr>
<td>CRT 260</td>
<td>Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>CRT 368</td>
<td>Quantity Foods</td>
<td>4</td>
</tr>
<tr>
<td>CRT 460</td>
<td>Advanced Nutrition</td>
<td>4</td>
</tr>
<tr>
<td>CRT 461</td>
<td>Diet and Disease</td>
<td>4</td>
</tr>
<tr>
<td>CRT 462</td>
<td>Community Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>CRT 466</td>
<td>Institutional Management</td>
<td>4</td>
</tr>
<tr>
<td>CRT 468</td>
<td>Advanced and Experimental Foods</td>
<td>4</td>
</tr>
</tbody>
</table>

Minimum "C" grade required.
REQUIRED RELATED COURSES—31 hours

Minimum "C" grade required

MATH 111 Algebra II 3
IME 102* Technical Communications 3
CRT 225 Computer Applications 3
COM 170* Interpersonal Communications I 3
CTE 344 Teaching Methods for CTE 3
PSY 100* General Psychology 3
SOC 200* Principles of Sociology 3
ECT 201* Principles of Economics 3
MGMT 300 Fundamentals of Management 3
PhIL 434* Biomedical Ethics and Society 4

SCIENCE COURSES—25 hours

Minimum "C" grade required

CHEM 101* OR CHEM 102* General Chemistry I 4
BIOG 112* Principles of Biology 3
CHEM 365 Introduction to Organic Chemistry 4

GENERAL EDUCATION—35 hours total

* above apply toward this requirement

PHYSICAL EDUCATION—2 hours

ELECTIVES—26 hours

Family Studies

Bachelor of Science Degree

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.

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the family studies curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing CRT 415 Effective Parenting.

Requirements

Candidates for the Bachelor of Science degree must complete the following program of 122 semester hours.

REQUIRED CRT COURSES—30 hours

CRT 100 Career Seminar—FST 1
CRT 202 Field Experience 2
CRT 203 General Education 3
CRT 210 Human Sexuality 3
CRT 214 Human Growth and Development 3
CRT 215 Adolescence Development 3
CRT 266 Food and Society 3
CRT 318 Intimate Relationships 3
CRT 410 Teaching Sex Education 3
CRT 413 Marriage and Family 3
CRT 415 Effective Parenting 3

REQUIRED RELATED COURSES—12 hours

SOC 122 Death, Dying and Bereavement 3
SOC 190* Men and Women in Contemporary Society 3

SOC 314 Ethnic Relations 3
CS 105* Introduction to Computers OR CRT 225 Computer Applications 3

RELATED ELECTIVES—Choose 21 hours

BAS 300* Black Experience 3
COM 170* Interpersonal Communication 3
CRT 429 Internship 6
CRT 575 Admin of Child Development Centers 3
FEPR 100* Health for Better Living 4
PSY 100* General Psychology 3
PSY 250 Abnormal Psychology 3
SOC 210 Modern Social Problems 3
SOC 362 Criminology 3
SOC 412 Child Abuse 3
SOC 454 Juvenile Delinquency 3
SWRK 100* Introduction to Social Services 3

GENERAL EDUCATION—40 hours total

* above apply toward this requirement

PHYSICAL EDUCATION REQUIREMENT—2 hours

ELECTIVES—20 hours

Food Service Administration
Bachelor of Science Degree

The food service administration curriculum is scientifically oriented for indepth study of foods in relation to the business field. Students may pursue supervisory/managerial careers in commercial food institutions in the equipment field, food research, public utility companies, mass media productions, quality testing, technical writing, or governmental food agencies. Student Food Service Association (FOOSA) activities provide additional professional experiences.

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Food Service Administration major will satisfy the Baccalaureate Writing Requirement by successfully completing CRT 468 Advanced and Experimental Foods.

Requirements

Candidates for the Bachelor of Science degree must complete the following program of 122 semester hours.

REQUIRED CRT COURSES—30 hours

CRT 100 Career Seminar—DIFSA 1
CRT 165 Food Science Principles 3
CRT 202 Field Experience 3
CRT 205 Topics in CRT—Breads 1
CRT 205 Topics in CRT—Catering 1
CRT 225 Computer Applications 3
CRT 260 Nutrition 3
CRT 368 Quantity Foods 4
CRT 466 Institutional Management 4
CRT 468 Advanced and Experimental Foods 4
CRT 590 Projects/Problems in CRT 3

REQUIRED RELATED COURSES—56 or 55 hours

IME 102* Technical Communications 3
BIOS 112* Principles of Biology 3
BIOS 235 Microbiology and Infectious Diseases 3
CHEM 101* General Chemistry 4
ECON 201* Principles of Economics 3
ECON 202* Principles of Economics 3
MATH 110 Algebra 3
MATH 116* Finite Math 3
MGMT 352 Personnel Management OR IME 402 Supervision/Indus. Oper. 3
PSY 100* General Psychology 3

SELECT 21 HOURS FROM:

CRT 160* Introduction to Agriculture 3
CRT 205 Consumer Education 3
CRT 429 Internship 6
ACTY 210 Principles of Accounting 3
ACTY 211 Principles of Accounting 3
BIS 340 Business Communication 3
FCL 320 Business Finance 3
FCL 385 Legal Environment 3
FCL 382 Business Law 3
MATH 216 Business Statistics 3
MGMT 210 Small Business Management 3
MGMT 300 Fundamentals of Management 3
MKTG 250 Marketing 3

GENERAL EDUCATION—40 hours

Courses with * above fulfill 29/28 hours of this requirement.

PHYSICAL EDUCATION—2 hours

ELECTIVES—23 hours

Industrial Education Curriculum

Bachelor of Science Degree

The Industrial Education curriculum is designed to prepare teachers of industrial education for the junior and senior high school levels. The student must select one major and one minor from the technical areas available. An industrial education teaching minor is available to students not majoring in industrial education, and includes 20 hours of technical courses plus six hours of professional vocational education courses, CTE 342 and CTE 344.

1. Minimum hours required for this curriculum 122 hrs.
2. General Education Requirements* 40 hrs.
3. 3 semester hours of written communications and MATH 110 and 111 or equivalent are required.
4. Technical minor in one of the following areas 30 hrs.
   General Industrial Arts
   Drafting
   Graphic Arts
   Metalworking
   Power Automotive
   Woodworking
5. Technical minor in any one of the above areas other than the major 20 hrs.
6. Professional Education Courses 21 hrs.
   ED 250 Human Development and Learning 4
   ED 301 Teaching of Reading (Secondary) 3
   ED 302 Teaching and Learning 3
   ED 385 School and Society 3
   ED 475 Directed Teaching (Secondary) 10
7. Professional Vocational Education Courses 6 hrs.
   CTE 342 Curriculum Development in CTE 3
   CTE 344 Teaching Methods for CTE 3
8. Elective 3 hrs.
   * To include CS 105 Introduction to Computers
TEXTILE AND APPAREL STUDIES

Bachelor of Science Degree

Merchandising Emphasis

The merchandising emphasis is designed to prepare students for careers in retailing and related fields. The four-year program includes studies in merchandising, marketing, and management. A minor is optional, though many of our 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.

Production Emphasis

The production emphasis is designed for students interested in careers within the manufacturing production cycle of the apparel industry, such as with apparel manufacturers in design, drafting, quality control and plant supervision, with textile-producing companies as technicians or fashion analysts, or with pattern and notion companies. Students will select a required career option of Manufacturing, Computer-Aided Design (CAD), or Fashion Design. Individuals interested in fashion design should plan on including one year of study at the Fashion Institute of Technology in New York City during their junior year.

BACCALAUREATE WRITING REQUIREMENTS

Students who have chosen the merchandising emphasis will satisfy the Baccalaureate Writing Requirement by successfully completing BIS 340 Writing for Business. Students who have chosen the production emphasis will satisfy the Baccalaureate Writing Requirement by successfully completing CRT 524 Socio-Psychological Aspects of Clothing.

Merchandising Emphasis Requirements

Candidates for the Bachelor of Science degree must complete the following program of 122 semester hours.

CORE REQUIREMENTS — 18 hours

CRT 126 The Fashion Industry ........................................ 3
CRT 155 Design Principles ........................................... 3
CRT 220 Textiles ......................................................... 3
CRT 305 Professional Job Search Strategies ......................... 3
CRT 326 History of Costume .......................................... 3
CRT 524 Socio-Psychological Aspects of Clothing ............... 3

REQUIRED CRT COURSES — 39 hours

CCE 344 Teaching Methods for CTE .................................. 3
CCE 512 Principles of Career and Technical Education .......... 3
CCE 543 Work-Site Based Education Programs ................... 3

REQUIRED RELATED COURSES — 34 hours

CHEM 107* Chemistry, Textiles and Design ....................... 4
CS 105* Introduction to Computers ................................ 3
CRT 225 Computer Applications OR .......................... 3
IME 102* Technical Communications ............................ 3

Textile and Apparel Studies

Bachelor of Science Degree

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 of our 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.

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The production emphasis is designed for students interested in careers within the manufacturing production cycle of the apparel industry, such as with apparel manufacturers in design, drafting, quality control and plant supervision, with textile-producing companies as technicians or fashion analysts, or with pattern and notion companies. Students will select a required career option of Manufacturing, Computer-Aided Design (CAD), or Fashion Design. Individuals interested in fashion design should plan on including one year of study at the Fashion Institute of Technology in New York City during their junior year.

BACCALAUREATE WRITING REQUIREMENTS

Students who have chosen the merchandising emphasis will satisfy the Baccalaureate Writing Requirement by successfully completing BIS 340 Writing for Business. Students who have chosen the production emphasis will satisfy the Baccalaureate Writing Requirement by successfully completing CRT 524 Socio-Psychological Aspects of Clothing.

Merchandising Emphasis Requirements

Candidates for the Bachelor of Science degree must complete the following program of 122 semester hours.

CORE REQUIREMENTS — 18 hours

CRT 126 The Fashion Industry ........................................ 3
CRT 155 Design Principles ........................................... 3
CRT 220 Textiles ......................................................... 3
CRT 305 Professional Job Search Strategies ......................... 3
CRT 326 History of Costume .......................................... 3
CRT 524 Socio-Psychological Aspects of Clothing ............... 3

REQUIRED CRT COURSES — 39 hours

CCE 344 Teaching Methods for CTE .................................. 3
CCE 512 Principles of Career and Technical Education .......... 3
CCE 543 Work-Site Based Education Programs ................... 3

REQUIRED RELATED COURSES — 34 hours

CHEM 107* Chemistry, Textiles and Design ....................... 4
CS 105* Introduction to Computers ................................ 3
CRT 225 Computer Applications OR .......................... 3
IME 102* Technical Communications ............................ 3

Textile and Apparel Studies

Bachelor of Science Degree

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 of our 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.

Production Emphasis

The production emphasis is designed for students interested in careers within the manufacturing production cycle of the apparel industry, such as with apparel manufacturers in design, drafting, quality control and plant supervision, with textile-producing companies as technicians or fashion analysts, or with pattern and notion companies. Students will select a required career option of Manufacturing, Computer-Aided Design (CAD), or Fashion Design. Individuals interested in fashion design should plan on including one year of study at the Fashion Institute of Technology in New York City during their junior year.

BACCALAUREATE WRITING REQUIREMENTS

Students who have chosen the merchandising emphasis will satisfy the Baccalaureate Writing Requirement by successfully completing BIS 340 Writing for Business. Students who have chosen the production emphasis will satisfy the Baccalaureate Writing Requirement by successfully completing CRT 524 Socio-Psychological Aspects of Clothing.

Merchandising Emphasis Requirements

Candidates for the Bachelor of Science degree must complete the following program of 122 semester hours.

CORE REQUIREMENTS — 18 hours

CRT 126 The Fashion Industry ........................................ 3
CRT 155 Design Principles ........................................... 3
CRT 220 Textiles ......................................................... 3
CRT 305 Professional Job Search Strategies ......................... 3
CRT 326 History of Costume .......................................... 3
CRT 524 Socio-Psychological Aspects of Clothing ............... 3

REQUIRED CRT COURSES — 39 hours

CCE 344 Teaching Methods for CTE .................................. 3
CCE 512 Principles of Career and Technical Education .......... 3
CCE 543 Work-Site Based Education Programs ................... 3

REQUIRED RELATED COURSES — 34 hours

CHEM 107* Chemistry, Textiles and Design ....................... 4
CS 105* Introduction to Computers ................................ 3
CRT 225 Computer Applications OR .......................... 3
IME 102* Technical Communications ............................ 3
ECON 201 Principles of Economics 3
ACTY 210 Principles of Accounting 3
BIS 340 Business Communications 3
MGMT 300 Fundamentals of Management 3
MGMT 352 Personnel Management 3
MKTG 250 Marketing 3
MKTG 360 Professional Selling 3
MKTG 374 Advertising 3

Select six (6) hours from the following:

CRT 124 Apparel Construction 3
CRT 209 Consumer Education 3
CRT 230 CAD for Textiles and Apparel 3
CRT 405 Travel/Study Seminar 1-4
CRT 422 Apparel Manufacturing 3
CRT 429 Internship 3-6
CRT 522 Topics in CRT (TEX related) 3
CRT 598 Independent Study 1-6

GENERAL EDUCATION — 40 hours
Courses with * above apply toward this requirement.

PHYSICAL EDUCATION REQUIREMENT — 2 hours

ELECTIVES — Number of hours needed for graduation total.

Production Emphasis Requirement
Candidates for Bachelor of Science degree must complete the following program of 122 semester hours

CORE REQUIREMENTS — 18 hours
CRT 126 The Fashion Industry 3
CRT 155 Design Principles 3
CRT 220 Textiles 3
CRT 305 Professional Job Search Strategies 3
CRT 326 History of Costume 3
CRT 524 Socio-Psychological Aspects of Clothing 3

REQUIRED COURSE — 21 Hours
CRT 124 Apparel Construction 3
CRT 222 Flat Pattern Design I 3
CRT 230 CAD for Textiles and Apparel 3
CRT 224 Experimental Clothing Techniques 3
CRT 322 Flat Pattern Design II 3
CRT 324 Dressmaker Tailoring 3
CRT 422 Apparel Manufacturing 3

CAREER OPTION — 16-24 hours
Individuals must select a Career Option of either Manufacturing, CAD (Computer Aided Design) or Fashion Design.

REQUIRED RELATED COURSES — 22 hours
CHEM 107 Chemistry of Textiles and Design Media 4

ELECTIVES — 6 hours*
Choose six hours from the following:

CRT 124 Apparel Construction 3
CRT 226 Fashion/Retail Buying 3
CRT 326 History of Costume 3
CRT 329 Promotion of Textile and Apparel Products 3
CRT 430 Fashion Merchandising 3

* Of the 22 hour total, students must complete a minimum of 6 hours at the 300 level or higher.

Textile and Apparel Merchandising

REQUIRED COURSES — 12 hours
CRT 126 The Fashion Industry 3
CRT 155 Design Principles 3
CRT 220 Textiles 3
CRT 322 Flat Pattern Design II 3

REQUIRED RELATED COURSE — 4 hours
CHEM 107 Chemistry of Textiles and Design Media 4

ELECTIVES — 6 hours*
Choose six hours from the following:

CRT 124 Apparel Construction 3
CRT 226 Fashion/Retail Buying 3
CRT 326 History of Costume 3
CRT 329 Promotion of Textile and Apparel Products 3
CRT 430 Fashion Merchandising 3

* Of the 22 hour total, students must complete a minimum of 6 hours at the 300 level or higher.

Minors
Requirements
Students should consult with the department advisor to plan one of the following minors.

Family Life Education (Teaching)

REQUIRED COURSES — 24 hours
CRT 209 Consumer Education 3
CRT 210 Introduction to Human Sexuality 3
CRT 215 Adolescent Development 3
CRT 266 Food and Society 3
CRT 318 Intimate Relationships 3
CRT 410 Teaching of Sex Education in the School 3
CRT 415 Effective Parenting 3
CRT 124 Apparel Construction 3
CRT 524 Socio/Psych Aspects of Clothing 3

Textile and Apparel Merchandising

REQUIRED COURSES — 12 hours
CRT 126 The Fashion Industry 3
CRT 155 Design Principles 3
CRT 220 Textiles 3
CRT 322 Flat Pattern Design II 3

REQUIRED RELATED COURSE — 4 hours
CHEM 107 Chemistry of Textiles and Design Media 4

ELECTIVES — 6 hours*
Choose six hours from the following:

CRT 124 Apparel Construction 3
CRT 226 Fashion/Retail Buying 3
CRT 326 History of Costume 3
CRT 329 Promotion of Textile and Apparel Products 3
CRT 430 Fashion Merchandising 3

* Of the 22 hour total, students must complete a minimum of 6 hours at the 300 level or higher.

Food Occupations (Teaching)

REQUIRED COURSES — 24 hours
CRT 165 Food Science Principles 3
CRT 202 Field Experience 3
CRT 260 Nutrition 3
CRT 368 Quantity Foods 3
CRT 466 Institutional Management 4
CRT 598 Independent Study in Consumer Resources and Technology 1

ELECTIVE courses, if needed, to complete the 24 semester hours:

ACTY 201 Accounting Concepts and Application 3
MGMT 352 Personnel Management 3
ECON 201 Principles of Economics 3
PSY 100 General Psychology 3
SOC 200 Principles of Sociology 3

CTE 512 Principles of Career and Technical Education 3

Additional requirement:
4000 clock hours of relevant work experience in food service industry (within the past 5 years) which can be documented. 2000 of these hours may be completed in an equivalent directed supervised enrollment in CRT 202.

vocational education

Vocational Education
Bachelor of Science Degree

The vocational education teaching curriculum (VET) prepares students to qualify as vocational education teachers in Michigan Area Skill Centers and Secondary Institutions in selected subject areas of vocational education under the provisions of the Michigan State Plan for Vocational Education. Areas of vocational education that may be selected by a student are business education, secondary marketing education, home economics, vocational technical education, and health occupations.

Industrial Education Teaching Curriculum (IET) differs slightly in professional education course requirements as noted in the Industrial Education Teaching Curriculum requirements located earlier in the Department of Consumer Resources and Technology section.

Vocational Advising
The advisor is available to assist in individual program planning, recommend electives appropriate to the career objective of a vocational teacher, and discuss employment opportunities. Substitutions and transfer credit must be approved by the departmental vocational advisor.

 Majors
Secondary Education in Marketing
Home Economics Education
Vocational Technical Areas (Drafting, Graphic Arts, Metalworking, Power/Auto, and Woodworking)

Minors
Food Occupations
Occupational Child Care
Secondary Education in Marketing
Vocational Technical Areas (Drafting, Graphic Arts, Metalworking, Power/Auto, and Woodworking)
Vocational Certification in Business

Information about vocational certification to teach business or business education courses may be obtained by contacting the vocational coordinator at 387-3755.

Vocational Educational Teaching Curriculum

Requirements

Candidates for the Bachelor of Science degree and Vocational and/or Secondary Provisional certification must complete the following program requirements as well as University requirements stated elsewhere in this bulletin.

A. Minimum hours required for this curriculum—124 to 128 hours
B. General Education requirement—40 hours
C. Major Sequence—30 to 36 hours
D. TEACHABLE MINOR—20 hours
E. PROFESSIONAL VOCATIONAL EDUCATION—11 hours
F. Vocational Minors

EDU 402 Conference Leadership
EDU 421 Conference Leadership
PSY 100 General Psychology

F. PROFESSIONAL TEACHER EDUCATION—20 hours

CRT 214 Human Growth and Development
ED 301 The Teaching of Reading (Secondary) ED 302 Teaching and Learning (Secondary)
ED 410 Seminar in Education ED 475 Directed Teaching (Secondary)

G. ELECTIVES—Based on MAJOR SEQUENCE requirements

H. PHYSICAL EDUCATION—2 hours

I. BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Vocational Education major will satisfy the Baccalaureate Writing Requirement by successfully completing CTE 342 Curriculum Development in CTE.

Vocational-Technical Curriculum

Bachelor of Science Degree

Minimum hours required for this curriculum — 122 hrs.

Course Requirements

1. General Education Requirements — 35 hrs.
2. Mathematics (110 and 111) — 6 hrs.
3. Technical Major in one of the following areas — 30 hrs.
   A. Drafting
   B. Graphic Arts
   C. Metalworking
   D. Power/Automotronics
   E. Woodworking
4. Technical Minor in any one of the above areas other than the major — 20 hrs.
5. Option I (Vocational-Industrial Education leading to Secondary Teaching Certificate and Vocational Endorsement)*
   Professional Education Courses — 22 hrs.
   CTE 250 Human Growth and Development
   ED 301 Secondary Reading
   ED 302 Teaching and Learning Secondary
   ED 410 Seminar in Education
   ED 475 Directed Teaching Secondary
   Professional Vocational Courses — 9 hrs.
   CTE 342 Curriculum Development in CTE
   CTE 344 Teaching Methods for CTE
   CTE 512 Principles of Career and Technical Education
6. Option II (Technical Education without teaching certificate) — 30 hrs.
   CTE 342 Curriculum Development in CTE
   CTE 512 Principles of Career and Technical Education
   CTE 543 Work-Site Based Education Programs
7. Physical Education — 2 hrs.

*Vocational Endorsement requires 4,000 clock hours of work experience in the major or the minor.

VOCATIONAL TECHNICAL—20 hours

See the departmental advisor for planning courses in the areas of drafting, graphic arts, metalworking, power/automotronics, and woodworking.

Majors in non-vocational teacher preparation programs may earn vocational certification by completing one of the foregoing vocational minor sequences in consultation with the advisor.

Consumer Resources and Technology Courses (CRT)

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).

CRT 100 Career Seminar
1 hr.
Orientation to special career opportunities in various majors, featuring guest speakers. Specific sections per area of interest.

CRT 124 Apparel Construction (2-3)
3 hrs. Fall, Winter
Basic construction techniques, pattern alteration, fitting and design as related to the individual construction of garments. Text available for those desiring placement in upper level courses.

CRT 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 centers of fashion. An emphasis on designers, specialty fashion retailers, trends and auxiliary services is explored.

CRT 150 Introduction to Interior Design (2-3)
3 hrs. Fall, Winter
Basic study of the elements and principles of designing and furnishing interiors.

CRT 155 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.
CRT 156 Design Fundamentals 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.

CRT 157 Sketching for Interior Designers 3 hrs. Fall
Development of freehand drawing skills pertinent to interior designers by emphasizing non-mechanical perspective, controlled line quality and presentation. Prerequisites: CRT 156 and ET 149

CRT 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.

CRT 161 Animal Industry (4-0) 4 hrs. Fall
Fundamental concepts of livestock and poultry production in the United States. An introduction to types, breeds, selection, and management of livestock and poultry.

CRT 165 Food Science Principles (2-3) 3 hrs. Fall
Relationship of food science principles to basic food preparation techniques. Prerequisite: CHEM 101

CRT 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.

CRT 205 Topics in Consumer Resources and Technology 1-3 hrs. Fall, Winter, Spring
Individual topics in flexible/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.

CRT 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 service choices, and consumer protection.

CRT 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.

CRT 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).

CRT 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: CRT 214

CRT 220 Textiles (3-0) 3 hrs. Fall, Winter
Consumer-oriented textiles emphasizing fibers, yarns, fabric constructions and finishes as related to use, serviceability, and care.

CRT 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: CRT 124, Completion of Computer Literacy requirement.

CRT 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: CRT 124.

CRT 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.

CRT 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.

CRT 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.

Introduction to the use of CAD software as applied to preproduction tasks in manufacturing of textile and apparel products. Prerequisites: CRT 225 or CS 105.

CRT 250 Interiors CAD Application 3 hrs.
Introduction to computer-aided design and drafting for interior design majors. Prerequisites: CRT 150, CRT 225.

CRT 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.

CRT 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.

CRT 254 Interior Design Materials 3 hrs. Fall
A study of products and finishing materials for the interior environment which considers basic materials, manufacturing processes and the generic characteristics of goods specified by the interior designer. Prerequisites: CRT 150, CMD 149.

CRT 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: CRT 157 and CRT 254, and IME 349.

CRT 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 101 or BIOS 167 or BIOS 112.

CRT 261 Agronomy (Crop Production) (4-0) 4 hrs. Fall, Winter
The principles of crop production, management, breeding, weed control, and crop quality are considered as they relate to field crops.

CRT 266 Food and Society (3-0) 3 hrs. Fall, Winter
Study of the effects of culture and environment on the problems of food production and meeting nutrient needs in Western and non-Western countries.

CRT 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.

CRT 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.

CRT 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: CRT 155.

CRT 322 Flat Pattern Design II (5-0) 3 hrs. Winter Even Years
A study of advanced drafting techniques, including computer-aided designing, employed in the flat pattern method for designing clothing. Prerequisite: CRT 222.

CRT 324 Dressmaker Tailoring (2-3) 3 hrs. Winter
Construction of tailored garments using time-saving methods. A minimum of two garments will be completed. Prerequisites: CRT 124, CRT 224, or consent of instructor.

CRT 326 History of Costume 3 hrs.
Survey of the development of costume throughout history and its relationship to contemporary fashion.

CRT 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: CRT 126, CRT 155.

CRT 350 Textiles for Interiors (3-0) 3 hrs. Fall
Evaluation and analysis of carpets, drapery and upholstery fabrics, and decorative fabric products with regard to quality, selection, performance, and maintenance for home and office. Special attention devoted to material estimating and installation. Prerequisite: CRT 150, CRT 156, CRT 220.
CRT 351 Contract Design I (2-3) 3 hrs. Winter
Introduces the design of the business environment. Concentrates on offices and the use of systems products. Prerequisites: CRT 255, CRT 350, and IME 349 (CRT 255 and CRT 350 may be taken concurrently with CRT 351).

CRT 352 Professional Practices 3 hrs. Winter
An analysis of the professional procedures and practices used in the interior design industry. A survey of the diversified career opportunities in both residential and commercial fields. Prerequisite: CRT 351.

CRT 359 Visual Design Techniques (1-6) 3 hrs. Winter
Course involves the designing or specifying of store furnishings, fixtures and lighting necessary in coordinating exhibits. Course also addresses signage development, prop construction, showroom design and layout. Prerequisites: CRT 255.

CRT 361 Introduction to Soils (4-0) 4 hrs. Fall, Winter
The origin and development of soils as natural entities with certain inherent characteristics. Basic relationships between soils and plants and the principles involved in the practical use and conservation of the soil. Prerequisite: CHEM 100 or one unit H.S. Algebra and Chemistry.

CRT 362 Landscape Gardening (3-0) 3 hrs. Winter or Spring
Care and planting of trees, flowers and shrubs, lawn establishment and care, identification and selection of planting materials.

CRT 363 Landscape Design (3-0) 3 hrs. Winter or Spring
Emphasis in this course will be placed on the environmental approach to landscaping. This concept considers the relationship between a house and its lot and consequently their relationship to the neighborhood, the community, and ultimately the whole region.

CRT 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 reclamation and the principles involved in the productivity of our lands.

CRT 365 Agricultural Management (4-0) 4 hrs. Winter
A study of the management of agricultural businesses, from those entities supplying inputs to food and fiber producers to those buying and handling their products.

CRT 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: CRT 165, CRT 260.

CRT 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.

CRT 410 Teaching Sex Education in the School (3-0) 3 hrs. Fall, Winter, Spring
Methods, materials and curriculum development at various grade levels in sex education in the school program. Prerequisite: CRT 210 or approval of the instructor.

CRT 413 Marriage and Family in Maturity (3-0) 3 hrs. Fall
Mental and family interaction in middle and later years.

CRT 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.

CRT 422 Apparel Manufacturing 3 hrs.
The study of garment manufacturing, including the decision making involved in producing apparel. Prerequisite: CRT 222.

CRT 429 Internship 3-6 hrs.
On-the-job supervised experience. Specific sections per area of interest. Prerequisite: Department junior or senior. This course is graded on a credit/no credit basis.

CRT 430 Fashion Retailing 3 hrs.
Retailing competencies of profit, economics, merchandising space allocation, supervision, pricing, inventory control, advertising, and legal and ethical considerations with an emphasis on application in fashion and apparel retail settings. Prerequisites: Junior or senior standing.

CRT 450 Residential Design I (1-6) 3 hrs. Fall
Creation of artistic home interiors with materials of interior design, including the preparation of renderings and purchasing data for residential work. Prerequisites: CRT 252, CRT 350, CRT 359.

CRT 451 Contract Design II (1-6) 3 hrs. Winter
Continues investigating the design of business/commercial interiors with an emphasis on the total design process in developing complex architecturally oriented projects. Prerequisites: CRT 351.

CRT 459 Senior Studio (1-6) 3 hrs. Winter
Capstone course in investigation and execution of special projects and projects in the field of interior design. Prerequisite: CRT 450 which may be taken concurrently.

CRT 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 Student Health Center’s Weight Control Program. Prerequisites: CRT 260, BIOS 240, CHEM 365.

CRT 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: CRT 460, dietetic major or consent of instructor.

CRT 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.
Career and Technical Education Courses (CTE)

- CTE 342 Curriculum Development in Career and Technical Education
  3 hrs. Fall
  Principles of analyzing, selecting, and arranging curriculum for instructional purposes in career and technical education.
- CTE 344 Teaching Methods for Career and Technical Education
  3 hrs. Winter
  Analysis of the teaching-learning process in career and technical education. Included are the teacher’s roles, lesson planning, teaching methods, evaluation techniques, and classroom management.
- CTE 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 542 Advanced Curriculum Development
  2 hrs.
  Social, political, and economic factors which influence curriculum change, curriculum innovations, trends, implementation, and evaluation.
- CTE 543 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.

COUNSELOR EDUCATION AND COUNSELING PSYCHOLOGY

- Alan J. Hovestadt, Chair
- Michael W. Bahm
- Robert L. Betz
- Karen R. Blaisure
- James M. Croteau
- John S. Geisler
- Arlen R. Gullickson
- Suzanne M. Hedstrom
- Joseph R. Morris
- Theresa A. Powell
- Diane K. Swartz
- Donna M. Talbot
- Edward L. Trembley
- Melanie A. Wannke

The Department of Counselor Education and Counseling Psychology offers professional education in the fields of counseling psychology, community agency counseling, counselor education and supervision, student personnel services in higher education, and school counseling and guidance. Most of the courses are open to graduate students only, but the following courses are open to qualified undergraduates.

Counselor Education and Counseling Psychology (CECP)

- CCEP 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. Significant attention is devoted to treating racial minorities, women, gay/lesbian/bisexuals, older adults, persons with various religious affiliations, and the disabled within the context of Employee Assistance Programs. Open only to Employee Assistance Academic Program majors.
- CCEP 583 Workshops in Counselor Education and Counseling Psychology
  1-4 hrs.
  Workshops designed to enhance skill development related to Counselor Education and Counseling Psychology practices. Open to all students, but is not intended for counseling majors. May be repeated for credit.

EDUCATION AND PROFESSIONAL DEVELOPMENT

- Jeanne M. Jacobson, Interim Chair
- Ariel Anderson
- DeWayne Anderson
- James Bosco
- James Burns
- Joe R. Chapel
- Ronald A. Crowell
- Suzanne Davis
- David Dynak
- Janet Dynak
- Paul Farber
- Franklin Fisk
- Richard Harrig
- Gunilla Holm
- Lynn Nations Johnson
- Robert Kotecki
- Regina Fails Nelson
- Sandra Odell
- Gerald Pilbury
- Tom Ray
- Andrea Smith
- Carol Payne Smith
- Paul Wilson

Courses are designed to meet the professional needs of the student preparing to teach. All students pursuing a curriculum for a secondary provisional certificate and a degree are required to complete the prescribed elementary education program. Students must contact the Office of Admissions and Advising, 2504 Sangren Hall, to be admitted to the teacher education curriculum. Once admitted, the student will be assigned an advisor who will assist the student in program planning and scheduling the sequence of courses, including directed teaching.

Education and Professional Development Courses (ED)

- ED 103 Critical and Creative Reading
  2 hrs.
  Designed to develop practical application of principles of critical reading through extensive use of content area textbooks. Course will stress author’s purpose, summarizing, and outlining for academic efficiency.
- ED 104 Effective Reading for College Students
  2 hrs.
  Designed to provide the student with skills in vocabulary development, comprehension, and reading efficiency. Attention is given to the effective use of text and reference books in academic subjects, inferential reading, and synthesis of main ideas. Credit for this course will not apply to the number of credits needed for graduation. Course is graded on a credit/no credit basis.
- ED 106 Effective College Reading for International Students
  2 hrs.
  This course focuses on vocabulary development and comprehension, including an emphasis on correct pronunciation, word analysis, factual and inferential thinking, and synthesis of ideas. Course is graded on a credit/no credit basis. Prerequisite: Results of TOEFL or MTELPT.
This course is designed to explore some of the major educational issues that have provoked public debate and institutional reform in America. The purpose of the course is to achieve an understanding of these issues and the functions of education through the use of historical, sociological and philosophical concepts. The course provides an opportunity for pre-education students to explore their interest in education and teaching.

ED 230 The Nature of Creativity 3 hrs.
This course explores the nature of creativity—its processes, its products, its characteristics, its values, and its relationship to humankind. Growth in aesthetic sensitivity, personal interaction, self-confidence, and ability to solve problems creatively are the objectives of this course. Open to all students.

ED 250 Human Development 3 hrs.
This course traces the psychological and social development of human beings from conception through adolescence. Consideration is given to those factors which facilitate or inhibit normal progress in the areas of physical, emotional, social, intellectual, and moral development. Attention is also given to the development of the self-concept for purpose of helping students to become more aware of themselves and of their relationships with others. Students are required to observe human beings at different stages of development in a variety of cultural settings.

This course focuses on the physical, social, emotional, and cognitive development of the child, birth through 12 years. Special attention is given to cognitive development viewed in a Piagetian framework. Applications to the teaching of language arts are emphasized.

ED 300 The Adolescent and School Learning 3 hrs.
This course aims to have students see adolescents as unique individuals and understand the variety of forces acting upon middle and secondary students. Students examine adolescents as a contemporary social and psychological phenomenon; employ cognitive, self, and narrative psychology; consider cultural differences and the relationship of the learner. Critical thinking skills are emphasized in the analysis of theories and descriptions of adolescence. Prerequisites: ED 250 and admission to Secondary Education program.

ED 301 Secondary Content Literacy 3 hrs.
This course explores content literacy as it relates to the acquisition of new knowledge in various subject areas. Students will apply the cognitive components of content literacy through assessment of learners and subject area materials, as well as instructional procedures designed to meet the needs of diverse students. Requires participating in a secondary classroom for a minimum of two class periods three days per week. Must be taken concurrently with designated ED 302 section. Prerequisite: ED 300.

ED 302 Teaching and Learning in the Secondary School 4 hrs.
This course is designed to prepare students for the responsibilities of classroom instruction. Emphasis is placed on writing clear outcome statements for instruction, designing learning activities which motivate students and enable learners to retain information and transfer learning; and designing assessment strategies. Must be taken concurrently with designated ED 301 section. Requires participation in a secondary school classroom. Prerequisite: ED 300 for College of Arts and Sciences major(s) only.

ED 303 Organization and Management in Education 3 hrs.
Students will study the organizational and management challenges that secondary teachers face. Students will engage in a critical examination of current school and classroom organization and management models, methods, and strategies in middle and high schools. Prerequisites: ED 300, ED 301, and ED 302.

ED 309 Educational Psychology of Early Childhood 3 hrs.
This course will develop an understanding of how children learn, from birth through early adolescence. Emphasis will be placed on the learning styles of young children, aged 0 through 9. Emphasis will be placed on major learning theories, on the growth of positive self-concepts, and on the cognitive styles of these age levels. Students will examine the effects of cultural and gender differences and of discrimination on learning. Taken in conjunction with ED 312. Prerequisite: Admission to the Early Childhood Emphasis or minor.

ED 310 Educational Psychology of Childhood 3 hrs.
This course will develop an understanding of how children learn, from birth through early adolescence. Emphasis will be placed on major learning theories, on the growth of positive self-concepts, and on the cognitive styles of these age levels. Students will examine the effects of cultural and gender differences and of discrimination on learning. Taken in conjunction with ED 312. Prerequisite: Admission to professional program in education.

ED 312 The Foundations of Reading Instruction 3 hrs.
This course will provide students with the foundations of reading instruction in the United States. Summarized and presented in current research on 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 school structure, also will be presented. Prerequisite: Admission to professional program in education. Taken in conjunction with ED 309 or ED 310.

ED 347 Technology for Elementary Education 2 hrs.
This course will provide a survey of critical use of technology appropriate for elementary education and will enable students to acquire basic skills in producing and using computers, video, and other instructional technologies in educational applications. Concurrent enrollment with ED 351 is encouraged.

ED 350 Young Children, Their Families, and Their Society 3 hrs.
A study of the effects of family, peer group, and society on the development of young children. Emphasis will be placed on family styles and child-rearing practices and their effects on learning and other behavior. Family communication, the learning of sex roles, the effects of divorce, and similar phenomena will be studied. Consideration will be given to the effects of cultural and subcultural differences on early childhood development and students will look at the contemporary American scene as it affects young children. Prerequisite: ED 250, admission to the Early Childhood Emphasis or minor.

ED 351 Literacy Development 3 hrs.
Course topics include the study of language development, emergent literacy, 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 materials to aid comprehension and vocabulary development, strategies for improving study processes, and methods of analyzing and evaluating students’ progress. Integration across content areas, and integration of literature and language arts within content areas, are stressed. Designed for students seeking K-8 certification. Participation will be required in school settings. Prerequisites: ED 312. Elementary Education Minors must complete ED 351 prior to registering for ED 352.

ED 359 Early Childhood Classroom Organization and Management 3 hrs.
Students will examine and apply recent research on effective classroom management, concentrating on such variables as time on task, appropriate choice of group structures and direct instruction; the management of time, space, and materials; and the analysis of classroom interactions. Students will design, implement, and evaluate an integrated curriculum and will learn management principles designed to minimize “discipline problems.” Micro-teaching experiences and a supervised teaching practicum will give each student the opportunity to apply research on effective teaching and to become an effective classroom manager. Emphasis will be placed on organization and management in early childhood classrooms and on appropriate learning experiences for young children. 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, rules and alternatives, and the analysis of classroom interactions. Students will design, implement, and evaluate an integrated curriculum and will learn management principles designed to minimize “discipline problems.” Micro-teaching experiences and a supervised teaching practice will give each student the opportunity to apply research on effective teaching and to become an effective classroom manager. Requires a minimum of one (1) day per week participation in a classroom. Prerequisite: ED 309 or ED 310.

ED 395 School and Society

3 hrs.

This course is concerned with the nature and direction of American education in its changing social context. The course focuses on major issues affecting the advancement of education in a culturally diverse, democratic society. Course content includes inquiry as to how social, political, philosophical, economic, and legal factors influence educational policy and practice. The role of individuals in the change process in education is examined. An interdisciplinary approach is used. Prerequisite: Minimum of 70 earned semester credit hours. This course satisfies the University's baccalaureate level writing requirement.

ED 398 Special Studies in Education

1-6 hrs.

With variable topics and variable credit, this course is designed for undergraduates who, by virtue of 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. This 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 subtitle. Note that the use of 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 give the student classroom teaching and observation experiences on a regular basis. In addition to the required classroom participation of two half-days per week, the student will meet periodically in a seminar 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 in the selection 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 working with individuals, groups, and the total class will be emphasized. Multicultural and non-sexist content and strategies will be emphasized. Prerequisite: ED 309 or ED 310; ED 312; GEOG 102 or HIST 211 or PSCI 200, minimum of 75 earned credit hours. Offered fall and winter semesters only.

ED 410 Seminar in Education

1-2 hrs.

The seminar will be directly related to the students' classroom experiences. It will further the study of reading 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 responsibilities related to practice professional ethics. It is in the seminar that the ongoing Teaching Portfolio will be completed and reviewed by a faculty committee. Must be taken concurrently with ED 470/471 or ED 475.

ED 430 Creativity in the Elementary School

4 hrs.

A synthesis of the principles developed in the Integrated Creative Arts Minor as applied to teaching and learning at the elementary school level. Emphasis is placed on the integration of creative processes in elementary school curriculum and instruction, on the teacher as problem solver, and on the creation of structures which accommodate individualization of instruction and creative problem solving in children. Prerequisite: Completion of all other courses in minor.

ED 460 Integrated Language Arts Seminar

4 hrs.

This course will focus on synthesizing theories, combining different 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 integration of the language arts processes in the elementary school. Students will pursue individualized programs culminating in a guided field experience through which students will demonstrate identified program competencies. Student- and faculty-led seminars will be scheduled periodically throughout the course.

ED 470 Intern Teaching: Early Childhood

5 hrs.

Only for seniors who have been admitted to teacher education and completed all their professional studies courses. This will be the final field experience consisting of five days per week in 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 or 10 hrs.

Only for seniors who have been admitted to teacher education and completed all their professional studies courses. This will be the final field experience consisting of five days per week in 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 teach. Prerequisite: 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

1 hr.

This course develops specific professional skills related to current school responsibilities of teachers and other school personnel. May be repeated but only three credit hours may be applied to graduate programs within the Department of Education and Professional Development. Topics included in a department program must be approved in advance of registration by the program advisor. Credit/No credit only.

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 several specialists, library and laboratory facilities, field trips, audiovisual materials, and the like. Each offering of 502, Curriculum Workshop, will be given an appropriate subtitle, which will be listed on the student's official transcript. Students may earn up to three hours of credit for any given subtitle. No more than six hours of 502 may be applied toward a Master's degree.

ED 503 Educational Technology Academy

1-3 hrs.

An organized group of workshops designed to permit students to update knowledge and skills in current educational technology and apply this learning for use in educational programs for students in pre-kindergarten through college programs. Such applications include methods of using computer, video and audiovisual technologies in literacy development, content area programs, instructional management, and the arts, as well as others appropriate to preservice and inservice professions. The courses presumes subject matter knowledge on the part of the students. Normally scheduled in one-credit-hour blocks, the ETA offerings bring students with specific needs, instructors with unique expertise and facilities with appropriate resources together for intensive and highly-focused learning experiences. The workshops are offered on weekends during the regular year, and on a weekday basis during the summer.
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 wellbeing and problem solving will be studied.

ED 506 Teaching in Adult Education 3 hrs.
This course is designed to provide teachers with a knowledge of special situations which occur in the teaching of adults. It will include also are techniques of interpersonal communication with adults, as well as a practical exercise in the designing of learning experiences for adults. Emphasis will be made on audiovisual media, experts in the field, and field observation in adult learning activities. The course should be helpful to administrators in planning inservice programs for their own staff.

ED 508 Seminar in Parent Education 2 hrs.
Emphasis will be placed on cooperative problem-solving between parents and teachers of school-age children and youth. Problems considered will include such topics as grief and loss through death, divorce, or separation; special needs and contributions of multicultural parents; parents as resource persons and paraprofessionals in the schools; and problems identified by members of the seminar. Members of the seminar will report to the current literature available through libraries and community resources and work toward potential solutions of problems.

ED 516 Professional Symposium in Reading 3 hrs.
This course is designed to be the initial course in the graduate program in reading. It is designed to present the basic concepts concerning the nature of the reading process and the teaching of reading. Emphasis will be placed on reading as a thinking process and on factors affecting reading performance. Special emphasis will be placed on child development, language development, concept development, physical, psychological, and environmental factors affecting the child's learning to read. In addition, the course will provide a brief overview of the delivery systems and procedures used in the U.S. to teach reading. This will involve an historical overview as well as current and potential future practices.

ED 548 Instructional Technology I 3 hrs.
This course provides for the development of knowledge and skills required to make use of information and communication technologies as instructional tools. Use of instructional technology will be considered within a context of relevant research and theory pertaining to human learning. Various technologies used to produce, present, and distribute instruction, such as computers, camcorders, CD ROM, CDI (compact-disc interactive), video editing equipment, scanning and digitizing equipment, satellite and cable, etc. will be examined. Corresponding software used for production and presentation will also be examined, and skills in using such software acquired. Particular emphasis will be placed on interactive technologies. Students will have hands-on experiences pertaining to the evaluation, selection, and implementation of media in teaching and learning settings.

ED 549 Instructional Technology II 3 hrs.
This course is intended to extend basic skills and understandings acquired in Instructional Technology I or in other comparable experiences. Emphasis will be placed on the production of instructional media. Students will be expected to produce one proto-typical application of interactive media which could be used in an instructional setting. The course will also examine the use of instructional technology with the roles, rules, procedures, and customs of the organization. Students will also examine emerging technologies which are expected to have impact on how teaching and learning occur in our society.

ED 597 Reading and Related Language Experiences 3 hrs.
This course involves a study of the current research on aspects of language which are involved in the process of effective reading. It is intended to provide students with a thorough understanding of the research in language and its application to the reading process. It also is intended to help students understand more fully the place of reading in a total language arts program and to give students an opportunity to make application to practical classroom situations.

ED 598 Selected Reading in Education 1-4 hrs.
Designed for highly qualified students who wish to study in-depth some aspect of their field of specialization under a member of the departmental staff. Prerequisite: Written consent of departmental advisor and instructor.
The professional programs are based on the concepts of (1) a balanced preparation that enables the student to later specialize at the graduate level, (2) exposure to practical experiences throughout the professional sequence, (3) elective choices of specific courses, and (4) continual review of curricular offerings by students and faculty. Students who desire specialized professional preparation may select from the following:

MAJORS
1. Health Education
   A. School Emphasis
   B. Community Emphasis
2. Physical Education
   A. Teacher-Coach Emphasis
   B. Exercise Science Emphasis
3. Recreation

MINORS
1. Teaching Certification/Endorsements
   A. Health Education
   B. Physical Education
      1. Elementary
      2. Secondary
   C. Special Physical Education
2. Non-Teaching
   A. Athletic Training
   B. Coaching
   C. Recreation
   D. Community Health Education

The professional student is expected to work closely with a departmental advisor during his/her years on campus. 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 during first semester 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.

General Education Requirement
Each student must complete 35 hours of work in approved General Education courses and/or non-professional courses in the College of Arts and Sciences. The student seeking Michigan teacher certification must complete an additional 5 hours in the College of Arts and Sciences.

Undergraduate Program Admission Policy
All students who intend to complete a major or minor degree offered by the Department of Health, Physical Education, and Recreation must apply to the department for admission to the program. An application for admission may be obtained in the HPER Department Office located in the fourth floor of the Student Recreation Center. Students must complete the following requirements prior to application:
1. Completion of 60 credit hours (transfer hours included).
2. Completion of all requirements included in PEPR 150 (Physical Education Teacher-Coach and Exercise Science majors, Secondary, elementary and special physical education teaching minors) or PEPR 155 (Health Education majors, Community Health Education majors and minors) or PEPR 170/270 (Recreation majors/minors) with a grade of "C" or better. Students who transfer an equivalent course must report to PEPR 150, 155, or 170 during the orientation sessions of the course at least one semester prior to application to the HPER Department.
3. Completion of departmental teaching assistantship requirement (Physical Education Teacher-Coach majors/minors and Exercise Science majors, only).
4. 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 100. 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.
5. 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 prerequisite work 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 295 Biomechanical Analysis
PEPR 312 AD/MD Instructional Systems
PEPR 313 Issues in Health Education
PEPR 320 Community Health Education I

Majors
Health Education Major
45 credit hours
Bachelor of Science Degree

The major in health education allows students to choose one of two professional preparation options:
1. School emphasis
2. Community emphasis

Successful completion of the school emphasis makes the student eligible for K-12 certification for the teaching of health education in Michigan. Students must complete the education sequence required by the Department of Education and Professional Development including the 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 Requirements
Students who have chosen the Health Education major—School Emphasis will satisfy the Baccalaureate Writing Requirement by successfully completing ED 396 School and Society.

Students who have chosen the Health Education major—Community Emphasis will satisfy the Baccalaureate Writing Requirement by successfully completing PEPR 430 Community Health II.

COURSE REQUIREMENTS .............. Hrs.

GENERAL EDUCATION
School emphasis ................. 40 hours
Community emphasis .............. 35 hours

HEALTH EDUCATION—SCHOOL EMPHASIS
Physical Education ................. 2 hours
Required Cognates ................. 10 hours

PSY 100 General Psychology
OR
PSY 150 Introduction to Human Behavior

SOC 200 Principles of Sociology
RECOMMENDED ELECTIVES FOR HEALTH EDUCATION-SCIENCE EMPHASIS 17 hours

BIOS 507 Biology of Addictive Drugs 3
BIOS 512 Environment and Health Problems 3
BIOS 531 Biology of Aging 3
COM 170 Interpersonal Communication I 3
COM 200 Introduction to Communication Theory 3
COM 370 Interpersonal Communication II 3
CRT 209 Consumer Education 3
CRT 318 Intimate Relationships 3
PEPR 300 Seminar Series: Health Competencies 1-4
PEPR 316 Health Issues 3
*PEPR 330 Community Health I 3
PEPR 390 Exercise Physiology 2
SOC 122 Death and Dying 3
SOC 373 Sociology of Health/illness 3
SOC 390 Marriage and Family Relations 3
SOC 412 Child Abuse 3
SOC 490 Social Context of Sexual Behavior 3
SOC 552 Sociology of Aging 3

HEALTH EDUCATION—COMMUNITY EMPHASIS

Physical Education 2 hours

Required Cognates 10 hours

PSY 100 General Psychology 3

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 31-37 hours

PEPR 155 Introduction to Health Education 3
PEPR 181 First Aid 2
CRT 210 Sex Education 3
*PEPR 220 Basic Health Concepts I 3
*PEPR 221 Basic Health Concepts II 3
CRT 260 Nutrition 3
*PEPR 312 Adm/Dev of Instructional Systems 2
PEPR 316 Topics in Health Education 2
*PEPR 330 Community Health Education I 3
PEPR 392 Measurement and Evaluation 2
*PEPR 400 Field Experience in Community Health 1-8

*PEPR 430 Community Health Education II 3
Electives 8-15 hours

Elective courses required for community health education majors will be fulfilled by selecting appropriate courses from the list below with the consent of a department advisor. The department from which the electives are selected should differ from the student’s minor course of study.

PEPR 316 Any 361 offered 2
HHS 569 AIDS. Natural History of an Epidemic 3
SOC 373 Sociology of Health and Illness 3
BIOS 507 Biology of Addictive Drugs 3
PSY 300 Statistics for Behavioral Sciences 3
PSY 426 Human Drug Use and Abuse 3
BIOS 512 Environment and Health Problems 3
COM 484 Health Communication 3
CRT 318 Intimate Relationships 3
HOL 531 Introduction to Holistic Health 3
HOL 533 Holism and Community 3
MGMT 453 Organizational Behavior 3
PHIL 410 Professional Ethics 3
PSY 344 Organizational Psychology 3
SOC 122 Death, Dying and Bereavement 3
SOC 352 Introduction to Social Gerontology 3
SOC 373 Sociology of Health and Illness 3
PEPR 300 Seminar Series: Health Competences 1-4
*PEPR 390 Physiology of Motor Activity 2
*PEPR 490 Adult Fitness and Exercise Prescription 2

Restricted courses, pre-requisites required

Physical Education Major

45 credit hours

Bachelor of Science Degree

The major in physical education allows the student to choose one of two professional preparation options: 1. Teacher-Coach Emphasis 2. Exercise Science Emphasis

Successful completion of the Teacher-Coach emphasis makes a student eligible for K-12 certification for the teaching of physical education in Michigan. Students must complete the education requirements by the Department of Education and Professional Development including the intern teaching experience. HPER major and minor students must serve as a teaching assistant for one semester in a general physical education course during their first 60 hours at Western Michigan University. In addition, students must complete a minimum of 10 clock hours of observation and participation in both elementary and secondary public schools as well as an extensive lab experience with exceptional children.

The Exercise Science emphasis prepares students to assume careers in non-school settings such as corporate, public, and commercial adult fitness programs. Students complete two extensive practica in supervised settings on campus prior to an internship. Students completing the Exercise Science emphasis are not eligible for teaching certification.
BIOS 240 Human Physiology .......... 4
PEPR 100 Health-Better Living .......... 4

Professional Core Requirements .......... 21
PEPR 150 Foundations of Physical Education and Exercise Science .......... 3
PEPR 181 First Aid .......... 2
*PEPR 295 Biomechanical Analysis of Activity .......... 2
PEPR 322 Physical Activities for Students with Special Populations .......... 2
*PEPR 345 Nature and Bases of Motor Skills .......... 2
*PEPR 390 Physiology of Motor Activity .......... 2
PEPR 392 Measure and Evaluation in HPER .......... 2
*PEPR 444 Administration and Development of Instructional Systems in Physical Education (PEX) .......... 2
*PEPR 445 P.E. Teaching Skills and Strategies (PEX) .......... 2
*PEPR 450 Cultural Bases of Physical Education .......... 2

Theory Emphasis Requirements .......... 12-13
*PEPR 380 Foundation of Sports Injuries .......... 2
*PEPR 490 Adult Fitness—Exercise Prescription .......... 2
PEGR 500 Studies in HPER—Business Procedures .......... 2
PEGR 516 Issues in Health—Cardiovascular Health .......... 2
PEGR 572 Recreation for the Aging .......... 2
PEGR 400 Field Experience/Internship in Exercise Science .......... 2-3

Activity Emphasis Requirements .......... 9
PEPR 102 Cycling Relaxation/Stress Management .......... 1
PEPR 106 Recreational Dance .......... 1
PEPR 405 Field Education Training .......... 1
PEPR 210 Racquet Sports .......... 1
PEGR 166 Aquatics (at level) .......... 2
PEPR 215 Aerobic Conditioning .......... 1
PEPR 305 Golf Archery Bowling .......... 1
PEGR 252 Swimming Conditioning .......... 1

Electives .......... 2
In consultation with advisor
PEPR 242 Aerobic Dance Instruction .......... 2
PEPR 480 Basic EKG .......... 1

Required Teaching Assistant N/C

*Restricted courses, pre-requirements required

Recreation

45 credit hours
Bachelor of Arts Degree or
Bachelor of Science Degree

The Recreation major is designed to prepare students to assume leadership and/or administrative roles in public or private recreation agencies and organizations. The hours of electives within this course of study allow the student flexibility in preparing for a specific emphasis area in recreation. Students will also complete a supervised internship of at least three consecutive months duration.

BACCALAUREATE WRITING REQUIREMENTS

Students who have chosen the Recreation major will satisfy the Baccalaureate Writing Requirement by successfully completing PEPR 450 Cultural Bases of Physical Education.

HOURS REQUIRED .......... 122
General Education Courses .......... 35

Physical Education .......... 2

Required Professional Courses .......... 29
(please note in course descriptions when courses are offered and the suggested sequence of course work)
PEPR 170 Introduction to Recreation .......... 3
PEPR 178 Playground Administration* .......... 2
PEPR 181 First Aid .......... 2
PEPR 270 Recreation Leadership (Prerequisite 170) .......... 2
PEPR 372 Recreation Programming (Prerequisite 270) .......... 3
PEPR 370 Recreation Administration (Prerequisite 372) .......... 3
PEPR 375 Organization and Administration of Recreation .......... 3
PEPR 470 Recreational Facilities and Areas 3*
PEPR 400 Internship in Recreation .......... 8

Elective Courses .......... 16

*Advisor will arrange a substitute course.

Group I: Program Skills
Aquatics Area (Not more than 4 courses)
PEN 349 Lifeguard Training .......... 2
PEN 350 Water Safety Instructors .......... 2
PEN 107 Canoeing .......... 1
PEN 141 /241 Sailing .......... 1
Sports Area (Not more than 8 courses)
PEN/PGR Team Sports (Not more than 4—no repeats) .......... 4
PEN/PGR Ind. and Dual Sports (Not more than 4—no repeats) .......... 4
PEPR 256 Sports Officiating (Not more than 4) .......... 4
PEPR 337 Adv. Techniques and Coaching (Not more than 2) .......... 4

Arts and Crafts Area (Not more than 4 courses)
ART 201 (104) Drawing .......... 3
ART 206 Ceramics .......... 3
ART 207 Jewelry .......... 3

Music and Drama Area (Not more than 4 courses)
MUS 140 Music for the Classroom Teacher .......... 3
MUS 289 Music Therapy Children .......... 2
MUS 290 Music Therapy Adults .......... 2
PEPR 106 Recreational Dance
COM 564 Creative Drama for Children .......... 4
THEA 100 Intro. to Theatre .......... 3

Outdoor Skills Area (Not more than 4 courses)
PEN 106 Canoe Camping .......... 1
PEN 108 Backcountry BC Keskey .......... 1
PEN 110 Cross-Country Ski Camp .......... 1
PEN 135 Outdoor Challenge .......... 1
PEN 143 Cross Country Skiing .......... 1
PEN 167 Winter Camping .......... 1
PEPR 172 Camp Leadership .......... 3
PEPR 276 Outdoor Education .......... 2
BIOS 234 Outdoor Science .......... 4
BIOS 105 Envir. Biology .......... 3

Group II: Administrative Skills
Not more than four courses
PEPR 368 Organization and Administration of Intramurals .......... 2
COM 104 Public Speaking .......... 3
COM 335 Leadership .......... 3
COM 549 Public Relations/Organizations .......... 3
COM 550 Public Relations/Program Management .......... 3
GEOG 204 National Park Lands .......... 3
GEOG 350 Conservation/Environmental Management .......... 3
BIS 388 Records Management .......... 2
BIS 560 Office Management .......... 3
BIS 142 Business Communications .......... 3
BIS 102 Intro to Information Processing .......... 3

ACCT 201 Accounting .......... 3
GEOL 312 Geology of National Parks and Monuments .......... 3
GEOL 544 Environmental Geology .......... 3
ECON 319 Environmental Economics .......... 3
CRT 563 Landscape Design .......... 3

Group III: Community Organization Skills
Not more than four courses
PEPR 316 Issues in Health Education .......... 2
COM 232 Discussion .......... 3
COM 482 Communication Processes in the Organization .......... 3
SWRK 572 Community Agency Resources .......... 2
SWRK 562 Community Organizations in Urban Areas .......... 3
SOC 210 Modern Social Problems .......... 4
SWRK 464 Problem Solving in Gerontology .......... 3
PEGR 572 Recreation for the Aging .......... 2
SOC 352 Introduction to Gerontology .......... 3

Group IV: General Electives
PEGR 500 Studies in H.P.E.R .......... 1-3
PEGR 598 Readings in H.P.E.R ......... 1-2

Minors

Health Education Minor

25 credit hours

A minor in health education is offered. Students have the option of choosing either a school emphasis or a community emphasis within these minors. 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.

Electives .......... 18
SCI 170 Life Science for Elementary Educators I (Education minors only)

OR

BIOS 112 Introduction to Biomedical Sciences .......... 3
BIOS 211 Human Anatomy .......... 4
BIOS 240 Human Physiology .......... 4
PSY 100 General Psychology .......... 3

OR

PSY 150 Introduction to Human Behavior .......... 3
SOC 200 Principles of Sociology .......... 3

Health Education—School Emphasis

25 hours
PEPR 155 Foundations of Health Education .......... 3
PEPR 181 First Aid .......... 2
*PEPR 220 Basic Health Concepts I .......... 3
*PEPR 221 Basic Health Concepts II .......... 3
CRT 210 Sex Education .......... 3
*CRT 410 Teaching Sex Education in the School .......... 3
PEPR 392 Measurement and Evaluation .......... 2
PEPR 316 Issues in Health Education .......... 2
*PEPR 312 Admin. and Dev. of Health Systems .......... 2
*PEPR 412 Teaching Skills and Strategies .......... 2

Health Education—Community Emphasis

25 hours
PEPR 155 Foundations of Health Education .......... 3
PEPR 181 First Aid .......... 2
**Elementary Physical Education Minor**

(Must be taken as part of Elementary Group Minor)

**Cognates** .......................... 7-8

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCI 170</td>
<td>Life Science for Elementary Educators I</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 112</td>
<td>Introduction to Biomedical Sciences</td>
<td>3-4*</td>
</tr>
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</table>

*Applicable to total General Education requirement.

**Required Professional Courses**

<table>
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<th>Course Code</th>
<th>Course Title</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 244</td>
<td>Early Elementary Movement and Activities</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 295</td>
<td>Biomechanical Analysis of Activity</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 322</td>
<td>Physical Activities for Special Populations</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 444</td>
<td>Administration and Development of Instructional Systems</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 445</td>
<td>Physical Education Teaching Skills and Strategies</td>
<td>2</td>
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**Required Activity** .................................. 6

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</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>
<td>1</td>
</tr>
<tr>
<td>DANC 290</td>
<td>Teaching Dance in the Elementary School</td>
<td>3</td>
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**Elective Courses** .................................. 4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<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>PEGN 139</td>
<td>Relaxation</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 350</td>
<td>W.S.I.</td>
<td>2</td>
</tr>
</tbody>
</table>

*Applicable to total General Education requirement.

**Special Physical Education Minor**

**21 credit hours**

Designed to prepare special education and physical education majors in the areas of recreation, physical education, swimming, health, and dance for the exceptional child. 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 A, and complete the Elementary Physical Education minor.

**Required Cognates** .................................. 8

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>SCI 170</td>
<td>Life Science for Elementary Educators I</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 112</td>
<td>Introduction to Biomedical Sciences</td>
<td>3-4*</td>
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<tr>
<td>BIOS 211</td>
<td>Human Anatomy</td>
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<tr>
<td>BIOS 240</td>
<td>Human Physiology</td>
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**Required Professional Courses** ........................ 13

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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 295</td>
<td>Biomech. Analysis of Activity</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 390</td>
<td>Physiol. 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 444</td>
<td>Administration and Development of Instructional Systems</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 445</td>
<td>Physical Education Teaching Skills and Strategies</td>
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**Activity Required** .................................. 9

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PEPR 236</td>
<td>Officiating Series</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 106</td>
<td>Recreational Dance</td>
<td>1</td>
</tr>
</tbody>
</table>

**Team Sports (2 courses)** .................................. 2

**Lifetime Sports/Activities (1 course)** .................................. 1

**Required Teaching Assistant** ...................................... N/C

**Special Physical Education Minor (Non-Teaching)**

**24 credit hours**

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.

**Required Cognates** .................................. 12

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHEM 101</td>
<td>Physical Education</td>
<td>4</td>
</tr>
<tr>
<td>GSCI 133</td>
<td>Issues in Social Biology</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 106</td>
<td>Elementary Physics</td>
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**Required Courses** .................................. 13

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>PEPR 235</td>
<td>Theory of Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 295</td>
<td>Biomech. Analysis of Act</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 390</td>
<td>Physiology of Motor Act</td>
<td>2</td>
</tr>
<tr>
<td>PEGR 335</td>
<td>Advanced Theory of Coaching</td>
<td>2</td>
</tr>
</tbody>
</table>

**Athletic Training Minor (Non-Teaching)**

**16-21 credit hours**

If a student majors in exercise science, he/she should not select the athletic training minor.

**Required Cognates** .................................. 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOS 112</td>
<td>Introduction to Biomedical Sciences</td>
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</tr>
<tr>
<td>BIOS 211</td>
<td>Human Anatomy</td>
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<td>BIOS 240</td>
<td>Human Physiology</td>
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**Required Core** .................................. 13

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<tbody>
<tr>
<td>PEPR 181</td>
<td>First Aid</td>
<td>2</td>
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<tr>
<td>(If not required in major or minor.)</td>
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<td></td>
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<tr>
<td>PEGR 380</td>
<td>Foundations Spts. Injuries</td>
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<td>(If not required in major or minor.)</td>
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<tr>
<td>CRT 260</td>
<td>Nutrition</td>
<td>3</td>
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<tr>
<td>PEPR 400</td>
<td>Field Experience At. Tr.</td>
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<tr>
<td>PEGR 580</td>
<td>Studies Sports Medicine: Topic II: Athletic Train. Tech.</td>
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**Electives** .................................. 3-6

1. **Basic Sciences**

<table>
<thead>
<tr>
<th>Course Code</th>
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2. **Behavioral Sciences**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>COM 170</td>
<td>Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>PSY 100</td>
<td>General Psychology</td>
<td>3</td>
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<tr>
<td>SOC 200</td>
<td>Principals Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SWRK 210</td>
<td>Social Work Stud. and Prof. Role</td>
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</tr>
<tr>
<td>ED 350</td>
<td>Young Child, Fam. and Society</td>
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3. **Health Education Aspects of Man and His Environment**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>BIOS 512</td>
<td>Environment and Health Problems</td>
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<tr>
<td>CRT 210</td>
<td>Intro. Human Sexuality</td>
<td>3</td>
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<tr>
<td>PEPR 235</td>
<td>Theory of Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 322</td>
<td>Physical Activities for Special Populations</td>
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<tr>
<td>PEGR 516</td>
<td>Issues in Health Education</td>
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<tr>
<td>ED 555</td>
<td>Alcohol Education</td>
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**Additional Requirement**

Eight hundred (800) clock hours of clinical experience.

**Coaching Minor (Non-Teaching)**

**24 credit hours**

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.

**Required Cognates** .................................. 13

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<th>Credits</th>
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<tbody>
<tr>
<td>PEPR 310</td>
<td>Track and Field</td>
<td>1</td>
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<tr>
<td>PEPR 325</td>
<td>Swimming for the Exceptional Child</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 444</td>
<td>Administration and Development of Instructional Systems</td>
<td>2</td>
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<tr>
<td>PEPR 445</td>
<td>Physical Education Teaching Skills and Strategies</td>
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**A. Background Courses in Physical Education** .................................. 9

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>PEGN 139</td>
<td>Relaxation</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 310</td>
<td>Track and Field</td>
<td>1</td>
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<tr>
<td>PEPR 325</td>
<td>Swimming for the Exceptional Child</td>
<td>3</td>
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<td>PEPR 444</td>
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**B. Background Courses in Special Education** .................................. 9

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>SPED 530</td>
<td>Introduction to Special Education</td>
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<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>
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</tbody>
</table>

**23 credit hours**

*Applicable to total General Education requirement.*
**Course Descriptions (PEPR)**

**102 Cycling: Relaxation/Stress Management**

**349 Lifeguard Training**

**350 Water Safety Instructors**

**107 Canoeing**

**141 Sailing**

**Sports Area (Not more than 8 courses)**

**PEN/PPRM Team Sports (Not more than 4—no repeats)**

**PEN/PPRM and Dual Sports (Not more than 4—no repeats)**

**236 Sports Officiating (Not more than 2)**

**337 Adv. Techniques and Coaching (Not more than 2)**

**Music and Drama Area (Not more than 4 courses)**

**140 Music for the Classroom**

**289 Music Therapy, Children**

**290 Music Therapy, Adults**

**166 Recreational Dance**

**Musical Drama Area**

**301 Intro. to Theatre**

**Outdoor Skills Area (Not more than 4 courses)**

**106 Canoeing**

**108 Backpacking**

**110 Cross-Country Skiing**

**135 Outdoor Challenge**

**143 Cross-Country Skiing**

**167 Winter Camping**

**172 Camp Leadership**

**176 Outdoor Education**

**106 Recreational Dance**

**564 Creative Drama for Children**

**THEA 100 Intro to Theatre**

**Group II: Administrative Skills**

**368 Organization and Administration of Intramurals**

**COM 104 Public Speaking**

**COM 335 Leadership**

**COM 549 Public Relations/Program Organization**

**GEOG 240 National Park Landscapes**

**GEOG 350 Conservation/Environmental Management**

**BIS 388 Records Management**

**BIS 560 Office Management**

**BIS 102 Intro. to Information Processing**

**ACCT 201 Accounting**

**GEOL 312 Geology of National Parks and Monuments**

**GEOL 544 Environmental Geology**

**ECN 319 Environmental Economics**

**CRT 363 Landscape Design**

**Group III: Community Organization Skills**

**516 Issues in Health Education**

**COM 232 Discussion**

**COM 482 Communication Processes in the Organization**

**SWRK 572 Community Agency Resources**

**SWRK 562 Community Organizations in Urban Areas**

**SOC 210 Modern Social Problems**

**SWRK 464 Problem Solving in Gerontology**

**PEGR 572 Recreation for the Aging**

**SOC 352 Introduction to Gerontology**

**Group IV: General Electives**

**500 Studies in H.P.E.R.**

**596 Readings in H.P.E.R.**

**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**

**210 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**

**312 Administration and Development of Instructional Systems**

**316 Issues in Health Education**

**330 Community Health**

**400 Field Experience in Health**

**412 Teaching Skills and Strategies in Health**

**430 Community Health II**

**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**

**235 Theory of Coaching**

**236 Officiating Series**

**242 Aerobic Dance Instruction**

**244 Early Elementary Movement and Activities**

**295 Biomechanical Analysis of Activity**

**300 Seminar Series**

**320 Physical Education for the Exceptional Child**

**321 Therapeutic Needs and Programs for the Exceptional Child**

**322 Physical Activities for Special Populations**

**325 Swimming for the Exceptional Child**

**335 Advanced Theory of Coaching**

**337 Coaching and Advanced Techniques**

**345 Nature and Bases of Motor Skills**

**346 Administration and Organization of Intramural Sports**

**380 Foundations of Sports Injuries**

**390 Physiology of Motor Activity**

**392 Measurement and Evaluation in Physical Education**

**400 Field Experience/Internship in HPER**

**420 Testing and Developmental Programs for the Exceptional Child**

**444 Administration and Development of Instructional Systems in Physical Education**

**445 Teaching Skills and Strategies**

**450 Cultural Bases of Physical Education**

**480 Basic EKG**

**490 Adult Fitness and Exercise Prescription**

**PROFESSIONAL RECREATION COURSES (PEGR)**

**170 Introduction to Recreation**

**172 Camp Leadership**

**178 Playgroup Administration**

**270 Recreational Leadership**

**276 Outdoor Education**

**370 Recreation Practicum**

**375 Organization and Administration of Recreation (Preq. 170, 270, 372)**

**Elective Courses (From not more than two groups)**

**Arts and Crafts Area (Not more than 4 courses)**

**ART 201 (104) Drawing**

**ART 206 Ceramics**

**ART 207 Jewelry**

**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**

**312 Administration and Development of Instructional Systems**

**316 Issues in Health Education**

**330 Community Health**

**400 Field Experience in Health**

**412 Teaching Skills and Strategies in Health**

**430 Community Health II**

**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**

**235 Theory of Coaching**

**236 Officiating Series**

**242 Aerobic Dance Instruction**

**244 Early Elementary Movement and Activities**

**295 Biomechanical Analysis of Activity**

**300 Seminar Series**

**320 Physical Education for the Exceptional Child**

**321 Therapeutic Needs and Programs for the Exceptional Child**

**322 Physical Activities for Special Populations**

**325 Swimming for the Exceptional Child**

**335 Advanced Theory of Coaching**

**337 Coaching and Advanced Techniques**

**345 Nature and Bases of Motor Skills**

**368 Administration and Organization of Intramural Sports**

**380 Foundations of Sports Injuries**

**390 Physiology of Motor Activity**

**392 Measurement and Evaluation in Physical Education**

**400 Field Experience/Internship in HPER**

**420 Testing and Developmental Programs for the Exceptional Child**

**444 Administration and Development of Instructional Systems in Physical Education**

**445 Teaching Skills and Strategies**

**450 Cultural Bases of Physical Education**

**480 Basic EKG**

**490 Adult Fitness and Exercise Prescription**

**PROFESSIONAL RECREATION COURSES (PEGR)**

**170 Introduction to Recreation**

**172 Camp Leadership**

**178 Playgroup Administration**

**270 Recreational Leadership**

**276 Outdoor Education**

**370 Recreation Practicum**

**372 Recreational Programming**

**375 Organization and Administration of Recreation (Preq. 170, 270, 372)**

**Group I: Program Skills**

**Aquatics Area (Not more than 4 courses)**

**PEN/PPRM Team Sports (Not more than 4—no repeats)**

**PEN/PPRM and Dual Sports (Not more than 4—no repeats)**

**236 Sports Officiating (Not more than 2)**

**337 Adv. Techniques and Coaching (Not more than 2)**

**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**

**210 Racquet Sports**

**215 Aerobic Conditioning**

**305 Golf: Archery: Bowling**

**310 Track and Field**
Professional Health, Physical Education and/or Recreation (PEPR/PEGR)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog. Course descriptions preceded by a † are open to all students.

PEPR 100 Health for Better Living
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 172 Camp Leadership
3 hrs. Fall (even)
The investigation of the responsibilities of the counselor in the camp. Exploration of the arms and values of the total camp program are emphasized.

PEPR 178 Playground Administration
2 hrs. Fall only
This course is designed to give administrative and leadership skills for summer playgrounds.

All areas of playground organization, operation, program planning, and a wide range of activities will be covered.

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 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 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
1 hr. Fall, Winter
†The discussion and application of rules and officiating techniques. The student is required to officiate in out-of-class athletic programs.

PEPR 241 Physical Education and Recreation for Teachers
2 hrs.
This course is open only to teachers. Topics included in the course are: Program planning, making of games and equipment, accident prevention, basic motor skills. Practice in games, stunts, rhythms and recreational activities will be included. Offered by extension only.

PEPR 242 Aerobic Exercise Instruction
1 hr.
Designing to provide information and experiences leading to successful selection of activities, planning and presentation skills necessary to provide aerobic activity instruction.

PEPR 244 Early Elementary Movement and Activities
2 hrs. Fall, Winter
Designed to provide information concerning the motor development of children and experiences that apply that information in the planning of appropriate exercise and physical experiences, i.e., basic skills, creative movement, rhythms, and lead up games. Prerequisite: PEPR 150.
PEPR 270 Recreational Leadership
2 hrs. Winter only
A course studying the skills, knowledge and techniques necessary to conduct social recreation programs for all ages. Creative and effective leadership stresses through observations, participation and the leading of activities. Prerequisite: PEPR 170 or permission of instructor.

PEPR 276 Outdoor Education
2 hrs. Winter only
A course in the philosophy, methods and materials of outdoor education emphasizing outdoor activities for both children and youth.

PEPR 285 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 Administration and Development of Instructional Systems
2 hrs. Fall, Winter
Designed to provide experiences which will enable the student to develop management, administrative and instructional skills required to plan and implement a contemporary health education program in school and community settings. Prerequisite: PEPR 100 or 220, 221; PEPR 155, CRT 210 and 270.

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 220, 221.

PEPR 320 Physical Education for the Exceptional Child
3 hrs. Fall, Winter
The activities and games used in corrective, adaptive, and developmental programs for children with mental or physical handicaps and those with learning disabilities. An emphasis will also be placed on activities for children with perceptual handicaps and on activities to augment academic learning. Special physical education minors only.

PEPR 321 Therapeutic Needs and Programs for the Exceptional Child
3 hrs. Fall
The evaluation, interpretation and planning of therapeutic and rehabilitation programs for the handicapped child. Emphasis is placed on programs for the orthopedically handicapped, the mentally retarded, the epileptic, the blind and those conditions as multiple sclerosis, muscular dystrophy, rheumatic fever and cardiac disorders. Prerequisites: BIOS 211, PEPR 320, SPED 530.

PEPR 322 Physical Activity for Special Populations
2 hrs. Fall, Winter
Motor appropriate movements and games used to integrate special populations with non-disabled individuals in exercise-related activities are explored.

PEPR 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 330 Community Health I
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. Prerequisites: PEPR 155, PEPR 220, and PEPR 221.

PEPR 335 Advanced Theory of Coaching
2 hrs.
A continuation course for professional students with a major in physical education or minor in coaching pursuing the second level of Program for Athletic Coaches Education Certification (PACE). PACE Level II certification demonstrates advanced competence in the interpersonal and technical skills of coaching high school sports in Michigan. Course content provides an understanding as to significance of quality coaching, human growth and development, conditioning for sport performance and psychological and social skills necessary to coach high school sports. Prerequisite: PEPR 235.

PEPR 337 Coaching and Advanced Technique
2 hrs. Fall, Winter
Coaching and advanced skills, selection of a team, preparation, officiating and conducting competitive events. Prerequisites: Must have had first level course(s). Tennis, Soccer, Baseball, Football, Softball, Basketball, Track/Field, Volleyball, Wrestling, Gymnastics.

PEPR 340 Physical Education for the Elementary Classroom Teacher
2 hrs. Fall, Winter, Spring
This course is structured for the future elementary classroom teacher and/or special education teacher. It provides experience in the 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 game-related activities. This course is not open to physical education majors or minors.

PEPR 345 Nature and Bases of Motor Skills
2 hrs. Fall, Winter
Describes and analyzes the characteristic motor development patterns and evaluates the potential of children's motor performance. Emphasis will be placed on the introduction and explanation of the psychomotor domain. Prerequisite: BIOS 240 or permission of instructor.

PEPR 368 Administration and Organization of Intramural Sports
2 hrs. Fall only
The problems, policies, finances, eligibility, awards, officiating, publicity, and procedures related to the intramural program.

PEPR 370 Recreation Practicum
3 hrs. Fall, Winter, Spring
The practical field experiences in recreation. Enrollment by permission of instructor and acceptance of practicum proposal. Prerequisite: PEPR 372.

PEPR 372 Recreational Programming
3 hrs. Winter only
A study of the goals development and evaluation of programs in recreational settings. Practical experience in ascertaining needs and scheduling activities to meet goals will be emphasized. Prerequisite: PEPR 270.

PEPR 375 Organization and Administration of Recreation
3 hrs. Fall
The study of methods of organization in recreation programs and agencies at local, state and federal levels with emphasis on administrative procedures concerning personnel, facilities, areas, legalities, financing, and supervision. Prerequisite: PEPR 370.

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 390 Physiology of Motor Activity
2 hrs. Fall, Winter
The effects on systems of the body under stress of motor activity—cardiopulmonary function, metabolism, neuromuscular system. Practical application of principles to strenuous physical exercise. Prerequisite: BIOS 240.

PEPR 392 Measurement and Evaluation in Physical Education
2 hrs. Fall, Winter
Covers evaluation techniques in terms of understanding, interpretation, and application with emphasis on administration, selection and use of tests, interpretation of results through statistical procedures, analysis of tests available in the field and techniques for developing knowledge and skills tests.

PEPR 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 intern teaching.

PEPR 412 Teaching Skills and Strategies
2 hrs. Fall, Winter
Designed to provide information and experiences that enable students to design and implement effective health education strategies in a school setting. Prerequisite: PEPR 312.

PEPR 420 Testing and Developmental Programs for the Exceptional Child
3 hrs. Winter
A study of the developmental programs of various leaders in the field and the adaptation of these theories to practical situations in the local community. The various methods of assessing the exceptional child will be discussed and practiced. Students will be involved with testing children, establishing
programs for children and assessing the
program's effectiveness. Topics include: current knowledge in science. The course
surveys topics such as mental health, nutrition, substance abuse, physical fitness, chronic diseases, and stress management. Consideration is given to psychological, sociological and cultural factors that influence health improvement. Attention is given to special factors of health and illness of
children and adolescents. This course is not open to health education majors or minors who have had PEPR 100, 220, 221.

PEPR 512 Principles, Practices, and Methods in Health Education
3 hrs.
This course surveys the history, philosophy, and methods of health education. The
philosophical basis and practices of health education are discussed in terms of needs and capabilities of people and factors that influence their development. Emphasis is placed upon the promotion of health and prevention of disease, disability, and premature death. Curriculum development and teaching methods focus on content and strategies considered most effective in teaching disease prevention and health promotion. This course is not open to health education majors or minors who have had 312 or 412. Prerequisite: 510 or equivalent.

PEGR 514 Methods and Materials in Health Education
2 hrs.
Lectures and demonstrations with emphasis on the effective health supervision of school children, the principles and practices of health teaching in the various grades, and the interrelation of teaching with that of other subjects in this curriculum. Prerequisite: PEPR 312, 412 or 512 or consent of department.

PEGR 516 Issues in Health Education 1-3 hrs.
The focus will be placed on current health issues. May be designed to deal with one issue or several.

PEGR 520 Physical Activities for Exceptional Children
3 hrs.
Physical and recreational activities and games used in corrective, adaptive and general health education programs for special education children.

PEGR 521 Therapeutic Trends for Exceptional Children
3 hrs.
A study of past, present and future trends in adaptation of physical education to special needs. Open to graduate students only.

PEGR 535 Principles and Problems of Coaching 2 hrs.
A study of physical education which deals with the way children learn the basic principles of how their bodies move.

PEGR 540 Administration of Physical Education 2 hrs.
For administrative officers, as well as for teachers and directors of physical education. Includes a study of representative programs for physical education and discussion of standards for evaluating such programs.

PEGR 562 Administration of Athletics 2 hrs.
Discusses administrative procedures and problems connected with athletic programs, including scheduling, financial and insurance problems, school law and liability, eligibility, finance, safety, and the conduct of athletic events.

PEGR 572 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. Suggested Prerequisite: SOC 352.

PEGR 580 Studies in Athletic Training 1-2 hrs.
Fall (Undergrad Athletic Trainer), Winter (Graduate Non-Athletic Trainer)
Listed with various topics. A lecture/demonstration course concerned with the prevention, diagnosis, and treatment of sports type injuries. Prerequisites: BIOS 211, 240, PEPR 380.

PEGR 590 Exercise Physiology 2 hrs.
The mechanics of muscular contraction, nerve impulse conduction, oxygen exchange, and circulatory efficiency are discussed. Basic principles concerning the adaptation of the human body to stress in the form of strenuous physical activity are applied to the training and conditioning of competitive athletics. Prerequisites: BIOS 211, 240. Open to graduate students only.

Acquaints students with the theory, selection, construction, administration, interpretation of appropriate tests in the field. Class activity will include study and discussion of selected tests, application, scoring, interpretation, and construction of tests. Open to graduate students only.

PEGR 595 Analysis of Movement in Sport 2 hrs.
The study of movement of muscles and the application of kinesiology to physical activity.
Prerequisite: BIOS 211. Open to graduate students only.

PEGN 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
All undergraduate students must participate in general activity physical education beginning with the first semester or session of residence, until a minimum of 2 hours is completed. Classes meet two hours weekly for one semester of credit. Exceptions:

1. Any student 30 years of age or older is not required to take physical education. (122 hours required for graduation.)
2. A student in the marching band may count band participation towards two semesters of general physical education.
3. A veteran (defined as one having served one year's continuous active duty) will be accepted as credits toward graduation.
4. A transfer student must enroll in general physical education requirement.
5. Only a student with a severe physical disability will receive a medical waiver from the requirement. A student with a temporary or permanent physical disability may receive counseling concerning selection of courses suited to his/her limitation. A physical examination by a Health Center physician is the first step in the counseling procedure. The procedure does not have to be followed if the student feels he/she can select two courses without medical advice. The physical examination must be given during the first semester of residence if a student wishes to follow the Medical Recommendation procedure. A copy of the procedure may be obtained from the Sindecuse Health Center.
6. A varsity team member may receive up to 2 credits in general physical education by enrolling in the appropriate course in the PEGN 400 series (List follows 300 level courses.)
7. Only one dance course may be used to fulfill the general physical education graduation requirement. (List follows PEGN 100 listing.)
8. ROTC Cadets are to enroll in PEGN 132 Military Fitness I to fulfill the general physical education requirement. Permission required from ROTC.

RESTRICTIONS
1. Up to 8 hours of general physical education will be accepted as credits toward graduation.
2. A freshman or sophomore student may not enroll in more than 1 hour of general physical education in any one semester.
3. A course cannot be repeated for credit without written authorization from the HPER Department Chair to the Academic Records Office. PEGN 175 Special Activities may be repeated under different course titles, i.e. 175 Aquatic Fitness, 175 Kayaking, etc.
4. One of the following DANCE courses may be used:

PEGN 101 Beginning Ballet
PEGN 102 Beginning Jazz Dance
PEGN 103 Beginning Modern
PEGN 104 Beginning Tap
PEGN 111 Beginning Ballet II
PEGN 112 Beginning Jazz Dance II
PEGN 114 Beginning Tap II
PEGN 181 Dance Improvisation

All courses are co-ed. Course descriptions may be obtained from the general physical education office.

• PEGN 100-level courses—are open to all students and emphasize the beginning skills in the activity given. The student with some experience in activities marked**—"Beginners Only" should enroll in 200/300 level courses.
• PEGN 200-level courses—are open to all students who have completed a 100-level course in the activity or the equivalent. (**Prerequisite 249 or Red Cross Intermediate Card)
• PEGN 300-level courses—are open to all students desiring additional experience in an activity and who have completed the 200-level course or permission of instructor to enroll.
• PEGN 400—A varsity athlete may receive PEGN credit by enrollment and completion of these courses. (1 credit hour each.) Enrollment by permission of instructor.

General Physical Education (PEGN)
A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

PEGN 100 Adapted P.E. Med. Rec
1 hr.

PEGN 101 Archery
1 hr.

PEGN 102 Badminton
1 hr.

PEGN 103 Aerobic Exercise
1 hr. Course consists of a broad spectrum of fitness exercises to music.

PEGN 104 Basketball
1 hr.

PEGN 105 Bowling
1 hr.

PEGN 106 Canoe Camping
1 hr. The course combines the fundamentals of camping with canoeing. Culminates with a weekend camping trip by canoe.

PEGN 107 Canoeing
1 hr.

PEGN 108 Backpacking
1 hr.

PEGN 109 Cycling
1 hr.

PEGN 110 Cross Country Ski Camp
1 hr. This course combines Cross Country skiing with outdoor living experiences.

PEGN 120 Fencing
1 hr.

PEGN 122 Golf I
1 hr.

PEGN 124 Gymnastics—Tumbling
1 hr.

PEGN 128 Jogging
1 hr.

PEGN 129 Ice Hockey
1 hr.

PEGN 130 Judo
1 hr.

PEGN 131 Karate
2 hrs.

PEGN 132 Military Fitness
1 hr.

PEGN 133 Outdoor Challenge
1 hr.

PEGN 134 Rock Climbing
1 hr.

PEGN 135 Relaxation
1 hr.

PEGN 136 Physical Fitness
1 hr.

PEGN 137 Racquetball
1 hr.

PEGN 138 Rock Climbing
1 hr.

PEGN 139 Skiing—Cross Country
1 hr.

PEGN 140 Sailing
1 hr.

PEGN 141 Sailing
1 hr.

PEGN 142 Skiing—Ice
1 hr.

PEGN 143 Skiing—Cross Country
1 hr.

PEGN 144 Skiing—Alpine
1 hr.

PEGN 145 Soccer
1 hr.

PEGN 146 Softball
1 hr.

PEGN 147 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 handy 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., Windsurfing, Kayaking, Aquatic Fitness
1 hr.

PEGN 200 Physical Education Learning Lab Activities
1 hr.
Guided individual instruction in a variety of physical education activities. Resources such as films, books and workshops are available to aid the student to learn in a manner and rate suitable to the individual skill and knowledge. Competency testing will be used to determine achievement and place individuals at beginning, intermediate or advanced levels. Course is repeatable for up to 8 hours credit (University limit) under 200 number, with different course titles. Prerequisite: GPA of 3.0 overall.

PEGN 204 Intermediate Basketball
1 hr.

PEGN 205 Bowling—Intermediate
1 hr.

PEGN 208 Intermediate Backpacking
1 hr.

PEGN 220 Fencing—Intermediate
1 hr.

PEGN 222 Golf II
1 hr.

PEGN 229 Ice Hockey—Intermediate
1 hr.

PEGN 236 Intermediate Physical Fitness
1 hr.
This course is for the student desiring a higher level of fitness, training for marathons, triathlons, and/or weight competition.

PEGN 237 Racketball—Intermediate
1 hr.

PEGN 241 Sailing—Intermediate
1 hr.

PEGN 242 Skating—Ice Figure
1 hr.

PEGN 244 Intermediate Alpine Skiing
1 hr.

PEGN 246 Intermediate Soccer
1 hr.

PEGN 249 Swimming—Intermediate
1 hr.

PEGN 250 Swimmer
1 hr.
Students will build on skills learned in Intermediate Swimming and learn to develop these skills in order to enter the Life Saving course. Prerequisite: PEGN 249.

PEGN **251 Advanced Swimming and Emergency Water Safety
1 hr.

PEGN 252 Swim Conditioning
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 260 Tennis II
1 hr.

PEGN 263 Volleyball Intermediate
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 Tennis—Intermediate
1 hr.

VARSITY ATHLETICS

PEGN 400 Baseball
1 hr.

PEGN 401 Basketball
1 hr.

PEGN 403 Cross Country
1 hr.

PEGN 405 Football
1 hr.

PEGN 407 Gymnastics
1 hr.

PEGN 408 Ice Hockey
1 hr.

PEGN 409 Soccer
1 hr.

PEGN 410 Softball
1 hr.

PEGN 413 Tennis
1 hr.

PEGN 414 Track/Field
1 hr.

PEGN 415 Volleyball
1 hr.
The Department of Special Education offers undergraduate programs for the preparation of teachers in the areas of emotionally impaired, mentally impaired, and visually impaired at either the elementary or secondary level of special education. Students completing the undergraduate curricula earn an Elementary Teaching Certificate with an endorsement in one of the above areas.

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 each year after review of all applications by a departmental faculty committee.

Each year the Department of Special Education establishes the maximum number of new students who can be admitted to each of the curricula for the following year. The minimum criteria for admission consideration include:

1. Completion of the Western Michigan University College of Education Pre-Education Curriculum.
2. Attainment of junior status (at least 56 semester hours completed or in process at the time of application).
3. Completion of a minimum of 30 clock hours of contact with a person(s) with disabilities.
4. 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 weighing 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.

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 internship) 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.

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 Degree State Elementary Provisional Certificate

Baccalaureate Writing Requirement

Students who have chosen the Special Education Curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing ED 395 School and Society.

Endorsement — Elementary Emotionally Impaired

For the preparation of teachers of elementary level students with Emotional Impairment.

Minimum Hours Required for this Curriculum ............................................. 130 hrs.

Course Requirements

A minimum grade of "C" must be earned in all courses listed as part of the Endorsement in Elementary Emotionally Impaired. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements:

General Education Requirement ............................................. 35 hrs.

An additional five hours in General Education courses from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies are required for Michigan Certification (See "Degree Requirements" under Degree and Curricula listed earlier in this catalog).

Curriculum Requirements

ART 150 / 200 Art Education Workshop ............................................. 3
COM 170 Interpersonal Communication I ............................................. 3
OR

COM 104 Public Speaking ............................................. 3
ED 250 Human Development ............................................. 3
ED 312 Foundations of Reading Instruction ............................................. 3
ED 351 Reading and Related Communication Skills for Early Childhood ............... 3
ED 395 School and Society ............................................. 3
ED 410 Seminar in Education ............................................. 2
ED 471 Intern Teaching: Elementary ............................................. 10
ENGL 280 Children's Literature ............................................. 4*
MATH 150 Number Concepts for Elementary/Middle School Teachers .................. 4
MUS 141 Music in Special Education or MUS 140 Music for the Classroom Teacher ............................................. 3
MUS 140 Music for the Classroom Teacher ............................................. 3
PEPR 340 Physical Education for the Elementary Classroom Teacher .................. 2
PSY 100 General Psychology ............................................. 3*

Academic Minor ............................................. 20-24 hrs.

To be selected from the following minors approved for Elementary Education certification: Art, Creative Arts, English, Group Social Science, Language, Science and Mathematics, Teaching Minor, Special Physical Education.

Courses in Emotionally Impaired Major — Elementary

NOTE: Students entering the curriculum must have met an experience requirement with a person(s) with disabilities of at least thirty clock hours duration. Students must contact the department to secure the appropriate forms for documenting this experience or to secure assistance in meeting this requirement.

NOTE: Students must see a department advisor regarding the sequence in which the courses must be completed.

SPED 474 Intern Teaching in Special Education: Elementary Level E1 E1 Students ............................................. 10
SPED 504 Teaching Practicum in Special Education: Elementary ............................................. 1
SPED 530 Introduction to Special Education ............................................. 3
SPED 531 Classroom Practicum in Special Education ............................................. 1
SPED 533 Assessment and Prescription in Special Education ............................................. 3
SPED 534 Curriculum and Instruction in Special Education: Elementary ............................................. 3
SPED 537 Technology in Special Education ............................................. 3
SPED 538 Introduction to Classroom Management ............................................. 3
SPED 539 Consultation and Communication in Special Education ............................................. 3
SPED 570 Introduction to Emotional Impairments ............................................. 3
SPED 571 Program Practicum in Special Education: EI ............................................. 1
SPED 575 Education of Learners with Emotional Impairments ............................................. 3
SPPA 200 Introduction to Communication Disorders 3*

Electives to reach 130 hour total

The student must satisfy the requirements for the B.S. or B.A. degree and successfully pass the state competency examination.

Endorsement — Elementary Mentally Impaired

For the preparation of teachers of elementary level students with Mental Impairment.

Minimum Hours Required for this Curriculum ............................................. 130 hrs.

Course Requirements

A minimum grade of "C" must be earned in all courses listed as part of the Endorsement in Elementary Mentally Impaired. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements:

General Education Requirement ............................................. 35 hrs.

An additional five hours in General Education courses from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies are required for Michigan Certification (See "Degree Requirements" under Degree and Curricula listed earlier in this catalog).

Curriculum Requirements

ART 150 / 200 Art Education Workshop ............................................. 3
COM 170 Interpersonal Communication I ............................................. 3
OR

COM 104 Public Speaking ............................................. 3
ED 250 Human Development ............................................. 3
ED 312 Foundations of Reading Instruction ............................................. 3
ED 351 Reading and Related Communication Skills for Early Childhood ............... 3
ED 395 School and Society ............................................. 3
ED 410 Seminar in Education ............................................. 2
ED 471 Intern Teaching: Elementary ............................................. 10
ENGL 280 Children's Literature ............................................. 4*
MATH 150 Number Concepts for Elementary/Middle School Teachers .................. 4
MUS 141 Music in Special Education or MUS 140 Music for the Classroom Teacher ............................................. 3
MUS 140 Music for the Classroom Teacher ............................................. 3
PEPR 340 Physical Education for the Elementary Classroom Teacher .................. 2
PSY 100 General Psychology ............................................. 3*

Academic Minor ............................................. 20-24 hrs.

To be selected from the following minors approved for Elementary Education certification: Art, Creative Arts, English, Group Social Science, Language, Science and Mathematics, Teaching Minor, Special Physical Education.
Endorsement — Elementary Visually Impaired

For the preparation of teachers of elementary level students with Visual Impairment

Minimum Hours Required for this Curriculum ................................... 130 hrs.

Course Requirements
A minimum grade of "C" must be earned in all courses listed as part of the Endorsement in Elementary Visually Impaired. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements:

General Education Requirement .......................... 35 hrs.
An additional five hours in General Education courses from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies are required for Michigan Certification (See "Degree Requirements" under Degree and Curricula listed earlier in this catalog).

Curriculum Requirements
ART 150 / 200 Art Education .......................... 3
COM 170 Interpersonal Communication I .......................... 3
ED 250 Human Development .......................... 3
ED 312 Foundations of Reading Instruction .......................... 3
ED 351 Reading and Related Communication Skills for Early Childhood .......................... 3
ED 396 School and Society .......................... 3
ED 410 Seminar in Education .......................... 2
ED 471 Intern Teaching: Elementary .......................... 10
ENGL 280 Children's Literature .......................... 4*
MATH 150 Number Concepts for Elementary/Middle School Teachers .......................... 4
MUS 141 Music in Special Education .......................... 4
MUS 140 Music for the Classroom Teacher .......................... 3
PEPR 340 Physical Education for the Elementary Classroom Teacher .......................... 2
PSY 100 General Psychology .......................... 3*

Academic Minor — Elementary Visually Impaired
To be selected from the following minors approved for Elementary Education certification: Art, Creative Arts, English, Group Social Science, Language, Science and Mathematics Teaching Minor, Special Physical Education.

Endorsement — Secondary Emotionally Impaired

For the preparation of teachers of secondary level students with Emotional Impairment

Minimum Hours Required for this Curriculum ................................... 130 hrs.

Course Requirements
A minimum grade of "C" must be earned in all courses listed as part of the Endorsement in Secondary Emotionally Impaired. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements:

General Education Requirement .......................... 35 hrs.
An additional five hours in General Education courses from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies are required for Michigan Certification (See "Degree Requirements" under Degree and Curricula listed earlier in this catalog).

Curriculum Requirements
ART 150 / 200 Art Education .......................... 3
COM 170 Interpersonal Communication I .......................... 3
ED 250 Human Development .......................... 3
ED 312 Foundations of Reading Instruction .......................... 3
ED 396 School and Society .......................... 3
ED 410 Seminar in Education .......................... 2
ED 472 Directed Teaching: Upper Elementary/Middle School Teachers .......................... 10
ENGL 280 Children's Literature .......................... 4*
MATH 150 Number Concepts for Elementary/Middle School Teachers .......................... 4
MUS 141 Music in Special Education .......................... 4
MUS 140 Music for the Classroom Teacher .......................... 3
PEPR 340 Physical Education for the Elementary Classroom Teacher .......................... 2
PSY 100 General Psychology .......................... 3*
**Academic Minor** .................................. 20-24 hrs.
To be selected from minors approved for Secondary Education certification. See Secondary Minors section of this catalog.

**Courses in Emotionally Impaired Major — Secondary**

**NOTE:** Students entering the curriculum must have met an experience requirement with a person(s) with disabilities of at least thirty clock hours duration. Students must contact the department to secure the appropriate forms for documenting this experience or to secure assistance in meeting this requirement.

**NOTE:** Students must see a department advisor regarding the sequence in which the courses must be completed.

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<tr>
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<td>Teaching Practicum in Special Education: Secondary</td>
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<td>SPED 533</td>
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<tr>
<td>SPPA 200</td>
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</table>

**Electives to reach 130 hour total**
The student must satisfy the requirements for the B.S. or B.A. degree and successfully pass the state competency examination.

**Endorsement — Secondary Mentally Impaired**

For the preparation of teachers of secondary level students with Mental Impairment.

**Minimum Hours Required for this Curriculum** .................................. 130 hrs.

**Course Requirements**

A minimum grade of “C” must be earned in all courses listed as part of the Endorsement in Secondary Visually Impaired. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements:

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<td>SPED 540</td>
<td>Introduction to Mental Retardation</td>
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<td>SPED 541</td>
<td>Program Practicum in Special Education: Moderate and Severe Retardation</td>
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</table>

**Electives to reach 130 hour total**
The student must satisfy the requirements for the B.S. or B.A. degree and successfully pass the state competency examination.

**Endorsement — Secondary Visually Impaired**

For the preparation of teachers of secondary level students with Visual Impairment.

**Minimum Hours Required for this Curriculum** .................................. 130 hrs.

**Course Requirements**

A minimum grade of “C” must be earned in all courses listed as part of the Endorsement in Secondary Visually Impaired. Those marked with * are approved for General Education and are not included in the hour totals for the following requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPED 506</td>
<td>Intern Teaching in Special Education: Secondary</td>
<td>3</td>
</tr>
<tr>
<td>SPED 530</td>
<td>Introduction to Special Education</td>
<td>3</td>
</tr>
<tr>
<td>SPED 531</td>
<td>Classroom Practicum in Special Education</td>
<td>1</td>
</tr>
<tr>
<td>SPED 533</td>
<td>Assessment and Prescription in Special Education</td>
<td>3</td>
</tr>
</tbody>
</table>

**Curriculum Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 104</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>ED 250</td>
<td>Human Development</td>
<td>3</td>
</tr>
<tr>
<td>ED 312</td>
<td>Foundations of Reading Instruction</td>
<td>3</td>
</tr>
<tr>
<td>ED 352</td>
<td>Reading and Related Communication Skills for Middle and Upper Grades</td>
<td>3</td>
</tr>
<tr>
<td>ED 395</td>
<td>School and Society</td>
<td>3</td>
</tr>
<tr>
<td>ED 410</td>
<td>Seminar in Education</td>
<td>2</td>
</tr>
<tr>
<td>ED 472</td>
<td>Intern Teaching: Upper Elementary/Middle School</td>
<td>10</td>
</tr>
<tr>
<td>ENGL 282</td>
<td>Children’s Literature</td>
<td>4*</td>
</tr>
<tr>
<td>MATH 150</td>
<td>Number Concepts for Elementary/Middle School Teachers</td>
<td>2</td>
</tr>
<tr>
<td>MUS 141</td>
<td>Music in Special Education</td>
<td>4</td>
</tr>
<tr>
<td>MUS 140</td>
<td>Music for the Classroom Teacher</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 340</td>
<td>Physical Education for the Elementary Classroom Teacher</td>
<td>2</td>
</tr>
<tr>
<td>PSY 100</td>
<td>General Psychology</td>
<td>3*</td>
</tr>
<tr>
<td>SPPA 200</td>
<td>Introduction to Communication Disorders</td>
<td>3</td>
</tr>
</tbody>
</table>

**Academic Minor** .................................. 20-24 hrs.
To be selected from the minors approved for Secondary Education certification. See Secondary Minors section of this catalog.

**Courses in Visually Impaired Major — Secondary**

**NOTE:** Students entering the curriculum must have met an experience requirement with a person(s) with disabilities of at least thirty clock hours duration. Students must contact the department to secure the appropriate forms for documenting this experience or to secure assistance in meeting this requirement.

**NOTE:** Students must see a department advisor regarding the sequence in which the courses must be completed.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
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<tr>
<td>COM 170</td>
<td>Interpersonal Communication I</td>
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<tr>
<td>ENGL 282</td>
<td>Children’s Literature</td>
<td>4*</td>
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<tr>
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<tr>
<td>MUS 141</td>
<td>Music in Special Education</td>
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</tr>
<tr>
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<tr>
<td>SPPA 200</td>
<td>Introduction to Communication Disorders</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives to reach 130 hour total**
The student must satisfy the requirements for the B.S. or B.A. degree and successfully pass the state competency examination.
SPED 536 Curriculum and Instruction in Special Education 3
SPED 537 Technology in Special Education 3
SPED 539 Consultation and Communication in Special Education 3
SPED 591 Braille and Other Communication Methods 2
SPED 593 Methods and Techniques of Teaching Braille and Other Disabilities 3
BLRH 590 Physiology and Function of the Eye 2
BLRH 592 Introduction to the Education of Visually Impaired Children 2
BLRH 594 Principles of Orientation and Mobility 3
Electives to reach 130 hour total

The student must satisfy the requirements for the B.S. or B.A. degree and successfully pass the state competency examination.

Special Education Courses (SPED)

SPED 474 Intern Teaching in Special Education 10 hrs.
This final field experience is open only to special education undergraduate students who have completed all of their Special Education professional sequence requirements. It will consist of full-time intern teaching in an appropriate educational setting serving students with disabilities. Students will participate in all phases of the school program to which they are assigned. All courses except ED 410 and ED 471 or ED 472 must be completed prior to Intern Teaching in Special Education. Prerequisites: Completion of all professional education requirements. Consent of department.

SPED 500 Topical Issues in Educating Learners with Disabilities 1-4 hrs.
This course provides a survey or in-depth coverage of current issues directly related to the education of learners with disabilities. The course may be repeated for credit. Prerequisites: 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 534.

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.

SPED 529 Learners with Disabilities in General Education and Secondary Programs 3 hrs.
This course is designed for prospective and practicing secondary and special school 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.

SPED 530 Introduction to Special Education 3 hrs.
This course introduces students to the characteristics and needs of learners with sensory, physical, mental, emotional, and learning disabilities. Students develop an understanding of the psychological, sociological, philosophical, legal, and educational aspects of each type of disability. Prerequisite: Consent of department.

SPED 531 Classroom Practicum in Special Education 1 hr.
This course provides students with an opportunity to work in an elementary, middle school, or secondary classroom with learners who have disabilities. It is intended to provide students with and awareness of the nature and needs of these pupils and the role of the teacher in working with such learners. Graded on a credit/no credit basis. Prerequisite: Consent of department and concurrent enrollment in SPED 530.

SPED 533 Assessment and Prescription in Special Education 3 hrs.
The major focus of this course is understanding the Clinical Teaching Model. Emphasis is placed on the relevance of assessment and prescription to the teaching of learners with disabilities. Prerequisite: Consent of department and concurrent enrollment in SPED 504/534 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 confronting the field of elementary special education. Prerequisite: Consent of department and concurrent enrollment in SPED 504 and SPED 533.

SPED 536 Curriculum and Instruction in Special Education: Secondary 3 hrs.
This course focuses on application of the Clinical Teaching Model to the education of preadolescent, adolescent, and your adults with mild and moderate disabilities. Topics include understanding needs of learners with disabilities; education, curricular, and instructional interventions; and transition programming. Prerequisite: Consent of department and concurrent enrollment in SPED 506 and SPED 533.

SPED 537 Technology in Special Education 3 hrs.
This course is designed to provide specific information, exposure, and experience related to the variety of ways that current and emerging technologies may be used to improve the education and lives of learners with disabilities. Prerequisite: Consent of department.

SPED 538 Introduction to Classroom Management 3 hrs.
This course deals with methods of managing classroom behavior and dealing with specific behavior problems. Classroom management strategies will be discussed and related to the establishment of a positive classroom climate. Diagnostic and prescriptive techniques will be applied to problems of aggression, conduct, withdrawal, hyperactivity, distractibility, and impulsivity. Prerequisite: Consent of department.

SPED 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 stressed. 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 continuum of special education placements and the role of non-school agencies serving persons with emotional impairments and their families. Graded on a credit/no credit basis. Prerequisite: Consent of department and concurrent enrollment in SPED 570.

SPED 575 Education of Learners with Emotional Impairments
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 emotional impairments. Prerequisite: Consent of department and concurrent enrollment in SPED 570.

SPED 580 Introduction to Learning Disabilities
3 hrs.
This course provides an introduction to the field of learning disabilities. Historical perspectives, definitions, service delivery systems, evaluation procedures, and major issues are examined. Prerequisite: Consent of department.

SPED 585 Advanced Theory and Practice in Learning Disabilities
3 hrs.
This course examines several theoretical perspectives which attempt to explain why students with learning disabilities fail to learn. Within each perspective, the application of selected theories to the Clinical Teaching Model is addressed. Emphasis is placed on the validity of interventions derived from each theory. Prerequisite: Consent of department.

SPED 591 Braille and Other Communication Methods
2 hrs.
This course provides students with a basic knowledge of the braille literary code—reading and writing, and an overview of other communication methods available to students with visual impairments. Prerequisite: Consent of department.

SPED 593 Methods and Techniques of Teaching Braille and Other Areas of Communication
3 hrs.
This course explores various methods and techniques of teaching essential communication skills—braille, typing, social communication, handwriting, abacus computation, the use of electronic devices and other media to students with visual impairments. Opportunity for supervised practical application of methods are afforded to the student. Prerequisite: Consent of department.

SPED 598 Readings in Special Education
1-4 hrs.
This course is designed for advanced students interested in independent study. Topics chosen must be approved by the instructor and the department chairperson. May be repeated for credit. Prerequisite: Consent of department.
The mission of the College of Engineering and Applied Sciences supports the three fundamental goals of the University mission of education, research, and service. The College recognizes that its primary clientele are the people and industries of the State of Michigan.

The education goals are to provide balanced undergraduate and graduate programs designed to prepare individuals for professional careers, and to inculcate in students the ability to continue to learn on their own. Each academic degree program is structured to achieve these goals and to encourage student growth through participation in a wide range of extracurricular opportunities. The research goals are to generate knowledge and to develop new technologies. Applied research is emphasized and is structured to assist industry in design and development of products and processes.

Basic research adds to the knowledge base of the technical community. Modern laboratories and research facilities enhance the undergraduate educational experience with opportunities for participation in research. The service goals are to apply the extensive human and physical resources of the College to the needs of the community, state, and nation, and to assist in economic development. It also includes a commitment to serve the various professions represented by the disciplines of the College.

The College of Engineering and Applied Sciences offers undergraduate programs in several curricula and majors that prepare graduates for productive careers in a wide variety of fields. Students should refer to the programs listed throughout the College section of this Catalog for specific information related to the academic program of interest.

The College also offers graduate programs leading to Master's degrees in Engineering Management, Operations Research, Electrical Engineering, Industrial Engineering, Manufacturing Science, Materials Science, and Mechanical Engineering, Mechanical Engineering, and Paper Science and Engineering, and Ph.D. degrees in Industrial Engineering and Mechanical Engineering. Students interested in a graduate program should see the WMU Graduate Catalog for more information.

Academic Advising
Sandra F. Blanchard, Director

A central advising office is maintained for the convenience of College of Engineering and Applied Sciences students. Because prerequisites are strictly enforced and it is essential to follow the program plans that appear in the curricula descriptions, students must contact their academic advisor in the first semester of enrollment at Western Michigan University. Failure to meet with the advisor on a regular basis may result in difficulty receiving requested class schedules and/or delayed graduation.

Advisors are available to assist in program planning, to recommend electives appropriate to the student’s educational objectives, to discuss employment opportunities, and to help with general academic problems. Transfer credit and all course substitutions must be recommended by the advisor and approved by the appropriate department curriculum committee.

Prerequisites
Prerequisites are designed to both increase the probabilities of successful completion of the course and to insure the proper conduct of the course. Therefore, prerequisites will be strictly enforced in all departmental courses. Exceptions must be approved by the department no later than the end of the “add” period of the semester or session.

Credit Hour Definition for the College of Engineering and Applied Sciences

An undergraduate credit hour is a unit of academic measurement normally 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 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.
Computer Use in College Programs

Most degree programs offered in the College of Engineering and Applied Sciences require extensive use of computers. This is particularly true in engineering and engineering-related disciplines. Although Western Michigan University and the College provide adequate computer facilities for student use, many students find it advantageous to have their own computer (students are not required to purchase one). The University maintains special marketing arrangements with several major computer manufacturers and is therefore able to offer substantial discounts to students and faculty for the purchase of micro-computers and software. Interested students may obtain current information about the purchase of computing equipment from the College of Engineering and Applied Sciences Advising Office (Room 2038 Kohman Hall) or their academic advisor.

Professional and Honorary Societies

The College and each department have student branches of professional and honorary societies whose purpose is 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 are available specifically for students in the various departments of the College. A listing may be found in the “Financial Aid and Scholarships” section of this catalog.

Engineering Programs

Engineering Students

Three common characteristics are prevalent among students who are attracted to engineering. All show an interest in problem-solving—not only to know how, but why, something works. Second, engineering students possess a degree of technical aptitude—the ability to think in mathematical and scientific terms—which, third, is coupled with a strong interest in mathematics and the sciences. A majority of engineering students are involved in one or more of the several professional organizations that have student chapters on campus. Such involvement enriches 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 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 Electrical Engineering, Industrial Engineering, Mechanical Engineering, Operations 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. Generally, only graduates of EAC/ABET accredited engineering programs are eligible to be licensed in Michigan. Students interested in professional registration should consult with their department advisor.

Admission to Engineering Programs

ADMISSION TO PRE-ENGINEERING

Admission

All students admitted to the University and planning to pursue one of the following curricula will be enrolled in the pre-engineering (PE) curriculum.

Aeronautical Engineering (AER)
Computer Systems Engineering (CSE)
Construction Engineering (CEM)
Electronic Engineering (EE)
Industrial Engineering (IEN)
Materials Engineering (MME)
Mechanical Engineering (ME)
Paper Engineering (PAE)

University admission standards are used for enrollment in PE. Students admitted for PE should have appropriate academic preparation.

Academic Advising

All students enrolled in the PE curriculum will receive academic advising by the College of Engineering and Applied Sciences.

Enrollment Restrictions

Pre-engineering (PE) students will not be permitted to enroll in any course offered by the College of Engineering and Applied Sciences at the 300 level or above that is required in any 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 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 and 272 ............ 12 cr. hr.
CHEM 101 or 102 .................. 4 cr. hr.

General Education AREA I, II, OR IV ................. 3-4 cr. hr.
General Education AREA I, OR II .................. 3-4 cr. hr.

Additional Courses Required by Curricula

Aeronautical Engineering CS 106; ECE 210; IME 102; ME 256; PHYS 205 and PHYS 206; PHYS 207 and 208; and PHYS 309 and PHYS 310. See the Department of Mechanical and Aeronautical Engineering for complete Aeronautical Engineering curriculum requirements.

Construction Engineering CS 111; ECE 210; ECE 250; IME 102; PHYS 205 and PHYS 206; PHYS 207 and PHYS 208; and PHYS 309 and PHYS 310. See the Department of Electric and Computer Engineering for complete Computer Systems Engineering curriculum requirements.

Construction Engineering and Management

CS 106; GEOL 130; IME 102; IME 261; ME 205; ME 256; PHYS 205 and 206; PHYS 207 and 208. See the Department of Construction Engineering, Materials Engineering, and Industrial Design for complete Construction Engineering and Management curriculum requirements.

Electrical Engineering

CS 306; ECE 210; IME 102; ME 256; PHYS 205 and PHYS 206; PHYS 207 and PHYS 208; and PHYS 309 and PHYS 310. See the Department of Electrical and Computer Engineering for complete Electrical Engineering curriculum requirements.

Industrial Engineering

ECE 210; IME 102; IME 206; IME 261; ME 253; PHYS 205 and PHYS 206; PHYS 207 and PHYS 208. See the Department of Industrial and Manufacturing Engineering for complete Industrial Engineering curriculum requirements.

Materials Engineering

CHEM 120; CS 306; ECE 210; IME 102; IME 261; ME 253; PHYS 205 and PHYS 206; PHYS 207 and PHYS 208. See the Department of Construction Engineering, Materials Engineering, and Industrial Design for complete Materials Engineering curriculum requirements.

Materials Engineering

CHEM 120; CS 306; ECE 210; IME 102; IME 261; ME 253; PHYS 205 and PHYS 206; PHYS 207 and PHYS 208. See the Department of Construction Engineering, Materials Engineering, and Industrial Design for complete Materials Engineering curriculum requirements.

Engineering Graduates

Undergraduate engineering programs offered by the College of Engineering and Applied Sciences prepare graduates for immediately
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 coursework 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 curriculum area.

4. There are no established enrollment limits for admission to engineering curricula.

Off Campus Degree Programs

The College of Engineering and Applied Sciences offers complete undergraduate (described below) and graduate (described in The Graduate College Bulletin) degree programs off campus.

The Production Technology degree program is offered to students who can attend classes only on a part-time basis. These programs are not available on the Kalamazoo campus. Additional information can be obtained by contacting the Director of Engineering and Technical Programs at the WMU Grand Rapids Regional Center, (616) 458-8274.

Production Technology
Bachelor of Science Degree

This manufacturing-oriented program is especially designed for the individual with a two-year associate degree in a technical field from an accredited institution, who may be working in industry, and who wants to earn a Bachelor of Science degree. This degree provides the technological background necessary for growth and advancement.

The program builds on the 60 semester hours of academic credit from the associate degree with an additional 60 semester hours of academic credit from Western Michigan University. Two semester hours of physical education (which can be substituted with two hours of coursework for those over age 30) is also required, bringing the total hours needed for the degree to 122.

The entering student is expected to have taken a total of six courses in the following areas as part of the associate degree work:
- Engineering graphics
- General physics
- Humanities
- Social studies (two courses)
- English composition

A student lacking any courses in the above areas will be required to complete them in addition to the 60 hours needed at Western Michigan University.

The entering student must also have had three years of full-time work experience in an area related to studies for the associate degree. A student lacking this experience must obtain it before the bachelor’s degree is awarded. Alternatively, each year of experience may be substituted by registering for and successfully completing 3 hours of IE 301 Cooperative Education. The cooperative education credits generated will not count as part of the 60 hours required at Western Michigan University.

Program Requirements

To earn a Bachelor of Science degree in Production Technology, the following courses must be completed in addition to meeting other University requirements applicable to transfer students:

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Course Code</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Industrial Engineering</td>
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</tr>
<tr>
<td>IE 305 Work Analysis</td>
<td>MATH 366</td>
<td>4</td>
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<tr>
<td>IE 316 Manufacturing</td>
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<td>3</td>
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<tr>
<td>IE 320 Engineering Cost Analysis</td>
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<td>3</td>
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<tr>
<td>IE 326 Operations Planning and</td>
<td></td>
<td>3</td>
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<tr>
<td>Control</td>
<td>IE 402</td>
<td></td>
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<tr>
<td>IE 328 Quality Assurance and</td>
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<td>3</td>
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<tr>
<td>Control</td>
<td></td>
<td>3</td>
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<tr>
<td>IE 487 Manufacturing Productivity</td>
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<td>Techniques</td>
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<td>Other (25 hours)</td>
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<td>Baccalaureate Writing Requirement</td>
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<td>Students who have chosen the</td>
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<tr>
<td>Production Technology program will</td>
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<tr>
<td>satisfy the Baccalaureate Writing</td>
<td></td>
<td></td>
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<tr>
<td>Requirement by successfully</td>
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</tr>
<tr>
<td>completing IE 316 Report Preparation</td>
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Baccalaureate Writing Requirement

Students who have chosen the Production Technology program will satisfy the Baccalaureate Writing Requirement by successfully completing IE 316 Report Preparation.

General Programs

General programs in the College of Engineering and Applied Sciences are designed to meet the needs of students not satisfied by any other curricula in the college.

General College Curriculum (GCA)

Non-engineering students who have not decided on a particular program in the College of Engineering and Applied Sciences may initially enroll in the General College Curriculum (GCA).

Written permission of the academic advisor is required to enroll in this curriculum beyond the second year.

Interdisciplinary Programs

Integrated Supply Management Major

This program prepares students to integrate business and technological concepts for a successful career in supply management. The program is offered by the Haworth College of Business and the College of Engineering and Applied Sciences. Graduates receive a Bachelor of Business Administration degree. See the Haworth College of Business section of this catalog for program requirements.

Integrated Supply Management Minor

15 hours

Core classes – 9 hours

IE 306 Operations Planning and Control OR MKTG 372 Purchasing OR MKTG 484 Business Logistics

Capstone class – 3 hours (take one of the following)

MKTG 485 Material Systems Analysis OR MGMT 480 Materials Management Strategy OR MGMT 481 Integrated Materials Systems

Elective – 3 hours (one of the following)

IE 328 Quality Assurance and Control OR IE 318 Statistical Quality Control OR FCL 486 Marketing and Sales Law OR MKTG 485 Material Systems Analysis OR MGMT 480 Materials Management Strategy OR MGMT 481 Integrated Materials Systems

Engineering and Applied Sciences College Courses (ENGR)

ENGR 101 Introduction to Engineering and Technology 1 hr.

ENGR 497 General University Studies (Variable Credit)

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 Studies area. 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, create engineering drawings, collect and record data, design tools and fixtures, and assist in supervision. The student’s cooperative program is supervised by a college coordinator.
FOUNDRY PROGRAM
Any student enrolled in an engineering or related curriculum and interested in a career in the metal casting industry may be admitted into the Foundry Program. While engaged in this special program, the student must also meet the requirements for a B.S. degree offered by the College of Engineering and Applied Sciences. The Foundry Program is designed to allow the student an opportunity to elect various specific interest courses while earning a degree in any standard curriculum.

Foundry Program students must join the student chapter of the American Foundrymen’s Society and register with the Foundry Educational Foundation. Upon reaching the sophomore year, it is recommended that all students apply for the Co-operative Education Program by contacting the coordinator of Engineering Cooperative Education in agreement with many sponsoring industries.

Students following the Foundry Program are eligible to be considered for scholarship awards made available each semester by the Foundry Educational Foundation.

AVIATION SCIENCES
Joseph Dunlap, Director
Robert Aardenne
Patrick Benton
Thomas Decker
Maureen Pettitt
Ronald Sackett
Terry Michmethulien
Curtis Swanson
Leard Wylie

The School of Aviation Sciences offers the following curricula:
- Aviation Flight Science — B.S. degree
- Aviation Technology and Operations (Technical Management Option) — B.S. degree
- Aviation Technology and Operations (Maintenance Management Option) — B.S. degree
- Aircraft Maintenance Engineering Technology — B.S. degree

These programs are designed to produce graduates who think critically, communicate effectively, and participate meaningfully and ethically in the dynamic profession of aviation.

Enrollment
Enrollment will not be honored in any course if the student does not attend the first class meeting (lecture or lab), when other students are requesting that course unless prior arrangements have been made with the instructor.

Students not attending courses, for whatever reason, are responsible for processing drop slips with the Registration Office if fees are to be refunded.

Enrollment in flight courses may be subject to a waiting list which is maintained by the department and according to established criteria for seniority.

Transfer Credit
Transfer credit for FAA certification may be accepted providing the courses were taken at another accredited collegiate institution. Although these transfer courses may be approved for AVS credit the use of these courses for AVS course substitution may not necessarily be approved.

Academic Advising
Students should contact an advisor as early as possible. The advisor is available to assist in the individual program planning, recommend electives appropriate to a student’s educational objectives, discuss employment opportunities, and help solve academic problems. Substitutions and transfer credit must be approved by the advisor, the curriculum committee, and the director. The academic advisor is located in room 2038, Kohrman Hall, phone (616) 387-4033. Because of the prerequisites and the limited offering times, students must consult an academic advisor for proper course sequence.

Approved Electives
Electives must be approved by the department academic advisor. While choice of electives is intended to provide flexibility for students, they must be selected to provide a thrust and add strength to the individual’s program. Non-related courses will not normally be approved.

Gate Courses
Certain courses are considered gate courses and are required to be completed with a grade of “C” or better prior to enrolling in upper division courses. Upon proper completion of the gate courses, students must contact an advisor to be allowed to enroll in upper division courses. This is not an automatic process. This policy does not apply to the Aviation Flight Science curriculum.

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 $800 to $3,000, depending on the course. Flight fees are based on the average flight time required to complete the course. Students may require additional or less instruction. Refund of flight fees is subject to departmental refund policy, depending on whether a student completes a course of instruction or withdraws. Flight fees are due at the beginning of the semester.

Students are required to have their own tools for courses required for the Airframe and Powerplant Certificate. A basic set of required tools may be purchased for approximately $150. Class-related charges are assigned for some laboratory courses to help cover the cost of materials and services. Current non-flight lab fees range from $10-$20.

Aircraft Maintenance Engineering Technology
Bachelor of Science Degree
The aircraft maintenance engineering technology curriculum provides preparation for a variety of positions in the demanding field of aircraft maintenance including such areas as: performance engineering/maintenance liaison, maintenance logistics, flight test engineering, product technical support, and aircraft maintenance engineering. Satisfactory completion of all requirements prepares one to take the Airframe and Powerplant written and practical examinations from the Federal Aviation Administration.

Baccalaureate Writing Requirement
Students who have chosen the Aircraft Maintenance Engineering Technology curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing AVS 313 Aircraft Electrical Systems and AVS 415 Aircraft Turbine Powerplants.

Requirements
Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to University requirements stated elsewhere in the bulletin:
1. A “C” average or better must be earned in required courses with an AVS, ECE, CMD, IME, or ME prefix.
2. No more than two grades of “D” or “DC” in courses presented for graduation may be counted for graduation.
3. Complete the following program of 142 semester credit hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall, plus two spring sessions and a summer session. Courses listed in darker italic print must be complete with at least a “C” prior to enrolling in upper division courses.

Courses listed in darker italic print must be complete with at least a “C” prior to enrolling in upper division courses.
First Semester — 17 hours
AVS 120 Introduction to Aviation 2
CS 105 Introduction to Computers 3
IME 102 Technical Communication 3
MATH 118 Pre-Calculus Mathematics 4
PHYS 113 General Physics I 4
PHYS 114 General Physics I Lab 1

Second Semester — 17 hours
AVS 118 Aircraft Structures 3
IME 142 Engineering Graphics 3
MATH 200 Calculus with Applications 4
AVS 121 Aerodynamics and Performance 2
PHYS 115 General Physics II 4
PHYS 116 General Physics II Lab 1

Third Semester — 15 hours
AVS 117 Aircraft Reciprocating Powerplant 4
ECE 100 Fundamentals of Circuits and Electronics 3
CHEM 103 General Chemistry I 4
AREA I Humanities/Fine Arts* 3
PEGN Physical Education 1

Fourth Semester — 17 hours
AVS 213 Airframe Hydraulics, Pneumatic and Auxiliary Systems 4
CMD 256 Properties of Materials 4
IME 222 Fuels and Lubricants 3
COM 170 Interpersonal Communication I 3
ECE 10 Fundamentals of Electronics and Machines 3

Spring — 5 hours
AVS 119 Reciprocating Powerplant Overhaul 2
AVS 216 Aircraft Structural Repair 3

Fifth Semester — 15 hours
IME 281 Statics and Strength of Materials 4
AVS 313 Aircraft Electrical Systems 3
ECON 201 Principles of Economics 3
MATH 260 Elementary Statistics 4
PEGN Physical Education 1

Sixth Semester — 16 hours
AVS 116 Aircraft Propellers 2
AVS 311 Powerplant Systems Evaluation and Testing 4
AVS 316 Avionics Systems 4
IME 383 Thermodynamics 2
IME 384 Fluid Mechanics and Hydraulics 2
AREA II Social/Behavioral Science* 3

Spring/Summer — 10 hours
AVS 312 Powerplant Service and Management 5
AVS 318 Aircraft Service and Management 5

Seventh Semester — 15 hours
AVS 315 Propulsion System Performance 3
AVS 415 Aircraft Turbine Powerplants 4
AVS 416 Maintenance Regulations 2
AVS 418 System Reliability and Maintainability 3
AVS 419 Advanced Maintenance Systems 3

Eighth Semester — 15 hours
IME 422 Conference Leadership 3
ME 375 Experimental Stress Analysis 3
Approved Elective 3
AREA I Humanities/Fine Arts* 3
AREA IV Non-Western World* 3

* At least two of these courses must be at the 300-400 level.

Aviation Flight Science

Baccalaureate Writing Requirement

Students who have chosen the Aviation Flight Science curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing BIS 340 Principles of Business Communication.

Requirements

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to University requirements stated elsewhere in this bulletin:

1. A "C" average or better must be earned in required courses with an AVS prefix.
2. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.

Aviation Flight Science — 127 hours

Enrollment in flight courses may be subject to a waiting list. Candidates for flight courses must complete an application at the aviation building to be considered for enrollment in these courses. Registration is administered by the School of Aviation Sciences.

Students will be entitled to enroll in this curriculum and the flight courses on the basis of results of the School'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
IME 102 Technical Communication 3
PHYS 107 Elementary Physics 4
PHYS 108 Elementary Physics Lab 1
PSY 100 General Psychology 3

Second Semester — 18 hours
AVS 121 Aerodynamics and Performance 2
BIS 102 Introduction to Information Processing 3
CHEM 103 General Chemistry I 4
GEOG 105 Physical Geography 4
MATH 200 Calculus with Applications 4
PEGN Physical Education 1

Third Semester — 14 hours
AVS 122 Aviation Systems 3
GEOG 225 Introduction to Meteorology and Climatology 4
MATH 216 Business Statistics 3
PEGN Physical Education 1
Approved History Elective 3

Fourth Semester — 14 hours
AVS 205 Aviation Safety 2
AVS 212 Aviation Meteorology 2
BIS 260 Microcomputer Business Applications 3
ECON 201 Principles of Microeconomics 3
GEOG 100 World Ecological Problems and Man 4

Fifth Semester — 18 hours
BIS 340 Principles of Business Communications 3
MGMT 300 Fundamentals of Management 3
MGMT 410 Multinational Management 3

Sixth Semester — 15 hours
AVS 206 Flight Physiology 2
AVS 207 Crew Resources Management 2
AVS 307 Advanced Aircraft Systems 3
AVS 319 Aviation Legislation 3
AVS 321 Professional Flight I 5

Seventh Semester — 16 hours
AVS 306 Advanced Aerodynamics and Performance 3
AVS 322 Global Navigation and International Flight 3
AVS 323 Professional Flight II 5
AVS 327 Airline Operations and Administration 3
AVS 411 Airline Flight Operations 2

Eighth Semester — 16 hours
AVS 325 Professional Flight III 5
AVS 412 Flight Operations Analysis 2
BIS 350 Management Information Systems 3
AVS OR MGMT Approved Elective* 3
AVS OR MGMT Approved Elective* 3
Add 4* Must be upper division courses.

Aviation Technology and Operations

Bachelor of Science Degree

The aviation technology and operations curriculum provides preparation for a variety of positions in operations management or technical support areas of the aviation industry. The technical management option leads to careers in areas such as technical sales or service, production, and general aviation management. The aviation maintenance management option emphasizes aircraft systems, reliability and maintainability, licensing requirements, and repair facility management.

Baccalaureate Writing Requirement

Students who have chosen the Aviation Technology and Operations curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing AVS 313 Aircraft Electrical Systems and AVS 415 Aircraft Turbine Powerplants.

Requirements

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to University requirements stated elsewhere in this bulletin:

1. A "C" average or better must be earned in required courses with an AVS prefix.
2. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.

A. TECHNICAL MANAGEMENT OPTION — 129 hours

Fall Semester — 15 hours
AVS 120 Introduction to Aviation 2
MATH 200 Calculus with Applications 4
PHYS 107 Elementary Physics 4

Spring Semester — 12 hours
AVS 213 Airframe Hydraulics, Pneumatic and Auxiliary Systems 4
CHEM 103 General Chemistry I 4
CARD 170 Interpersonal Communication 3
ECE 100 Fundamentals of Circuits and Electronics 3

Summer Semester — 12 hours
AVS 116 Aircraft Propellers 2
AVS 311 Powerplant Systems Evaluation and Testing 4
AVS 316 Avionics Systems 4
IME 383 Thermodynamics 2
IME 384 Fluid Mechanics and Hydraulics 2

Area I Humanities/Fine Arts* 3
Area IV Non-Western World* 3

MGMT 453 Organizational Behavior 3
AREA IV Non-Western World* 3
AREA I Humanities/Fine Arts* 3

Sixth Semester — 15 hours
AVS 213 Aircraft Structures 3
IME 142 Engineering Graphics 3
MATH 200 Calculus with Applications 4

Seventh Semester — 16 hours
AVS 315 Propulsion System Performance 3
AVS 415 Aircraft Turbine Powerplants 4
AVS 416 Maintenance Regulations 2
AVS 418 System Reliability and Maintainability 3
AVS 419 Advanced Maintenance Systems 3

Eighth Semester — 16 hours
IME 422 Conference Leadership 3
ME 375 Experimental Stress Analysis 3
Approved Elective 3

Area I Humanities/Fine Arts* 3
Area IV Non-Western World* 3

MGMT 300 Fundamentals of Management 3
MGMT 410 Multinational Management 3

A. TECHNICAL MANAGEMENT OPTION — 129 hours

Fall Semester — 15 hours
AVS 120 Introduction to Aviation 2
MATH 200 Calculus with Applications 4
PHYS 107 Elementary Physics 4

Spring Semester — 12 hours
AVS 213 Airframe Hydraulics, Pneumatic and Auxiliary Systems 4
CHEM 103 General Chemistry I 4
CARD 170 Interpersonal Communication 3
ECE 100 Fundamentals of Circuits and Electronics 3

Summer Semester — 12 hours
AVS 116 Aircraft Propellers 2
AVS 311 Powerplant Systems Evaluation and Testing 4
AVS 316 Avionics Systems 4
IME 383 Thermodynamics 2
IME 384 Fluid Mechanics and Hydraulics 2

Area I Humanities/Fine Arts* 3
Area IV Non-Western World* 3

MGMT 453 Organizational Behavior 3
AREA IV Non-Western World* 3
AREA I Humanities/Fine Arts* 3

Sixth Semester — 15 hours
AVS 213 Aircraft Structures 3
IME 142 Engineering Graphics 3
MATH 200 Calculus with Applications 4

Seventh Semester — 16 hours
AVS 315 Propulsion System Performance 3
AVS 415 Aircraft Turbine Powerplants 4
AVS 416 Maintenance Regulations 2
AVS 418 System Reliability and Maintainability 3
AVS 419 Advanced Maintenance Systems 3

Eighth Semester — 16 hours
IME 422 Conference Leadership 3
ME 375 Experimental Stress Analysis 3
Approved Elective 3

Area I Humanities/Fine Arts* 3
Area IV Non-Western World* 3

MGMT 300 Fundamentals of Management 3
MGMT 410 Multinational Management 3

A. TECHNICAL MANAGEMENT OPTION — 129 hours

Fall Semester — 15 hours
AVS 120 Introduction to Aviation 2
MATH 200 Calculus with Applications 4
PHYS 107 Elementary Physics 4
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<td>IME 142</td>
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**B. AVIATION MAINTENANCE MANAGEMENT OPTION — 138 hours**

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<td>Aerodynamics and Performance</td>
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<td>Fall</td>
<td>AVS 280</td>
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<td></td>
<td>AVS 311</td>
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<tr>
<td></td>
<td>BIS 340</td>
<td>Business Communication</td>
<td>3</td>
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<tr>
<td></td>
<td>AREA II</td>
<td>Social/Behavioral Science*</td>
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<td>Winter</td>
<td>AVS 313</td>
<td>Aircraft Electrical Systems</td>
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<td></td>
<td>AVS 310</td>
<td>Airport Management</td>
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<td></td>
<td>AVS 327</td>
<td>Airline Operations and Administration</td>
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<td></td>
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<td>Quality Assurance and Control</td>
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<td>FCL 380</td>
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<td>MGMT 300</td>
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<td>Aircraft Turbine Powerplants</td>
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<td>IME 320</td>
<td>Engineering Cost Analysis</td>
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<td></td>
<td>MGMT 350</td>
<td>Quantitative Methods for Business Decisions</td>
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<td>Managerial Economics</td>
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<td>Marketing Principles</td>
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<td>AREA I</td>
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**AREA IV Non-Western World* — 3**

**General Education Electives** — 4

**PEGN Physical Education** — 1

* At least two of these courses must be at the 300-400 level.

**Aviation Science Courses (AVS)**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>Fall</td>
<td>AVS 116</td>
<td>Aircraft Propellers (1-3)</td>
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<td>AVS 117</td>
<td>Aircraft Reciprocating Powerplants</td>
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<td>AVS 119</td>
<td>Reciprocating Powerplant Overhaul</td>
<td>2 hrs</td>
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<td></td>
<td>AVS 120</td>
<td>Introduction to Aviation</td>
<td>2 hrs</td>
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<tr>
<td></td>
<td>AVS 121</td>
<td>Aircraft Structures</td>
<td>3 hrs</td>
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<tr>
<td></td>
<td>MATH 200</td>
<td>Calculus with Applications</td>
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<tr>
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<td>PHYS 107</td>
<td>Elementary Physics</td>
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<tr>
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<td>PHYS 108</td>
<td>Elementary Physics Lab</td>
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<tr>
<td></td>
<td>CS 106</td>
<td>BASIC for Engineers</td>
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<td>Spring/Summer</td>
<td>AVS 312</td>
<td>Powerplant Service and Management</td>
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<td>AVS 318</td>
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<td>AVS 415</td>
<td>Propulsion System</td>
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<td>AVS 416</td>
<td>Maintenance Regulations</td>
<td>2 hrs</td>
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<td>AVS 417</td>
<td>System Reliability and Maintainability</td>
<td>3 hrs</td>
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<td>AVS 419</td>
<td>Advanced Maintenance Systems</td>
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<td>BIS 340</td>
<td>Business Communication</td>
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<td>Marketing Principles</td>
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**AVIATION SCIENCES 213**
AVS 212 Avi ation Meteorology
2 hrs.
Application of meteorology principles to flight operations. Topics include aviation forecasts, weather maps, NOTAMS, international weather patterns and information formats, weather routing, turbulence, and the role and responsibilities of ATC in weather observation and reporting. Prerequisite: GEOG 225.

AVS 213 Airframe Hydraulic, Pneumatic, and Auxiliary Systems (2-4)
4 hrs.
Classroom and laboratory study of aircraft hydraulic and pneumatic components and systems, air conditioning and pressurization, fire detection and extinguishing systems and other auxiliary systems. Prerequisites: AVS 120, AVS 121, CS 106 or concurrently.

AVS 216 Aircraft Structural Repair (0-6)
3 hrs.
Major structural repair methods including procedures for metal, plastics, composites, and welded structures. Prerequisites: AVS 118, CMD 256.

AVS 277 Flight Simulator Laboratory
1 hr.
Ten hours of individual ground instruction and a 10 hour block of instruction in one of the university’s flight simulators applicable to initial training in instruments, flight instruction on multi-engine, for recurrency training, or for preparation of FAA and airline flight checks.

AVS 280 Transportation Technology: Policy, Perils, and Promise (3-0)
3 hrs.
Introduction to transportation technologies. Survey the development of transportation policy and the key players in policy decision making. Case studies will be used to explore issues in the practical application of transportation technologies impact society, including demographics, work, and the environment.

AVS 297 Private Pilot Airplane (0-3)
1 hr.
Private pilot ground, flight, and individual instruction leading to private pilot airplane certification. Progression based on performance based standards with a minimum of thirty-five hours of flight and thirty-five hours of ground instruction. Credit/No Credit only.

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 301 Commercial Flight I (0-5.5)
3 hrs.
Initial flight, ground, and simulator instruction in aeronautical skills and knowledge necessary for commercial flying application. Includes introduction to high performance aircraft and instrument flight. Prerequisites: Private pilot certificate and second class medical certificate.

AVS 302 Aircraft Systems and Operations (1-0)
1 hr.
Aircraft pre-flight and post-flight requirements, specifications, equipment requirements, maintenance systems, airworthiness determination, special operation needs, dispatching, winter operations, and related topics.

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 309 Air Traffic Control (2-0)
2 hrs.
An overview of the existing and proposed national airspace system. Includes basic air traffic control procedures, the role of the air traffic control center, approach control, control towers, and flight service stations.

AVS 310 Airport Management (3-0)
3 hrs.
An introduction to airport operation and the duties of the airport manager. Topics studied will include the relationship between airport and community, legislation affecting airports, and planning, organizing, financing, and developing programs and services. Prerequisite: Junior standing in aviation curricula or approval of instructor.

AVS 311 Powerplant Systems Evaluation and Testing (3-2)
4 hrs.
Principles of reciprocating engine fuel, induction, exhaust, ignition, and propeller systems. Classroom and lab experiences covering engine instruments, engine operation and testing. Prerequisites: AVS 117, ECE 101.

AVS 312 Powerplant Service and Management (2-10)
5 hrs.
Aircraft powerplant inspection, repair and overhaul procedures including reciprocating engines, turbine engine hot section, propellers, and drive systems. Emphasis on repair station procedures, organization, and management. Prerequisites: AVS 311, MGMT 300, and consent of department.

AVS 313 Aircraft Electrical Systems (2-3)
3 hrs.
A review of basic electricity, study and laboratory practice in aircraft electrical components and systems, electrical instrumentation, and auto pilot systems. Prerequisites: AVS 120, AVS 121, ECE 101.

AVS 315 Propulsion System Performance (0-6)
3 hrs.
Operation, testing, and diagnosis of aircraft engines and accessory systems. Application of instrumentation, dynamometers, and service test equipment. Prerequisites: AVS 312, ECE 101.

AVS 316 Avionics Systems (2-2)
3 hrs.
Advanced topics in airborne electrical and electronics systems including multiplexing, flight control, and navigation applications. Prerequisite: AVS 313.

AVS 318 Aircraft Service and Management (2-10)
5 hrs.
Airframe inspection, repair, and servicing including routine and 100-hour inspections, minor repairs, and preventive maintenance.

This study will also include management aspects of FBO service centers and related service management problems and solutions. Prerequisites: AVS 213, AVS 216, AVS 312.

AVS 319 Aviation Legislation
3 hrs.
Legal principles governing the aviation industry. Historical precedents, regulatory statutes, standards, contracts, liability and insurance, current developments and court decisions.

AVS 321 Professional Flight I
5 hrs.
Initial flight, ground, and simulator instruction in aeronautical skills and knowledge necessary for private and commercial application. Includes introduction to high performance aircraft and instrument flight. Prerequisite: Second class medical certificate, AVS 120, AVS 121, AVS 122, and AVS 205.

AVS 322 Global Navigation and International Flight Planning
3 hrs.
Advanced navigation systems and equipment including RNAV, pictorial displays, flight directors, airborne radar, INS, IRS, OMEGA, GLONASS, SATCOM, and GPS. Principles of worldwide navigation including time zones, spherical distance and course, and electronic calculations for decision making. Long range planning including air transport performance. Prerequisites: AVS 321.

AVS 323 Professional Flight II
5 hrs.
Continuing flight, ground, and simulator instruction in aeronautical skills, knowledge, complex aircraft and experience pursuant to commercial-instrument pilot certification. Particular emphasis upon use of air traffic facilities and airways in visual as well as instrument environments. Prerequisites: AVS 321, AVS 322, or taking concurrently.

AVS 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. Prerequisite: AVS 323.

AVS 327 Airline Operations and Administration
3 hrs.
Economic characteristics of the airline industry and air carrier ownership and organization. Revenues, costs, and productivity. Route structure and scheduling. International competition and regulation. Prerequisite: AVS 120.

AVS 330 Basic Aerobatic Flight
1 hr.
Ground and flight instruction in basic aerobatic flight maneuvers. This course will improve student capabilities in aircraft handling, self-confidence, ability to handle critical attitude recovery, and a greater understanding of aerodynamics. Prerequisite: Private pilot certificate.

AVS 331 Mountain Flying, Survival and Rescue
3 hrs.
A classroom and laboratory study of the knowledge and skills required to operate aircraft safely in the most rugged mountain terrain. Course teaches mountain flying techniques, practical and psychological aspects of mountain survival, and the operation and control of mountain rescue efforts. Prerequisite: AVS 325
AVS 332 Single Engine Seaplane
1 hr.
Ground and flight instruction which would add a seaplane single-engine class rating to private or commercial pilot certificate holders. Prerequisite: Private pilot certificate.

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. Credit/No Credit only. Prerequisite: Consent of department.

AVS 400 Aerodynamics and Flight Principles (2-0)
2 hrs.
Aerodynamics and flight principles related to airplane operation and performance. An advanced course for pilots to enable them to understand and predict airplane performance in a wide range of flight applications. Prerequisites: AVS 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 305 or equivalent.

AVS 403 Flight Instrutor Fundamentals (2-0)
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.

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 aircraft 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 407 Certified Multi-Engine Flight Instructor
1 hr.
Ground and flight instruction leading to certification as a multi-engine flight instructor. Prerequisites: AVS 406, AVS 404, and AVS 402.

AVS 409 Multi-Engine Flight Instructor
3 hrs.
Instructional techniques necessary to qualify for an airplane multi-engine flight instructor rating. Topics include multi-engine aerodynamics and performance, analysis of multi-engine procedures and maneuvers, multi-instructor responsibilities, common student errors, and flight safety considerations. Prerequisites: AVS 325, AVS 406.

AVS 411 Airline Flight Operations
2 hrs.

AVS 412 Flight Operations Analysis
2 hrs.
Utilization of aircraft performance, systems, and resources (both human and information) to enhance flight operations and human performance. Prerequisite: AVS 411 or taking concurrently.

AVS 415 Aircraft Turbine Powerplants (3-3)
4 hrs.
Reaction engine principles, gas turbine engine construction, design and operation. Includes testing and operation of jet aircraft powerplant systems. Prerequisites: CS 106, MATH 200 and AVS 313.

AVS 416 Maintenance Regulations (2-0)
2 hrs.
Regulatory impact on maintenance practices, legal considerations, specific requirements for licensing and certification of airmen, repair stations, and aircraft. Prerequisites: AVS 312, AVS 318.

AVS 418 System Reliability and Maintainability (3-0)
3 hrs.
A review of aircraft maintenance practices. Monitoring and control procedures; analysis of data essential for planning and quality control. Database management applications. Prerequisites: AVS 311, AVS 318, MATH 260, CS 106.

AVS 419 Advanced Maintenance Systems (2-2)
3 hrs.
This is the final course taken prior to FAA certification of the airframe and powerplant mechanic. Each subject area required for certification will be studied and the student will demonstrate competence by passing an FAA written, oral, and practical examination administered by a designated mechanic examiner. Students electing this course must have completed or be currently completing all courses required in the special program.

AVS 493 High-Performance Transition
2 hrs.
Ground and flight instruction that will lead to a high-altitude endurance which will allow the holder of the endorsement to operate and aircraft above 25,000 ft 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 initial flight training. 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 for a maximum of six credit hours. Prerequisite: Consent of department.

CONSTRUCTION ENGINEERING, MATERIALS ENGINEERING, AND INDUSTRIAL DESIGN

Prina Ari-Gur, Chair
Dmitry Azrikan
Frank Mwakasisi
Abiodun Olowu
Roman J. Rabiej
Parviz Rad
Anil Sawhney
Vladimir Tsukruk

Adjunct Faculty
Richard Baker
Rex Bell
Stuart Eddy
Norman Hamann
Patrick Hughes
David Johnson
Ralph Larson
David Shannon
Norman Smith
David Wick

The Department of Construction Engineering, Materials Engineering, and Industrial Design offers the following curricula:

Construction Engineering and Management—B.S. degree
Industrial Design—B.S. degree
Materials Engineering—B.S.E. 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.

Enrollment

Enrollment may not be honored in any course if the student misses any of the class meetings (lecture or lab) during the drop/add period. Students not attending courses are responsible for processing drop slips with the Registrar Office if fees are to be refunded.

Industrial Design students must satisfactorily complete ("C" or better) basic writing, mathematics, and science courses, and CMD 143 and IME 142 before enrolling in upper level Construction Engineering, Materials Engineering, and Industrial Design (300-400) courses. Students should contact their academic advisor for the list of required courses that applies to their curriculum. These basic courses are shown in darker italic print in curriculum displays.

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 Information

General information on admission, advising, scholarships, and special programs of interest to students in this department may be found at the beginning of the College of Engineering and Applied Sciences section of the catalog.

Credit by examination may be allowed with appropriate evidence of preparation, experience, or certification. Please refer to the University’s comprehensive examination policy.

Additional Costs

Class-related charges are assigned for some laboratory courses to help cover cost of materials and services.

Cooperative Education

Students who elect the cooperative plan of education in this plan, the student alternates a semester of study on campus with a semester of compensated industrial experience. Students may work in their area of study, gaining valuable professional experience.

Approved Electives

Electives must be approved by the department and/or academic advisor. While choice of electives is intended to provide flexibility for students, they must be selected to provide a thrust and add strength to the individual’s program. Non-related courses will not normally be approved.

Lists of approved electives are available from the academic advising office.

Construction Engineering and Management

Bachelor of Science in Engineering (Construction Management) Degree

The construction engineering and management curriculum prepares students for entry positions in construction planning, management, or development. Technical, business, and human relations knowledge and skills are developed in classroom settings and on residential and commercial construction job sites.

Baccalaureate Writing Requirement

Students who have chosen the Construction Engineering and Management curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing CMD 483 Project Design and Control and CMD 485 Senior Project.

Requirements

Candidates for the Bachelor of Science in Engineering (Construction Management) degree must complete the following program of 136 semester credit hours as well as University requirements stated elsewhere in this catalog:

1. To satisfy professional engineering accreditation requirements, all students must complete a sequence of two courses (minimum of six credit hours in the humanities, fine arts, social sciences, and/or behavioral sciences). The sequence must begin with a 100-200 level course and conclude with a course at the 300-400 level. Both courses must have the same course prefix, must provide depth, and must not be a selection of unrelated introductory courses. The sequence may be selected from General Education Areas I, II 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 science, and/or behavioral sciences.
2. A "C" average or better must be earned in required courses with a CMD, ECE, 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 136 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 — 18 hours

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<td>CMD 131</td>
<td>Introduction to Building Practices</td>
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<tr>
<td>CMD 149</td>
<td>Introduction to Architectural Drafting</td>
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<tr>
<td>CHEM 101 or 102</td>
<td>General Chemistry I (AREA III)</td>
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<tr>
<td>IME 101</td>
<td>Technical Communication (AREA VI)</td>
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<td>MATH 122</td>
<td>Calculus I (AREA III)</td>
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Second Semester — 18 hours

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<tr>
<td>CMD 233</td>
<td>Construction Codes and Specifications</td>
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<td>CS 106</td>
<td>BASIC for Engineers</td>
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<tr>
<td>ECON</td>
<td>Principles of Economics (AREA II)</td>
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<td>MATH 123</td>
<td>Calculus II (AREA III)</td>
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<td>ME 250</td>
<td>Material Science I</td>
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Third Semester — 18 hours

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<td>Engineering Statistics</td>
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<td>ME 256</td>
<td>Statics</td>
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<td>ME 232</td>
<td>Thermodynamics</td>
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<td>AREA II</td>
<td>General Education*</td>
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<td>PHYS 205</td>
<td>Mechanics and Heat (AREA III)</td>
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<td>Mechanics and Heat Lab</td>
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Fourth Semester — 17 hours

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<td>Dynamics</td>
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<tr>
<td>MATH 272</td>
<td>Vector and Multivariate Calculus</td>
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<tr>
<td>ME 257</td>
<td>Mechanics of Materials</td>
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<tr>
<td>PHYS 207</td>
<td>Electricity and Light (AREA III)</td>
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<td>PHYS 208</td>
<td>Electricity and Light Lab</td>
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Fifth Semester — 17 hours

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<tr>
<td>CMD 236</td>
<td>Construction Measurements and Layout</td>
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<tr>
<td>CMD 238</td>
<td>Construction Materials and Metamorphosis</td>
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<tr>
<td>CMD 336</td>
<td>Soil Mechanics and Foundations</td>
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<tr>
<td>ECE 210</td>
<td>Circuit Analysis</td>
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<tr>
<td>ECE 374</td>
<td>Intro to Linear Algebra and Differential Equations*</td>
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</tr>
</tbody>
</table>

Sixth Semester — 16 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTY 210</td>
<td>Principles of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>CMD 451</td>
<td>Construction Financial and Scheduling</td>
<td>3</td>
</tr>
<tr>
<td>CMD 436</td>
<td>Construction Estimating, Bidding and Cost Control</td>
<td>4</td>
</tr>
<tr>
<td>ME 356</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 300</td>
<td>Fundamentals of Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Seventh Semester — 16 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMD 386</td>
<td>Structural Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>CMD 438</td>
<td>Construction Project Management</td>
<td>3</td>
</tr>
<tr>
<td>CMD 483</td>
<td>Project Design and Control</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 211</td>
<td>Principles of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BIS 340</td>
<td>Business Communication</td>
<td>3</td>
</tr>
<tr>
<td>AREA IV</td>
<td>General Education*</td>
<td>4</td>
</tr>
</tbody>
</table>

Eighth Semester — 16 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMD 485</td>
<td>Senior Project</td>
<td>3</td>
</tr>
<tr>
<td>FCL 320</td>
<td>Business Finance</td>
<td>3</td>
</tr>
<tr>
<td>FCL 380</td>
<td>Legal Environment</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 370</td>
<td>Marketing</td>
<td>3</td>
</tr>
<tr>
<td>AREA I</td>
<td>General Education*</td>
<td>4</td>
</tr>
</tbody>
</table>

* At least two of these courses must be at the 300-400 level.

Industrial Design

Bachelor of Science Degree

The curriculum in industrial design is a blend of technology, business, art, and general studies with courses in mechanical design, drafting, illustration, processing, design philosophy, and practices. This program prepares designers with the aesthetic and technical potential to set new directions in product development and design, based on knowledge of materials, processes, quality, and production standards.

Baccalaureate Writing Requirement

Students who have chosen the Industrial Design curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing CMD 443 ID Thesis and Project I and CMD 447 ID Thesis and Project II.

Requirements

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to University requirements stated elsewhere in this catalog:

1. A "C" average or better must be earned in required courses with an CMD or IME prefix.
2. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.
3. Complete the following program of 130 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 enrolling 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 courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 103 or 102</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CMD 143</td>
<td>Fundamentals of Engineering</td>
<td>3</td>
</tr>
<tr>
<td>IME 102</td>
<td>Technical Communication (AREA IV)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 118</td>
<td>Precalculus Mathematics</td>
<td>4</td>
</tr>
</tbody>
</table>

First Semester — 17 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 101</td>
<td>Foundation Drawing</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 103</td>
<td>General Chemistry (AREA III)</td>
<td>4</td>
</tr>
<tr>
<td>CMD 143</td>
<td>Fundamentals of Engineering</td>
<td>3</td>
</tr>
<tr>
<td>IME 102</td>
<td>Technical Communication (AREA IV)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 118</td>
<td>Precalculus Mathematics</td>
<td>4</td>
</tr>
</tbody>
</table>

Second Semester — 16 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 102</td>
<td>Foundation 2D Design</td>
<td>3</td>
</tr>
<tr>
<td>ART 103</td>
<td>Theory of Art</td>
<td>3</td>
</tr>
<tr>
<td>CMD 147</td>
<td>Principles of Industrial Form</td>
<td>3</td>
</tr>
<tr>
<td>IME 142</td>
<td>Engineering Graphics</td>
<td>3</td>
</tr>
</tbody>
</table>
must complete a sequence of two courses (minimum of six credit hours in the humanities, fine arts, social sciences, and/or behavioral sciences). The sequence must begin with a 100-200 level course and conclude with a course at the 300-400 level. Both courses must have the same course prefix, must provide depth, and must not be a selection of unrelated introductory courses. The sequence may be selected from General Education Areas I, II, III 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 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 127 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 italic print.

First Semester — 17 hours
IME 142 Engineering Graphics 3
CHEM 101 or 102 General Chemistry I (AREA III) 4
IME 102 Technical Communication (AREA IV) 3
MATH 123 Calculus I (AREA I) 4
AREA I General Education 3

Second Semester — 16 hours
CHEM 120 General Chemistry II (AREA I) 4
CS 306 Introduction to Computer Programming: FORTRAN 3
MATH 123 Calculus II (AREA I) 4
PHYS 205 Electricity and Heat (AREA III) 4
PHYS 206 Mechanics and Heat Lab 1
PEGN Physical Education 1

Third Semester — 17 hours
IME 154 Machining Fundamentals 3
ECE 210 Circuit Analysis 4
ME 250 Material Science 3
CHEM 243 Product Design Methodology II 3
AREA I General Education 3

Fourth Semester — 17 hours
ME 253 Statics and Mechanics of Materials 4
IME 261 Engineering Statistics 3
MATH 272 Vector and Multivariate Calculus 3
IME 247 Product Design 3
AREA II General Education 3

Fifth Semester — 15 hours
CMD 450 Engineering Polymers and Composites 3
CMD 471 Thermodynamics of Materials 4
CHEM 365 Introduction to Organic Chemistry 4
IME 310 Engineering Economy 3

Seventh Semester — 16 hours
GEOG 336 Optical Mineralogy 3
CMD 476 Failure Analysis and Corrosion 3
IME 352 Metal Casting 3
CMD 483 Project Design and Control 1
AREA IV General Education 4
AREA II General Education 3

Eighth Semester — 15 hours
CMD 434 Wood Testing 3
CMD 457 Mechanical Behavior of Materials 3
CMD 475 Microstructure/Polymer and Ceramics 3
CMD 485 Senior Project 3
AREA II General Education 3

* At least two of these courses must be at the 300-400 level.

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
1. Construction and Woods
2. Mechanical Engineering
3. General
5. and 7. Materials
8. General
9. Special

CMD 131 Introduction to Building Practices (3-0) 3 hrs.
An overview of all the operations involved in constructing a residential dwelling. Emphasis is placed on understanding common practices, materials, nomenclature, and blueprint reading in construction. Careers in the construction industry are discussed. Course provides an historical perspective and introduces the student to computer usage in construction.

CMD 132 Wood Processing (2-3) 3 hrs.
Selecting materials for proper use, seasoning and grading of lumber, fabricated wood products, and planning and layout. Joinery applications involving clamping, adhesives and fasteners. Also includes the use of hand tools, power hand tools, and introduction to machinery selection and application of finishing materials.

CMD 143 Industrial Design Fundamentals (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 will work on simple creative projects involving one to three parts objects and will learn basic methodology principles with emphasis on research and problem identification.
CMD 147 Principles of Industrial Design (0-4) 2 hrs.

CMD 149 Introduction to Architectural Drawing (2-3) 3 hrs.
Introduction to the tools and techniques to enable the student to read, compose and create architectural drawings related to interior design and construction.

CMD 201 History of Design I (3-0) 3 hrs.
This course is an introduction to the relationship between design and the history of culture and technology before the 20th century. Art, architecture, craft and design. History of styles.

CMD 202 History of Design II (3-0) 3 hrs.
Design history of the 20th century. Important social and technical developments which have influenced industrial priorities, markets and practices. Important people, movements, schools, and philosophies that have influenced the evolution of Industrial Design and related professions. The specific contribution of I.D. history in different European, Asian, and American countries. Prerequisite: CMD 201.

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 I (0-6) 3 hrs.
Development of fast, simple mock-ups and form studies using clay, paper, plastic foam, wire, plaster and other materials. Use hand tools. Creation of realistic looking models which reflect a high degree of craftsmanship. Use of power tools and machines. Use of plastic foam, plastics, wood and metal.

CMD 230 Machine Woodworking (2-3) 3 hrs.
Analysis and design of wood products, utilizing the structural, mechanical, and environmental effects on wood properties. Basic cutting theories, woodworking machine construction, and advanced manufacturing lines including the 32mm construction system and flat-line processing applications. Prerequisite: CMD 132.

CMD 233 Construction Codes and Specifications (3-0) 3 hrs.
Application of model codes to residential and commercial structures, nonstructural and structural plan review, fire codes, codes governing the installation of the electrical, plumbing and heating elements of the building, inspection techniques, and code administration. Prerequisite: CMD 131.

CMD 236 Construction Measurements and Layout (2-3) 3 hrs.
Construction surveying, building layout and structural alignment. Includes route alignment, topographic surveys, earthwork volume surveys, and preparation of reports. Prerequisites: CMD 149, IME 102, MATH 200.

CMD 237 Concrete Construction and Masonry (2-3) 3 hrs.
Design and control of concrete mixes. Form design, control tests for quality concrete, and reinforced concrete problems are practiced. Pre-stressed and post-tensioned concrete construction is included. Written 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 mixes 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 I (0-4) 2 hrs.
Introduction to product design methodology for mass-produced products. Human factors criteria in analysis and design. Application of user behavior research, anthropometric data and basic manufacturing processes to product concept ideation. Two- and three-dimensional communication techniques for design presentation. Prerequisites: CMD 147, Portfolio Review.

CMD 247 Product Design Methodology II (0-4) 2 hrs.
Design of product systems based on societal needs, human factors analysis and advanced manufacturing processes. Written and visual communication techniques for presentations. Prerequisites: CMD 243, CMD 201 and CMD 203.

CMD 256 Properties of Materials (3-3) 4 hrs.
Relationship of chemical and physical properties of solids; internal structure and response to their environment. Prerequisites: CHEM 103, PHYS 107 and PHYS 108 or PHYS 113 and PHYS 114, MATH 122 or MATH 200.

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 258 requirements. Prerequisites: CHEM 103, PHYS 107/108 or PHYS 113/114, MATH 200 or MATH 122, and an approved metallurgy course.

CMD 305 Model Construction II (0-6) 3 hrs.
Building working prototypes of simple devices and systems. Creation of advanced models with real finish, use of advanced processes and 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 wood-based materials, joint design, wood finishes and fasteners, and selection and application of finishes. The effect of human factors on the design of furniture and interiors is emphasized.

CMD 331 Upholstering and Wood Turning (2-3) 3 hrs.
Determination of ergonomic, structural, and material requirements 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 settlement. Foundation systems will include piles, drilled piers, caissons, lateral earth pressures, and soil pressure distribution. Prerequisites: CMD 237, IME 261, GEOL 130.

CMD 338 Soil Mechanics and Foundation Design (2-2) 3 hrs.

CMD 338 Mechanical/Electrical Systems (2-3) 3 hrs.
Selection of plumbing, electrical, heating, ventilation and air conditioning systems for commercial, industrial, and institutional buildings. Includes estimating costs of these systems and proper construction techniques of installation. Prerequisites: CMD 131, CMD 149, CS 105, PHYS 115 and 116.

CMD 343 Advanced Product Design (0-6) 3 hrs.
Design of product systems based on societal needs; human factors analysis and advanced manufacturing processes. Study of basic types of business organizations: sole proprietorships, partnerships and corporations. Study of legal considerations related to parents, copyrights, trademarks and trade secrets. Introduction to professional ethics. Prerequisites: CMD 247, CMD 202, CMD 206, Portfolio Review.

CMD 347 Product Design Practicum (0-6) 3 hrs.
Developing company-oriented products and systems for commercial and industrial markets; balancing between corporate and user needs. Prerequisites: CMD 343, CMD 305.

CMD 353 Physical Metallurgy (4-0) 4 hrs.
Introduction to electron theory of metals. Introduction to crystallography and x-ray diffraction, defect structure of metals and their application to solid state diffusion. Prerequisites: MATH 123 or MATH 200, PHYS 113 or PHYS 205, ME 250 or CMD 256.

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, column, and trusses). Develop an understanding of how structural systems behave under loads. Prerequisites: CMD 238, ME 256, ME 257, ME 258.
CONSTRUCTION ENGINEERING, MATERIALS ENGINEERING, AND INDUSTRIAL DESIGN 219

CMD 401 Computer-Aided Industrial Design Studio 3 hrs.
Introduction to the advanced professional computer-aided Industrial Design hardware and software. Photo-realistic computer rendering, animation, prototyping. Application of these processes in computer-aided manufacturing and interactive software design. Product development using only the computer. Prerequisites: CMD 246, CS 106.

CMD 431 Construction Planning and Scheduling (3-0) 3 hrs.
Construction Planning and control of construction projects are discussed. Scheduling techniques such as the critical path method (CPM) and the program evaluation and review technique (PERT) are covered. A scheduling software will be used. Prerequisites: CMD 238, IE 261.

CMD 432 Production Woodworking (2-3) 3 hrs.
Mass production techniques utilizing computer-aided design and manufacturing, material yield, production planning, sequence of operation, dimensional control, and interchangeability. Production methods as they affect quality of finished 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, classification 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 a standard quantity survey will be practiced. Computer application in construction estimating will be emphasized. Prerequisites: CMD 33, CMD 338.

CMD 434 Wood Testing (2-3) 3 hrs.
Testing materials for construction and furniture manufacturing. ASTM methods, analysis of stress, and failure characteristics to determine physical and mechanical properties. The relationship between wood structure, joint design, and fastening methods on structural integrity. Computer systems will be used in statistical analysis and graphing of experimental data. Prerequisite: CMD 230 or department approval.

CMD 435 Commercial Construction Methods (3-0) 3 hrs.
An introduction to the principles and practices that are peculiar to heavy construction. Covers excavating equipment, cranes, dewatering, drainage, and paving. Modern 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 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, pricing plans and specifications will be performed. Prerequisite: CMD 433.

CMD 438 Construction Project Management (3-0) 3 hrs.
Study characteristics of construction industry, project organizations, labor, material, and equipment utilization, construction productivity, value engineering, TQM, constructability, construction safety, contract types, and contract bonds. Prerequisites: CMD 431, CMD 436, MGMT 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 443 Industrial Design Thesis and Project I (0-6) 3 hrs.
A two-semester course using the knowledge and abilities acquired throughout the curricula. The first course focuses on Industrial Design related research based on user needs, environmental and social problems and on industry trends and developments. Advanced investigations in the student’s area of professional specialization, chosen in consultation with the faculty advisor of Industrial Design. Study and use of research techniques, report writing and design methodology. Prerequisites: CMD 347, CMD 246.

CMD 445 Product Design and Development (2-3) 3 hrs.
The team approach to the design and development of a product with complete analysis and documentation. The final presentation will include a model and written and oral reports. Prerequisites: CMD 242, CMD 243, CMD 265.

CMD 447 Industrial Design Thesis and Project II (0-6) 3 hrs.
In the second term of this course the student uses problem-solving principles and Industrial Design communication methodology to organize and present a faculty approved Senior Project. The concept is presented in verbal, graphic and three-dimensional both virtual and real. The Final Presentation involves use of photography, graphics, illustration, exhibit design, computer-aided design, video production and other media. Prerequisites: CMD 443, IE 442.

CMD 450 Engineering Polymers and Composites (2-3) 3 hrs.

CMD 454 Physical Metallurgy II (2-2) 3 hrs.
Introduction to X-ray diffraction of metals, phase diagrams and solid state phase changes and phase equilibrium. Prerequisite: IME 353.

CMD 457 Mechanical Behavior of Materials (3-0) 3 hrs.
Fundamentals of elasticity and plasticity theory. The mechanical and thermo-mechanical forming methods of materials. Prerequisites: CMD 256, CMD 281, MATH 200, and department approval for EE and CSE students.

CMD 471 Thermodynamics of Materials (4-0) 4 hrs.
Introduction to chemical metallurgy, thermodynamic functions associated with compounds, diffusion, phase equilibria and phase diagrams, extractive metallurgy, chemistry of ceramics. Prerequisites: ME 250, CHEM 430.

CMD 475 Microstructure of Polymers and Ceramics (3-0) 3 hrs.
Microstructure and physical properties. Microstructure of amorphous and crystalline polymers, solutions and gels, networks and blends, silicate ceramics, glasses, carbon based ceramics, and metal-ceramic composites. Prerequisites: PHYS 205, CMD 471, GEOG 335, CMD 450.

CMD 476 Failure Analysis and Corrosion (2-3) 3 hrs.
Theory, design implications and case studies in the following areas: elastic deformation, plastic deformation, creep, fracture, fatigue, corrosion and oxidation. A technical paper based on a project will be submitted at the end of the course. Prerequisites: CMD 471, CMD 353, IME 261, MATH 272, MATH 374.

CMD 483 Project Design and Control (1-0) 1 hr.
Problem definition, project planning and scheduling, follow-up and control techniques. Results in presentation and plan for senior project. 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. Prerequisites: CMD 483 and approved project.

CMD 495 Topics in Engineering (Var.) 1-6 hrs.
A specialized course dealing with some particular area of technology not usually included in other course offerings. May be repeated for credit with different topics to a maximum of six credit hours. Prerequisite: Consent of department.

CMD 499 Independent Studies (Var.) 1-3 hrs.
An individual study program to supplement regular course work, arranged in consultation with a study supervisor. One to three hours credit per semester. May be repeated not to exceed six credit hours. Prerequisite: Consent of department.

CMD 532 Wood Science and Engineering (2-2) 3 hrs.
Scientific study of dendrology and forest products industry. A study of the relationship between the macro and microscopic structure in wood and wood-based composites as they
relate to Engineering Design. Laboratory activities will involve machining theory, wood fluid relationships and wood stabilization. Prequisites: 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.

ELECTRICAL AND COMPUTER ENGINEERING
S. Hossein Mousavinezhad, Chair
Raghvendra Gejji
John W. Giesink
Janos Granier
Garrison W. Greenwood
Xiaobu Hu
Dean Johnson
Joseph Kelemen
John L. Mason
Marek Nikodem
Frank Severance
Lambert R. VanderKooi

The Department of Electrical and Computer Engineering offers curricula designed primarily to prepare personnel for professional careers in computer engineering or electrical engineering.

Cooperative Education
Students may elect the cooperative plan of education. In this plan, the student alternates a semester of study on campus with a semester of compensated industrial experience. Students may work in any area in which computer engineers or electrical engineers may be found.

Academic Advising
Students should contact the electrical/computer engineering academic advisor as early as possible. The advisor is available to assist in individual program planning, to recommend electives appropriate to a student’s educational objectives, to discuss employment opportunities, and to help solve academic problems. Substitutions and transfer credit must be approved by a departmental advisor, curriculum committee, and department chair. The academic advisor is located in Room 2038, Kohrman Hall, (616) 387-4033.

Additional Information
General information regarding advising, scholarships, and special programs of interest to students in this department may be found under the beginning of the Engineering and Applied Sciences' section of the catalog. Enrollment will not be honored in any course when other students are requesting that course if the student does not attend the first class meeting (lecture or lab) unless prior arrangements have been made with the instructor or chair. Students not attending courses are responsible for processing drop slips with the Registration Office if fees are to be refunded.

Prerequisites are designed to both increase the probability of successful completion of each course as well as to insure the proper conduct of the course. Prerequisites will be strictly enforced in all departmental courses. Exceptions must be accepted by the department no later than the end of the add period of the semester or session.

Baccalaureate Writing Requirement
Students who have chosen the Computer Systems Engineering program or the Electrical Engineering program will satisfy the Baccalaureate Writing Requirement by successfully completing both ECE 481 Electrical/Computer Engineering Design I and ECE 482 Electrical/Computer Engineering Design II.

Computer Systems Engineering
Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.
Candidates for the Bachelor of Science in Engineering (Computer Systems) degree must satisfy the following requirements in addition to those required by Western Michigan University:
1. To satisfy professional engineering accreditation requirements, all students must complete a sequence of two courses (minimum of six credit hours) in the humanities, fine arts, social sciences, and/or behavioral sciences. The sequence must begin with a course at the 100-200 level and conclude with a course at the 300-400 level. Both courses must have the same course prefix, must provide depth, and must not be a selection of unrelated introductory courses. The sequence may be selected from General Education Areas I, II, and/or IV as part of the University General Education requirements. If the University General Education requirements have been otherwise satisfied, the sequence may be from any of the humanities, fine arts, social sciences, and/or behavioral sciences.
2. A “C” average or better must be earned in courses presented for graduation with an ECE, IE, 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 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.

**First Semester — 15 hours**
MATH 122 Calculus I ......................................... 4
CHEM 101 /102 General Chemistry ............... 4
ECE 251 Digital Logic I ..................................... 3
IE 102 Technical Communications .............. 3
PEGN Physical Education .............................. 1

Second Semester — 17 hours
MATH 123 Calculus II .................................... 4
PHYS 205 Mechanics and Heat ..................... 4
PHYS 206 Mechanics and Heat Lab .............. 1
CS 111 Computer Science I .......................... 4
AREA I General Education* ....................... 3
PEGN Physical Education .............................. 1

Third Semester — 17 hours
MATH 272 Vector and Multivariate Calculus .... 4
PHYS 207 Electricity and Light ..................... 4
PHYS 208 Electricity and Light Lab .............. 1
CS 112 Computer Science II ......................... 3
CS 201 Programming in FORTRAN .......... 2
AREA II General Education* ....................... 3

Fourth Semester — 16 hours
MATH 374 Introduction to Linear Alg. and Diff. Equations .... 4
PHYS 309 Introductory Modern Physics .......... 3
PHYS 310 Introductory Modern Physics Lab ...... 1
ECE 210 Circuit Analysis .............................. 4
ECE 251 Digital Systems I ......................... 4

Fifth Semester — 16 hours
MATH 145 Discrete Mathematical Structures .... 3
**Electrical and Computer Engineering Courses (ECE)**

Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-laboratory hours).

**ECE 100 Fundamentals of Circuits and Electronics (2-3)**
3 hrs.
Basic principles of electricity, magnetic devices, and electronics. May not be used as prerequisite for other ECE courses except ECE 101. Cannot be used as credit in engineering curricula. Prerequisites: MATH 111 or equivalent and high school physics.

**ECE 101 Fundamentals of Electronics and Machines (2-3)**
3 hrs.
Basic principles, characteristics, and applications of semiconductor devices, AC machines, and DC machines. May not be used as a prerequisite for other ECE courses. Cannot be used as credit in engineering curricula. Prerequisite: ECE 100.

**ECE 210 Circuit Analysis (3-3)**
4 hrs.
Analysis of linear electric circuits using methods based on Kirchhoff’s laws and network theorems. RL, RC, and RLC transients. Sinusoidal steady state analysis. Prerequisites: PHYS 207 or taken concurrently, MATH 123.

**ECE 211 Machines and Electronic Circuits (2-3)**
3 hrs.
Introduction to machines and electronics for non-electrical engineering students. Principles of operation, characteristics, ratings, and applications of transformers, alternators, motors, diodes, and transistors. ECE and CSE students may not use credit in ECE 211 toward graduation. Prerequisite: ECE 210.

**ECE 221 Electronics I (3-3)**
4 hrs.
Analysis and design of electronic circuits and systems, diode circuits, transistor biasing and stabilization, small and large signal models. Computer-aided analysis and design of multi-stage circuits. Prerequisites: ECE 210, PHYS 207.

**ECE 250 Digital Logic I (2-3)**
3 hrs.
Analysis and design of combinational and sequential logic systems. Prerequisite: MATH 111 or equivalent.

**ECE 251 Digital Systems I (3-3)**
4 hrs.
Machine and assembly language programming of small computers. Introduction to microcomputer architecture and interfacing. Prerequisites: ECE 250, CS 106 or CS 111 or CS 306.

**ECE 310 Network Analysis (3-0)**
3 hrs.
Classical and transform methods of network analysis, signals and waveforms, Fourier series and Fourier transforms. Frequency response. Prerequisites: ECE 210, CS 111 or CS 306, MATH 374, PHYS 207.

**ECE 320 Electronics II (3-4)**
4 hrs.
Analysis, design, and construction of modern electronic circuits using solid-state devices and integrated circuits. Field effect transistors, basic logic gates, multivibrators, operational amplifiers, frequency response analysis and photo devices. Prerequisites: ECE 221, ECE 310.
ECE 330 Electrical Machinery (3-3)
4 hrs.
Three-phase analysis. Analysis and design of transformers, electromechanical devices, and machines. Prerequisites: ECE 310, ECE 361.

ECE 350 Digital Electronics (3-3)
4 hrs.
The electrical and logic aspects of digital integrated circuits and their applications. Prerequisites: ECE 221, ECE 250.

ECE 355 Digital Logic II (3-0)
3 hrs.
Systems level design of digital logic circuits using hardwired and programmable system controllers. Introduction to asynchronous sequential logic circuits. Prerequisite: ECE 250.

ECE 357 Computer Architecture (3-0)
3 hrs.
Structural organization and hardware design of digital computers. Processing and control units, arithmetic algorithms, input-output systems, and memory systems. Prerequisites: CS 223 or ECE 251.

ECE 361 Electromagnetic Fields (4-0)
4 hrs.
Static and time-varying electric and magnetic fields, plane waves, guided waves, transmission lines, radiation and antennas. Prerequisites: MATH 272, MATH 374, ECE 210.

ECE 371 Linear Systems (3-0)
3 hrs.
Systems and their models, state variable formulation. Convolution, feedback systems and their analysis, S-plane and frequency response. Prerequisite: ECE 310.

ECE 380 Probabilistic Methods of Signal and System Analysis (3-0)
3 hrs.
Introduction to probability, random variables, random processes, correlation functions, spectral density, sequence of linear systems to random inputs, certain 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 Digital Systems II (2-3)
3 hrs.
Analysis and design of microcomputer-based digital systems. Prerequisites: ECE 221, ECE 251.

ECE 455 Digital Signal Processing (3-0)
3 hrs.

ECE 460 Communication Systems (3-0)
3 hrs.
Introduction to digital and analyzing communication systems. Design constraints of noise and bandwidth, comparison of various modulation techniques, and statistical methods. Information and channel capacity. Prerequisites: ECE 380.

ECE 470 Feedback Systems (3-0)
3 hrs.
Design principles of linear and non-linear feedback systems in both the frequency and time domain. Prerequisites: ECE 371.

ECE 481 Electrical/Computer Engineering Design 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 this course. Prerequisite: Consent of department chair.

ECE 482 Electrical/Computer Engineering Design II (0-6)
3 hrs.
Senior electrical engineering design project. A continuation of ECE 481. A formal written report and a formal presentation is required at the end of the semester. Prerequisite: ECE 481.

ECE 490 Independent Research and Development
1-4 hrs.
Individual research or special project in Electrical Engineering. Open only to juniors and seniors having the approval of the faculty member under whom the student will work and the approval of the department chair. Students may register more than once, not to exceed 4 hours.

ECE 495 Topics in Electrical Engineering
1-4 hrs.
Advanced course dealing with some particular area of electrical engineering not included in other course offerings. May be repeated for credit with a different topic. Prerequisite: Consent of department chair.

ECE 498 Readings in Electrical Engineering
1-4 hrs.
A course in which advanced students may elect to pursue a program of readings in areas of special interest. Prerequisite: Permission of the instructor with whom the student wishes to work and consent of department chair.

ECE 522 Switching and Finite Automata Theory
4 hrs.

ECE 555 Advanced Digital Signal Processing
3-0 hrs.

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 perturbation and variational methods. Prerequisite: ECE 361.

ECE 582 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 585 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 591 Real-time Embedded System Seminar I
1 hr.
First of a three semester seminar sequence that provides students opportunities to 1) meet with engineering and scientific experts and discuss the theory and practice of RTES design and implementation, and 2) present technical RTES material to a peer group of students and faculty. Prerequisite: Senior standing in computer engineering.

ECE 592 Real-time Embedded System Seminar II
1 hr.
Second of a three semester seminar sequence that provides students opportunities to 1) meet with engineering and scientific experts and discuss the theory and practice of RTES design and implementation, and 2) present technical RTES material to a peer group of students and faculty.
### INDUSTRIAL AND MANUFACTURING ENGINEERING

**Richard E. Munsterman, Chair**  
**Michael B. Atkins**  
**Kailash M. Bafna**  
**Liwana S. Bringelson**  
**Paul V. Engellmann**  
**Tarun Gupta**  
**Abdolrazim Houshyar**  
**Leonard R. Lamberson**  
**David M. Lytton**  
**Larry A. Mallak**  
**Mahesh Nallakatla**  
**Sam N. Ramattan**  
**Frederick Z. Sitkirs**  
**Ralph Tanner**  
**James VanDePolder**  
**Bob E. White**  
**Larry Williams**  
**Frank K. Wolf**  
**Charles F. Woodward**  
**Robert M. Wygant**  

**Adjunct Faculty**  
**Daryle Garrett-Bonneau**  
**John W. Gostbee**  
**Richard Hartenberger**  
**Thommas J. Lannon**  
**David M. Martin**  
**Michael Monfore**  
**Jay Shoemaker**

The Department of Industrial and Manufacturing Engineering offers the following curricula:  
- Bachelor of Science—Automotive Engineering Technology  
- Bachelor of Science in Engineering (Industrial)  
- Bachelor of Science-Engineering Graphics and Design Technology  
- Bachelor of Science-Engineering Management  
- Bachelor of Science-Manufacturing Engineering Technology  

Graduates from these programs are employed in a wide variety of position in both manufacturing and service industries. A minor in manufacturing is available to those students majoring in Industrial Marketing.

### Cooperative Education

Students may elect the cooperative plan of education. In this plan, the student alternates a semester of study on campus with a semester of compensated industrial experience. Students may work in their area of study, gaining valuable professional experience.

### Academic Advising

Students should contact the Industrial 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 2008 Kohrmann Hall (616 387-4033). Because of prerequisites and limited offering times, students must consult with an academic advisor for proper course sequence.

### Additional Information

General information regarding admissions, advising, scholarships, and special programs of interest to students in this department may be found under the beginning of the Engineering and Applied Sciences' section of the catalog.

Enrollment will not be honored in any course when other students are requesting that course and the student does not attend the first class meeting (lecture or lab), unless prior arrangements have been made with the instructor. Students not attending courses are responsible for processing drop slips with the Registration Office if fees are to be refunded. Prerequisites are designed to both increase the probabilities of successful completion of the course as well as to insure the proper conduct of the course. Therefore, prerequisites will be strictly enforced in all departmental courses. Exceptions must be approved by the department no later than the end of the add period of the semester or session.

### Automotive Engineering Technology

**Bachelor of Science Degree**

The Automotive Engineering Technology curriculum prepares students for positions in supervision or management, sales, and service where technical knowledge of automobile construction and operation is necessary.

**Baccalaureate Writing Requirement**

Students who have chosen the Automotive Engineering Technology curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing IME 483 Project Design and Control and IME 485 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 "C" average or better must be earned in required courses with an ECE, CMD, or IME prefix.
2. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.
3. Complete the following program of 131 semester credit hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall.
4. Courses listed in darker italic print must be completed with at least a "C" prior to enrolling in upper level Industrial and Manufacturing Engineering courses.
5. The following courses must be completed with a grade of "C" or better prior to enrollment in 300/400-level courses:

   - CHEM 103
   - CS 105
   - ECE 100
   - IME 102
   - PHYS 115
   - MATH 123 or 200

### First Semester — 16 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>IME 121</td>
<td>Automotive Chassis Systems</td>
<td>3</td>
</tr>
<tr>
<td>IME 150</td>
<td>Introduction to Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>MATH 118</td>
<td>Precalculus Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>IME 102</td>
<td>Technical Communication</td>
<td>3</td>
</tr>
<tr>
<td>CS 105</td>
<td>Introduction to Computers</td>
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### Second Semester — 17 hours

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>IME 124</td>
<td>Automotive Engine Systems</td>
<td>3</td>
</tr>
<tr>
<td>IME 142</td>
<td>Engineering Graphics</td>
<td>3</td>
</tr>
<tr>
<td>IME 154</td>
<td>Machining Fundamentals</td>
<td>3</td>
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</table>

### MATH 200 Calculus with Applications | 4 |
### CHEM 103 General Chemistry | 4 |

### Third Semester — 17 hours

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>IME 222</td>
<td>Fuels and Lubricants</td>
<td>3</td>
</tr>
<tr>
<td>IME 246</td>
<td>Intro 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 113</td>
<td>General Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 114</td>
<td>General Physics II Lab</td>
<td>1</td>
</tr>
<tr>
<td>COM 104</td>
<td>Public Speaking</td>
<td>3</td>
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### Fourth Semester — 16 hours

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<tbody>
<tr>
<td>IME 242</td>
<td>Designing for Production</td>
<td>3</td>
</tr>
<tr>
<td>ECE 101</td>
<td>Fundamentals of Electronic Machines</td>
<td>3</td>
</tr>
<tr>
<td>MATH 260</td>
<td>Elementary Statistics</td>
<td>4</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>PEGN</td>
<td>Physical Education</td>
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### Fifth Semester — 17 hours

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<th>Course</th>
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<tbody>
<tr>
<td>IME 221</td>
<td>Automotive Automatic Transmission/Transaxle Systems</td>
<td>3</td>
</tr>
<tr>
<td>CMD 256</td>
<td>Properties of Materials</td>
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<tr>
<td>IME 281</td>
<td>Statics and Strength of Materials</td>
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<td>ECON 201</td>
<td>Principles of Economics</td>
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<tr>
<td>AREA I*</td>
<td>General Education</td>
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### Sixth Semester — 15 hours

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<tbody>
<tr>
<td>IME 224</td>
<td>Automotive Fuel and Electrical/Electronic Systems</td>
<td>4</td>
</tr>
<tr>
<td>IME 328</td>
<td>Quality Assurance and Control</td>
<td>3</td>
</tr>
<tr>
<td>IME 383</td>
<td>Thermodynamics</td>
<td>2</td>
</tr>
<tr>
<td>IME 384</td>
<td>Fluid Mechanics and Hydraulics</td>
<td>2</td>
</tr>
<tr>
<td>AREA II*</td>
<td>Social/Behavioral Science*</td>
<td>3</td>
</tr>
<tr>
<td>PEGN</td>
<td>Physical Education</td>
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### Seventh Semester — 17 hours

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>IME 326</td>
<td>Operations Planning and Control</td>
<td>3</td>
</tr>
<tr>
<td>IME 327</td>
<td>Vehicle Systems Diagnosis</td>
<td>3</td>
</tr>
<tr>
<td>IME 483</td>
<td>Project Design and Control</td>
<td>1</td>
</tr>
<tr>
<td>IME 422</td>
<td>Conference Leadership</td>
<td>3</td>
</tr>
<tr>
<td>AREA I*</td>
<td>Approved Elective</td>
<td>3</td>
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<tr>
<td>AREA IV*</td>
<td>Non-Western World*</td>
<td>4</td>
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### Eighth Semester — 16 hours

<table>
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<th>Course</th>
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<tbody>
<tr>
<td>IME 358</td>
<td>Computer-Aided Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>IME 402</td>
<td>Supervision of Industrial Operations</td>
<td>3</td>
</tr>
<tr>
<td>IME 421</td>
<td>Automotive Design Analysis</td>
<td>3</td>
</tr>
<tr>
<td>IME 485</td>
<td>Senior Project</td>
<td>3</td>
</tr>
<tr>
<td>AREA I*</td>
<td>Humanities/Fine Arts*</td>
<td>4</td>
</tr>
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</table>

*At least two of these courses must be at the 300-400 level.

### Engineering Graphics and Design Technology

**Bachelor of Science Degree**

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 toward metals processing, plastics processing, or production planning/design.

The program prepares students to assume such leadership roles in designing and drafting activities as section leader, checker, reprographics supervisor, standards administrator, and chief drafter.
Baccalaureate Writing Requirement

Students who have chosen the Engineering Graphics and Design Technology curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing IME 483 Project Design and Control and IME 485 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 "C" average or better must be earned in courses presented for graduation with an ECE, MATH, or IME prefix.
2. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.
3. Complete the following program of 129 semester credit hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall.
4. Courses listed in darker italic print must be completed with at least a "C" prior to enrolling in upper level Industrial and Manufacturing Engineering courses.
5. The following courses must be completed with a grade of "C" or better prior to enrollment in 300/400-level courses:
   - CHEM 103 General Chemistry I
   - PHYS 113 General Physics I
   - PHYS 115 General Physics II
   - MATH 123 Calculus with Applications
   - MATH 124 Calculus with Applications
   - MATH 200 Calculus with Applications

Engineering Management

Bachelor of Science Degree

The Engineering Management curriculum provides academic background in humanities, social sciences, communication, and technical subjects relating to manufacturing systems. Human relations 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:

- Computer-Aided Design
- Computer-Aided Manufacturing
- Industrial Engineering
- Plastics

In addition, the student can also obtain a minor in the Haworth College of Business by taking additional courses. The minor can be earned in:
- Accounting
- Finance
- Law
- Marketing

Requirements

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to those required by Western Michigan University:

1. A "C" average or better must be earned in courses presented for graduation with an IME, ECE, or CMD prefix.
2. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.
3. Complete the following program of 129 semester credit hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall, plus one spring session.

Baccalaureate Writing Requirement

Students who have chosen the Engineering Management curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing IME 316 Report Preparation.

First Semester — 17 hours

- IME 142 Engineering Graphics 3
- IME 150 Introduction to Manufacturing 3
- MATH 123 Calculus with Applications 4
- CHEM 103 General Chemistry I 4
- PHYS 113 General Physics I 4
- CS 105 Introduction to Computers 3

Second Semester — 18 hours

- IME 142 Descriptive Geometry 3
- IME 154 Machining Fundamentals 3
- MATH 123 Calculus with Applications 4
- PHYS 115 General Physics II 4
- PHYS 116 General Physics II Lab 1
- IME 102 Technical Communication 3

Third Semester — 18 hours

- IME 246 Introduction to Computer Aided-Design 3
- IME 248 Technical Illustration Project 3
- ECE 100 Fundamentals of Circuits and Electronics 3
- PHYS 115 General Physics II 4
- PHYS 116 General Physics II Lab 1
- COM 104 Public Speaking 3
- PEGN Physical Education 1

Fourth Semester — 17 hours

- CMD 256 Properties of Materials 4
- MATH 260 Elementary Statistics 4
- ECE 100 Fundamentals of Circuits and Electronics 3
- PHYS 115 General Physics II 4
- PHYS 116 General Physics II Lab 1
- AREA I Humanities/Fine Arts 3

Fifth Semester — 16 hours

- IME 250 Plastics Properties and Processing 3
- IME 281 Statics and Strength of Materials 4
- IME 481 Metrology 3
- CS 306 Introductory Programming: FORTRAN 2
- ECON 201 Principles of Economics 3
- PEGN Physical Education 1

Sixth Semester — 13 hours

- IME 346 Programming for Computer Aided-Design 3
- IME 356 Computer-Aided Manufacturing 3
- IME 383 Thermodynamics 2
- IME 384 Fluid Mechanics and Hydraulics 2
- Approved Elective 3

Seventh Semester — 16 hours

- IME 422 Conference Leadership 3
- IME 444 Advanced Product and Machine Design 3
- IME 446 CAD Applications 3
- IME 483 Project Design and Control 1
- Approved Elective 3
- AREA II Social/Behavioral Science* 3

Eighth Semester — 14 hours

- IME 485 Senior Project 3
- Approved Elective 3
- AREA I Humanities/Fine Arts* 4
- AREA II Non-Western World* 4

* At least two of these courses must be at the 300-400 level.

Spring Semester of Senior Year — 6 hours

- IME 150 Introduction to Manufacturing 3
- PEGN Physical Education 1

Second Semester — 13 hours

- MATH 200 Calculus with Applications 4
- IME 142 Engineering Graphics 3
- ECON 201 Principles of Economics 3
- Free Elective 3

Third Semester — 15 hours

- MATH 260 Elementary Statistics 4
- PHYS 113 General Physics 4
- PHYS 114 General Physics I Lab 1
- CS 105 Introduction to Computers 3
- ECE 100 Fundamentals of Circuits and Electronics 3

Fourth Semester — 15 hours

- PHYS 115 General Physics II 4
- PHYS 116 General Physics II Lab 1
- ACTY 201 Accounting Concepts and Applications 3
- OR
- ACTY 210 Principles of Accounting 3
- OR
- PEGN Physical Education 1
- Technical Elective** 3
- AREA II General Education*** 3

Fifth Semester — 17 hours

- IME 305 Work Analysis 3
- IME 322 Safety in Industry 3
- IME 315 Work Analysis and Design Lab 1
- IME 320 Engineering Cost Analysis 3
- IME 326 Operations Planning and Control 3
- CMD 256 Properties of Materials 4

Sixth Semester — 16 hours

- IME 312 Quantitative Techniques 3
- IME 316 Report Preparation 3
- IME 328 Quality Assurance and Control 3
- Technical Elective 3
- AREA I Elective 4

Seventh Semester — 18 hours

- IME 422 Conference Leadership 3
- IME 405 Senior Engineering Management Design Project 4
- IME 411 Engineering Management Seminar 1
- IME 417 Computer Integrated Manufacturing 4
- Technical Elective 3
- AREA II Technical Elective 3

Eighth Semester — 13 hours

- IME 402 Supervision of Industrial Operations 3
- IME 404 Plant Layout and Material Handling 3
- IME 424 Plant Layout and Material Handling Lab 1
- Technical Elective 3
- AREA I Technical Elective 3

Spring Semester of Senior Year — 6 hours

- IME 403 Industrial Labor Relations 3
- IME 420 Modern Industrial Practices 3

* See departmental advisor for a list of approved courses in each specialized area. Also see Technical Elective Requirements below.

** Specific coursework must be approved by the appropriate Haworth College of Business advisor.

*** 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.IME 300 Cooperative Education can be used for three hours of technical elective but is not included in the requirements for the 300-400 level courses. See the Academic Advisor for specific course information on approved technical electives.

Industrial Engineering
Bachelor of Science in Engineering (Industrial) Degree
Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

The Industrial Engineering curriculum provides the essential foundation, experience, and understanding in science, mathematics, humanities, and engineering so that graduates may find employment in production and service industries. This program is also a basis for graduate study. Industrial engineering involves the design, installation, and improvement of systems integrating people, materials, equipment, and energy. An industrial engineer might work in facilities planning and 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 italic print in the schedule below.

2. Students seeking admission to this curriculum must submit an application following procedures established by the College of Engineering and Applied Sciences. Upper level transfer students may complete an application prior to their first semester of enrollment. Only students in good academic standing as defined by the University will be admitted to this curriculum.

Industrial Engineering Program Requirements
Candidates for the Bachelor of Science in Engineering (Industrial) degree must satisfy the following requirements in addition to those required by Western Michigan University:

1. To satisfy professional engineering accreditation requirements, all students must complete a sequence of two courses (minimum of six credit hours) in the humanities, fine arts, social sciences, and/or behavioral sciences. The sequence must begin with a course at the 100-200 level and conclude with a course at the 300-400 level. Both courses must have the same course prefix, must provide depth, and must not be a selection of unrelated introductory courses. The sequence may be selected from General Education Areas I, II, and/or IV as part of the University General Education requirements. If the University General Education requirements have been otherwise satisfied, the sequence may be from any of the humanities, fine arts, social sciences, and/or behavioral sciences.

2. A "C" average or better must be earned in courses presented for graduation with an 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 129 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.

Baccalaureate Writing Requirement
Students who have chosen the Industrial Engineering curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing IME 316 Report Preparation.

First Semester — 15 hours
IME 102 Technical Communication 3
IME 142 Engineering Graphics 3
MATH 122 Calculus I 4
CHEM 101 OR 102 General Chemistry I 4
PEGN Physical Education 1

Second Semester — 18 hours
ACTY 201 Accounting Concepts and Applications 3
IME 206 Engineering Constructions 3
MATH 123 Calculus II 4
PHYS 205 Mechanics and Heat 4
AND
PHYS 208 Mechanics and Heat Lab 1
AREA I General Education* 3
PEGN Physical Education 1

Third Semester — 16 hours
MATH 272 Vector and Multivariate Calculus 4
IME 261 Engineering Statistics 3
PHYS 207 Electricity and Light 4
AND
IME Approved Elective** 3
ME 253 Statics and Mechanics of Materials 4

Fourth Semester — 17 hours
ECON 201 Principles of Economics 3
IME 205 Work Design 4
ME 262 Pre-Engineering 3
ECE 210 Circuit Analysis 4
ME 250 Materials Science I OR
ME 258 Dynamics 3

Fifth Semester — 17 hours
IME 316 Report Preparation 3
IME 310 Engineering Economy 3
MATH 374 Introduction to Linear Algebra and Differential Equations 4
ECE 211 Machines and Electronic Circuits 3
IME 307 Computer Controlled Manufacturing Systems 4

Sixth Semester — 17 hours
IME 318 Statistical Quality Control 3
IME 308 Comp. Controlled Manufacturing Design Lab 2
IME 311 Introduction to Operations Research 3
ME 232 Thermodynamics I 3
IME Approved Elective** 3
AREA II General Education* 3

Seventh Semester — 16 hours
IME 414 Material Handling and Facilities Design 3
IME 434 Material Handling and Facilities Design Lab 1
IME 416 Operations Control in Industry 4
IME 410 Senior Seminar 1
IME Approved Elective** 3
AREA II General Education* 4

Eighth Semester — 13 hours
IME 415 Senior Industrial Engineering Design Project 4
ME 402 Supervision of Industrial Operations 3
OR
IME 403 Industrial Labor Relations 3
IME 430 Simulation Modeling and Analysis 3
AREA I General Education* 3

*At least two of these courses must be at the 300-400 level.**See Academic Advisor for a list of approved electives.

Manufacturing Engineering Technology
Bachelor of Science–Manufacturing Engineering Technology Degree
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 casting, materials technology, plastics technology, or wood products manufacturing.

Baccalaureate Writing Requirement
Students who have chosen the Manufacturing Engineering Technology curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing IME 483 Project Design and Control and IME 485 Senior Design Project.

Requirements
1. A "C" average or better must be earned in required courses with an ECE, CMD, ME, or IME prefix.
2. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.
3. Complete the following program of 133 semester hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall.
4. Courses listed in darker italic print must be completed with at least a "C" prior to enrolling in upper level Industrial and Manufacturing Engineering courses.
5. The following courses must be completed with a grade of "C" or better prior to enrollment in 300/400-level courses:

CHEM 103, CS 105, ECE 100, IME 102, PHYS 115, MATH 200

First Semester — 16 hours
IME 142 Engineering Graphics 3
IME 150 Introduction to Manufacturing 3
MATH 118 Precalculus Mathematics 4
CS 105 Introduction to Computers 3
IME 102 Technical Communication 3

Second Semester — 17 hours
IME 154 Machining Fundamentals 3
MATH 200 Calculus with Applications 4
CHEM 103 General Chemistry I 4
PHYS 113 General Physics I 4
Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Crs</th>
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<tbody>
<tr>
<td>PHYS 114</td>
<td>General Physics I Lab</td>
<td>1</td>
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<tr>
<td>PEGN</td>
<td>Physical Education</td>
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**Total:** 18 hours

**Fourth Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>IME 246</td>
<td>Introduction to Computer 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>
</tr>
<tr>
<td>COM 104</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>AREA I</td>
<td>Humanities/Fine Arts*</td>
<td>3</td>
</tr>
<tr>
<td>PEGN</td>
<td>Physical Education</td>
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**Total:** 18 hours

**Fifth Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CMD 256</td>
<td>Properties of Materials</td>
<td>4</td>
</tr>
<tr>
<td>IME 281</td>
<td>Statics and Strength of Materials</td>
<td>1</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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**Total:** 16 hours

**Sixth Semester**

<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>IME 358</td>
<td>Computer-Aided Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>IME 320</td>
<td>Engineering Cost Analysis</td>
<td>3</td>
</tr>
<tr>
<td>IME 326</td>
<td>Operations Planning and Control</td>
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<tr>
<td>Approved</td>
<td>Elective</td>
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</tr>
<tr>
<td>AREA IV</td>
<td>Non-Western World*</td>
<td>4</td>
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**Total:** 16 hours

**Seventh Semester**

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<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>IME 357</td>
<td>Fabrication and Pressworking</td>
<td>3</td>
</tr>
<tr>
<td>IME 458</td>
<td>Advanced Manufacturing Systems</td>
<td>3</td>
</tr>
<tr>
<td>IME 483</td>
<td>Project Design and Control</td>
<td>3</td>
</tr>
<tr>
<td>ME 375</td>
<td>Experimental Stress Analysis</td>
<td>3</td>
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<tr>
<td>Approved</td>
<td>Elective</td>
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<tr>
<td>AREA II</td>
<td>Social/Behavioral Science*</td>
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**Total:** 16 hours

**Eighth Semester**

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>IME 481</td>
<td>Metrology</td>
<td>3</td>
</tr>
<tr>
<td>IME 485</td>
<td>Senior Project</td>
<td>3</td>
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<tr>
<td>IME 429</td>
<td>Conference Leadership</td>
<td>3</td>
</tr>
<tr>
<td>Approved</td>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>AREA I</td>
<td>Humanities/Fine Arts*</td>
<td>3</td>
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</table>

**Total:** 16 hours

**Cast Metals Option** (total hours for graduation — 137)

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Crs</th>
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<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>
<tr>
<td>IME 300</td>
<td>Co-op Education (in Cast)</td>
<td>3</td>
</tr>
<tr>
<td>IME 402</td>
<td>Supervision of Industrial Operations</td>
<td>3</td>
</tr>
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**Wood Products Option** (total hours for graduation — 136)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Crs</th>
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<tr>
<td>CMD 132</td>
<td>Wood Processing</td>
<td>3</td>
</tr>
<tr>
<td>CMD 230</td>
<td>Machine Woodworking</td>
<td>3</td>
</tr>
<tr>
<td>CMD 332</td>
<td>Wood Finishing</td>
<td>3</td>
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<tr>
<td>CMD 432</td>
<td>Production Woodworking</td>
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**Plastics Option** (total hours for graduation — 136)

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Crs</th>
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<tbody>
<tr>
<td>IME 350</td>
<td>Production Thermoplastic Processing</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total:** 9 hours of approved electives with:

- CMD 350 Production Thermoplastic Processing — 3 hrs.

**Industrial and Manufacturing Engineering Courses (IME)**

A list of approved General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog. Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture-hours/lab-hours).

**IM ENGINEERING TECHNOLOGY MINOR**

Manufacturing Technology Minor

The manufacturing technology minor is available to Haworth College of Business students majoring in industrial marketing. It is recommended that students selecting the manufacturing technology minor fulfill their General Education Area III requirements by taking CHEM 101 or 103 and/or PHYS 107 and 108. The manufacturing technology minor totals 16 semester credit hours including three required courses and two approved elective courses selected in consultation with a student’s major advisor.

**REQUIRED COURSES — 10 hours**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Crs</th>
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<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>CMD 256</td>
<td>Properties of Materials</td>
<td>4</td>
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**APPROVED ELECTIVES — 6 hours**

Select two (2) courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Crs</th>
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<tbody>
<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>
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</tbody>
</table>

**Ime 154 MACHINING FUNDAMENTALS (2-3)**

3 hrs.

Theory and laboratory experience in the basic techniques used in the production of machinable materials. Introduction to layout, measurements, machine use, and cutting tool geometry. Consideration of advanced machining techniques. Prerequisite: IME 150.

**IME 183 PRINCIPLES OF AUTO MAINTENANCE (2-0)**

2 hrs.

A course to help the consumer become aware of automobile maintenance which can help minimize the cost and maximize automobile dependability and service life. May not be applied toward graduation requirements in automotive curriculum.

**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. Prerequisite: IME 206 or concurrent, IME 102.

**IME 206 ENGINEERING COMPUTATIONS (2-0)**

2 hrs.

A basic course introducing students to software and hardware to be used for engineering computations and decision making. Instruction includes computer-mediated communication, FORTRAN, Lotus 123 and Minitab. Familiarization with the VAX and PC resources located in the Computer Aided Engineering center. An emphasis is placed on learning structured problem solving and software packages that will be used in upper-level IME courses. Prerequisite: Proficiency in BASIC programming. This prerequisite may also be met by completion of CS 106 or equivalent. Corequisite: MATH 122.
IME 221 Automotive Automatic Transmission/Transaxle Systems (2-2) 3 hrs.
The operation, study of design, and manufacture of automatic transmissions and transaxles, including hydraulics, electronics, torque capacities, and gear systems. Measurements and computations for pumps, valves, mechanisms, clutches, bands, and gears. Includes a study of bearing application, lubrication and cooling of the transmission/transaxle, and testing. Prerequisites: PHYS 113 and PHYS 114 or PHYS 107 and PHYS 108.

IME 222 Fuels and Lubricants (2-2) 3 hrs.
A study of petroleum products and their application to the fuel and lubricant requirements of automobiles and aircraft. Laboratory tests are conducted to ascertain octane requirements, octave numbers, viscosity, volatility, flash and fire point, grease penetration, API degrees, and dropping point of grease. Prerequisite: CHEM 101 or CHEM 102 or CHEM 103.

IME 224 Fuel and Electrical/Electronic Systems (3-4) 4 hrs.
The operation, study of design, testing, manufacture, and application of automotive electrical/electronic and engine control systems. Integration 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 242 Designing for Production (2-3) 3 hrs.
Engineering documentation as it relates to the product development and manufacturing methods required to bring a quality product to market. ANSI and ISO standards will be studied to acquaint the students with the documentation necessary to develop assembly and part drawings and to control the changes that will effect the assembled parts. Material specifications and cost studies will be combined with geometric dimensioning and tolerancing to be applied to parts gages and tooling. The use of CAD is a major part of this course. Prerequisite: IME 142, IME 154, and IME 246.

IME 246 Introduction to Computer-Aided Design (2-3) 3 hrs.
Principles of computer graphics technology and applications in CAD hardware and software components, and system operation. Survey of selected commercial CAD systems for production of 2-dimensional drafting and 3-dimensional wireframe part design creation. Emphasis placed upon factors affecting performance and capabilities of comparative CAD systems operation. Prerequisite: IME 142 and CS 105.

IME 248 Technical Illustration (2-3) 3 hrs.
Paraline and perspective drawing, charting use of varied black and white media, texture, and percentage films and tapes as they apply to catalogs, technical manuals, reports, and sales engineering publications. Prerequisites: IME 142 or equivalent.

IME 250 Plastics Properties and Processing (2-3) 3 hrs.
Effects of polymer chemistry, additives, plasticizers, fillers, and reinforcements on the properties of plastics. Molding, forming, extrusion, casting, laminating, coating, welding, and decorating of thermoplastic and thermoset materials. Prerequisite: IME 150, CHEM 103.

IME 261 Engineering Statistics (3-0) 3 hrs.
Introduction to statistical methodology, emphasizing applications in engineering. Topics include descriptive and inferential statistics, least squares curve fitting, correlation, and analysis of variance. Prerequisite: MATH 123, a course in the use of computers. (Cross listed with MATH 261.)

IME 262 Probability for Engineers (3-0) 3 hrs.
Introduction to probability emphasizing applications in engineering. Use of discrete and continuous random variables common to engineering problems. Random processes used in engineering models. Corequisite: MATH 272. (Cross listed with MATH 262.)

IME 281 Statics and Strength of Materials (4-0) 4 hrs.
Forces on structures, moments, equilibrium. Stresses and deformation in axially-loaded members, torsion members and beams. Analytical design of structural members. Prerequisite: MATH 200.

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 development are introduced. NOT FOR ENGINEERING CREDIT.

IME 307 Computer Controlled Manufacturing Systems (3-3) 3 hrs.
Analysis and design of computer controlled manufacturing systems. Students must enroll in IME 308 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 model to simulate a manufacturing process. IME 307 and IME 308 must be taken during the same academic year. Prerequisite: IME 307.

IME 309 Engineering Economy for Mechanical Engineers (2-0) 2 hrs.
Economic decision making from an engineering perspective. This course is designed to provide undergraduate engineering students with sufficient knowledge to perform engineering economy studies. Topics covered include time value of money, decision making criteria, break-even studies, depreciation and taxes, inflation, and life cycle cost analysis. Prerequisite: MATH 123.

IME 310 Engineering Economy (3-0) 3 hrs.
Application of principles of engineering economy for establishment of equipment and system feasibility. Interest, present worth, capital recovery, relative economic justification, work measurement and the design process. NOT FOR ENGINEERING CREDIT. Prerequisite: IME 305 or taken concurrently.

IME 316 Report Preparation (3-0) 3 hrs.
Methods of applying statistics and probability theory to control production processes. Application of computer programs to analyze quality control problems. Prerequisites: IME 206, IME 262.

IME 320 Engineering Cost Analysis (3-0) 3 hrs.
A course in engineering economics and the economic comparison of alternative technical systems. Includes interest, present worth, capital recovery, equivalence, depreciation, taxes, and risk. NOT FOR ENGINEERING CREDIT. Prerequisite: MATH 200.

IME 322 Safety in Industry (3-0) 3 hrs.
Importance of safety in industry. Cost of accidents, fundamentals of accident prevention, elements of effective safety programs, accident investigation, and OSHA. Prerequisite: Upperclass standing.

IME 326 Operations Planning and Control (3-0) 3 hrs.
Methods of controlling and coordinating production using production planning, scheduling, inventory control, and dispatching. NOT FOR ENGINEERING CREDIT. Prerequisite: MATH 216 or MATH 260 or MATH 366.

IME 327 Vehicle Systems Diagnosis (2-3) 3 hrs.
The study of the diagnosis techniques and strategies necessary to identify malfunctions in the total automotive vehicle system. Special attention is given to laboratory and service equipment, its use, calibration, and data-gathering capabilities. Verbal and written
reports are stressed. Prerequisites: IME 121, IME 124, IME 221, IME 222, IME 224, and ECE 101.

IME 328 Quality Assurance and Control (3-0) 3 hrs. 
Techniques of controlling quality in manufacturing systems. Topics include organization of quality, methods of measurement, and basic statistical tools. NOT FOR ENGINEERING CREDIT. Prerequisite: MATH 241 or MATH 260 or MATH 366.

IME 346 Programming for Computer-Aided Design (2-3) 3 hrs. 
Modular software development for interactive CAD. Topics include human interface for interactive design, programming structure for modular entity creation, storing and retrieving object data, utilizing peripheral input and output devices, attribute regulation and control, and software transfer and documentation specifications. Prerequisites: IME 246 and CS 306.

IME 349 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. Course includes computer-aided design. Prerequisites: CMD 149, CMD131.

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 256.

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. Theory and practice in metal casting principles using green sand, investment, centrifugal, and loss foam processes. Prerequisites: IME 154, CMD 256.

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 242, IME 281, CMD 256.

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 N/C in programming. Prerequisites: IME 154, IME 246.

IME 383 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 232 or MATH 200.

IME 384 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 387 CAD/CAM Fundamentals (2-3) 3 hrs. 
Application of computer graphics to drafting and design, translation of drawings to part programs for CNC machine control. Considerations for computer-integrated manufacturing. (Not for majors in EGR and MFT.)

IME 402 Supervision of Industrial Operations (3-0) 3 hrs. 
Supervisory duties and responsibilities of foremen, engineers, and technicians in industrial operations. Prerequisite: Junior standing.

IME 403 Industrial Labor Relations (3-0) 3 hrs. 
Relationships between government agencies, labor organizations, and management. Emphasis on development of collective bargaining procedures. Prerequisite: Senior standing.

IME 404 Plant Layout and Material Handling (3-0) 3 hrs. 
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. NOT FOR ENGINEERING CREDIT. Prerequisites: IME 305, IME 320, senior standing.

IME 405 Senior Engineering Management Design Project (2-6) 4 hrs. 
Concepts and strategies for the analysis, design, improvement, and operation of integrated systems of persons, material, and equipment with concentration on methods of successful implementation. A project oriented course drawing on previous courses in the student’s program. NOT FOR ENGINEERING CREDIT. Prerequisites: IME 320, IME 316, senior standing and two of the following: IME 305 and IME 315, IME 326, IME 329.

IME 410 Senior Seminar (1-0) 1 hr. 
A seminar for senior industrial engineering students. Topics for discussion will be centered around the role of the industrial engineer and supervisor at place of work and obligation to society. Prerequisite: Senior standing.

IME 411 Engineering Management Seminar (1-0) 1 hr. 
A seminar for senior engineering management students. Topics for discussion are the professional role of technology graduates, professional relationships with engineers and scientists, ethics of the profession, and legal concerns. NOT FOR ENGINEERING CREDIT. Prerequisite: Senior standing.

IME 414 Material Handling and Facilities Design (3-0) 3 hrs. 
This course is designed to give the students a comprehensive understanding of the issues involved in the design of an industrial production system. It will cover the problems in plant location, product analysis, process design, equipment selection, materials handling, and plant layout. Prerequisites: IME 205, IME 310, IME 316, IME 416 or taken concurrently.

IME 415 Senior Industrial Engineering Design Project (2-6) 4 hrs. 
Student project teams will be assigned system design problems with participating southwestern Michigan firms. Each team will design a solution to the problem and be responsible for writing a justification for their design proposal, and will make a formal oral presentation to representatives of the client firm. Prerequisite: IME 414.

IME 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 417 Computer Integrated Manufacturing (3-3) 4 hrs. 
Provides students with an understanding of (CIM) system concepts and technology. Topics include design, planning and operational issues related to the integration of computers in manufacturing systems, theoretical and applied. NOT FOR ENGINEERING CREDIT. Prerequisites: ECE 100, CS 105 or equivalent.

IME 420 Modern Industrial Practices (1-6) 3 hrs. 
Students will observe and analyze actual supervisory and managerial functions in industrial and service establishments. Conference procedures will be used in exploring many facets of supervisory and managerial practices and procedures. A charge for transportation is required. Prerequisites: Spring session prior to graduation.

IME 421 Automotive Design Analysis (2-2) 3 hrs. 
Evaluations of the interrelationship of engineering standards, operating limitations, manufacturing, cost control, customer satisfaction, and repairability of modern automobile systems. Verbal and written reports are required on “fit and finish,” ergonomics, safety, performance, cost, and repairability. Prerequisite: IME 327.

IME 422 Conference Leadership (3-0) 3 hrs. 
Methods of understanding, planning and presenting a conference with oral and written components. Task groups will be used to explore creativity, controversy, power, and process in leadership situations. Prerequisites: COM 104 or IME 316, upperclass standing. IME 316 may be taken concurrently.

IME 424 Plant Layout and Material Handling Lab (0-3) 1 hr. 
Students will be responsible for choosing a product for which they are to plan, design and layout the manufacturing facilities including all related office and service areas. To ease their task, all the drawings such as drawings of “make” parts will be provided. NOT FOR ENGINEERING CREDIT. Prerequisite: IME 404, or taken concurrently.

IME 430 Simulation Modeling and Analysis (3-0) 3 hrs. 
Use of computer simulation as a modeling tool, 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 “make” parts will be provided. Prerequisite: IME 414, or taken concurrently.
IME 442 Ergonomics and Design (2-3) 3 hrs.
An introduction to ergonomics affording students the necessary knowledge essential for the psychological and anthropometrical development leading to good design
Emphasis is placed on health and safety. A design project is required.

IME 444 Advanced Product and Machine Design (2-3) 3 hrs.
Advanced projects in the application of geometric dimensioning and tolerancing to complex parts and assemblies. Mechanical components are analyzed and applied to meet design requirements for applied motion and force transmission projects. CAD application will be an important part of this course.
Prerequisite: IME 144, IME 242, and IME 481.

IME 446 CAD Application (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 solid modeler for design creation, display, and analysis.
Prerequisite: IME 346.

IME 450 Senior Design Project I 3 hrs.
The first of a two-semester sequence in which the student works on an approved engineering related design project. A preliminary design and report are required at the end of the course. Project will be completed in IME 451. FOR OFF-CAMPUS PROGRAMS ONLY. Prerequisite: Consent of instructor.

IME 451 Senior Design Project II 3 hrs.
Completion of the engineering design project started in Senior Design Project I. A formal written report and oral presentation are required. FOR OFF-CAMPUS PROGRAMS ONLY. Prerequisite: IME 450.

IME 452 Die Casting (2-3) 3 hrs.
A study of the elements of the process and control limits to produce sound castings. An analysis of casting defects and methods for evaluation with industry computer programs. Alloys will be studied in relation to parts being produced. Prerequisite: IME 352.

IME 453 Maintenance in Manufacturing (2-3) 3 hrs.
Installation, adjustment, and maintenance of equipment. Machinery monitoring, diagnostics, and maintenance systems.
Prerequisite: Senior standing.

IME 456 Plastics Assembly and Testing (2-3) 3 hrs.
Product assembly, testing, and finishing. Welding, adhesives, and snap-fit assembly methods, painting, printing, plating, hot stamping, and in-mold decorating. Application of ASTM standard plastics testing methods to product design, inspection, and analysis of stress, wear, and failure characteristics.
Prerequisites: IME 281, IME 350.

IME 458 Advanced Manufacturing Systems (2-3) 3 hrs.
Application and analysis of computer-integrated manufacturing systems. Includes IDEF modeling of manufacturing systems, MAP (Manufacturing Automation Protocol), group technology, computer-aided process planning, robotics, and other technologies for flexible manufacturing. Prerequisites: IME 358, senior status.

IME 459 Mold Design and Construction (2-3) 3 hrs.
Mold and die design, processing and part requirements, molded holes and undercuts, threads and bosses, tooling, materials, special fixtures. Mold and die construction using a wide range of cavity production methods. Computer analysis of temperature, non-destructive testing, and coordinate measuring systems. Use of vision, laser, and other non-contact measuring systems. Prerequisites: IME 154, IME 250.

IME 481 Metrology (2-3) 3 hrs.
Precision measurement, its relationship to critical engineering tolerances, 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: Grade of "C" or better in IME 483 and approved project.

IME 487 Manufacturing Productivity Techniques (3-0) 3 hrs.
Application of modern processes, principles of productive tooling and inspection methods to quality production. The impact of emerging manufacturing materials on processing techniques, organization, and systems for automation.

IME 490 Independent Research and Development (Arr.) 1-4 hrs.
Individual research or special project in engineering. Open only to juniors and seniors having the approval of the faculty member under whom the student will work and the approval of the department chair. Students may register more than once, not to exceed 6 hours.

IME 495 Special Topics in Industrial and Manufacturing Engineering (3-0) 3 hrs.
A specialized course dealing, each time it is offered, with a different industrial engineering problem. May be repeated for credit with a different topic. Prerequisite: Permission of instructor.

IME 498 Readings in Engineering (Arr.) 1-6 hrs.
Independent readings in engineering. Open only to juniors and seniors having the approval of the faculty member under whom the student will work and the approval of the department chair. Students may register more than once, not to exceed 6 hours.

IME 499 Studies in Engineering (Arr.) 1-6 hrs.
Independent studies in engineering. Open only to students having the approval of the faculty member under whom the student will work and the approval of the department chair. Students may register more than once, not to exceed 6 hours.

IME 500 Advanced Industrial Relations (3-0) 3 hrs.
Interplay among government agencies, labor organizations, and management. Particular emphasis is placed on collective bargaining procedures, issues, and applications through case studies. Prerequisite: IME 403 or permission of instructor.

IME 501 Survey of Industrial Engineering Topics (3-0) 3 hrs.
Course devoted to studying the basics of the industrial engineering profession. Subjects will include work analysis, engineering economy, statistical quality control, production planning and control, and material handling. Emphasis is placed on the application of these techniques to manufacturing related problems. This course cannot be applied for credit toward the Masters of Science degree in Engineering Management or Industrial Engineering. Prerequisites: MATH 200, 260 or 366, or equivalent.

IME 502 Manufacturing Engineering Fundamentals (3-3) 4 hrs.
This course reviews the fundamental principles of computer-aided design (CAD), computer-aided manufacturing (CAM), and metrology used in the practice of manufacturing engineering. Topics covered include: CAD documentation, design 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 the Master of Science degree in Manufacturing Science. This course may be used to meet the stated prerequisite requirements normally satisfied by IME 246, IME 258, and IME 481 in the graduate program. Prerequisites: MATH 200, CS 105, IME 142, 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, 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 the Master of Science degree in Manufacturing Science.

IME 504 Continuous Improvement in Operations (3-3) 3 hrs.
The purpose of this course is to introduce business and engineering, 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 permission of instructor.

IME 512 Management of Service Operations (3-0) 3 hrs.
An analysis of service industries, exploring differences in planning and controlling operations. Emphasis will be on service system design, service quality, and comparing customer expectations with their perceptions.

IME 516 Design of Experiments and Regression Analysis (3-0) 3 hrs.
Topics related to experimental design and regression analysis. Topics include randomized blocks, latin squares, factorials, multiple correlation and regression, and its application to response surfaces. Prerequisite: IME 261 or equivalent.

IME 524 Human Factors Engineering (2-3) 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 (2-2) 3 hrs.
The synthesis of automated design, analysis, and manufacturing processes through integrated computer systems. Topics in automated graphics, wire-frame, surface and solids modeling, boundary element analysis, and manufacturing process generation will be investigated. Prerequisites: (IME 246 and IME 350) or IME 502.

IME 550 Advanced Plastics Processing (2-2) 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: IME 250 or IME 503 and IME 350 or IME 681.

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.

IME 558 CAM Applications (2-2) 3 hrs.
Custom design of post-processors. Creation of CNC programs through graphical-based systems. Strategies and techniques—including Computer-Aided Processing Planning (CAPP)—to migrate data from CAD to CAM systems. Computer hardware and software requirements for integrated manufacturing. Prerequisite: IME 358 or IME 502.

MECHANICAL AND AERONAUTICAL ENGINEERING

Parviz Merati, Chair
Judah An-Gur
Christopher S. Hong Cho
Daniel Dorney
Jay Easwaran
Srinivas Garimella
Mehshulam Gunasekaran
Philip J. Guichelaar
Jerry H. Hamelin
Richard Hathaway
Arthur Hoadley
James Kamman
Koorosh Naghshineh
Iskender Sahin
Rameswar P. Sharma
John Valasek
Dennis J. Vandenberg
Molly W. Williams

Adjunct Faculty
Jerome H. Hemmey
Raymond N. House, Jr.
Omair Saiman
Richard C. Schubert
William J. Stiefel III
Robert P. Zipp

The Department of Mechanical and Aeronautical Engineering offers programs leading to the degree of Bachelor of Science in Engineering (Mechanical or Aeronautical). The programs are designed to provide engineering expertise appropriate to the diversity in the specific engineering program selected. These programs include mathematics, general education subjects, the basic sciences, the engineering sciences, product design, and an integrated computer experience. Electives may be used to deepen or broaden the program.

Mechanical engineers are found in almost every industry. Examples of areas for career opportunities include manufacturing, machine tool design, and product development; land, sea, air, and space vehicles and systems, energy conversion and energy distribution, computer hardware and computer software; environmental systems, and construction and urban development. Opportunities for mechanical engineers continue to develop with the rapid expansion of our knowledge base and population growth.

Aeronautical Engineers find career opportunities in the aerospace industry and other engineering areas capitalizing on their strong applied engineering background. Much of their course work is specialized to the aerospace fields. Offerings for those interested in automotive engineering include internal combustion engines, vehicle performance and vehicle structures.

Academic Advising
Students should contact a mechanical and aeronautical engineering academic advisor as early as possible. Advisors are available to assist in individual program planning, to recommend electives appropriate to a student's educational objectives, to discuss employment opportunities, and to help solve academic problems. Substitutions and transfer credit must be approved by a departmental advisor, the curriculum committee, and the department chair. The academic advisors are located in Room 2038, Kohrman Hall, (616) 387-4033.

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, Durametallic Corporation, Society of Manufacturing Engineers, H. H. Harris Foundation, and the College itself. Program announcements are distributed during the application period.

The Department of Mechanical and Aeronautical Engineering also annually presents several awards, which include:
• Dean E. Bluman Memorial Award—presented to an outstanding student of mechanical engineering who has demonstrated interest and ability in liberal studies. This is in honor and recognition of the late Dr. Bluman who, during his tenure as Professor and Chairman of Mechanical Engineering, was an active supporter of liberal education for engineering students.
• Outstanding Mechanical Engineering Scholar Award—presented to a mechanical engineering student who is outstanding 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 who is selected using University-wide criteria which includes senior standing, superior academic ability, extra-curricular involvement, and professional promise.

Cooperative Education
Students may elect the cooperative plan of education. In this plan, the student alternates a semester of study on campus with a semester of compensated industrial experience. Students may work in any area in which mechanical engineers may be found.

Additional Information
General information regarding advising, scholarships, and special programs of interest to students in this department may be found under the beginning of the Engineering and Applied Sciences section of this catalog. Enrollment will not be honored in any course, when other students are requesting that course, if the student does not attend the first class meeting (lecture or lab) unless prior arrangements have been made with the instructor. Students not attending courses for whatever reasons are responsible for processing drop slips with the Registration Office if fees are to be refunded.

Aeronautical Engineering Degree Program
Candidates for the Bachelor of Science in Engineering (Aeronautical) degree must satisfy the following requirements in addition to those required by Western Michigan University:
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) that must begin at the 100-200 level and conclude with a course at the 300-400 level. Both courses must have the same course prefix, provide breadth, and must not be a selection of unrelated introductory courses. The sequence may be selected from General
### Mechanical Engineering

**Bachelor of Science in Engineering (Mechanical Degree)**

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.

**Mechanical Engineering Degree 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. The sequence may be selected from General Education Areas I, II, and/or IV as part of the University General Education requirements. If the University General Education requirements have been otherwise satisfied, the sequence may be from any of the humanities, fine arts, social sciences, and/or behavioral sciences.

2. A "C" average or better must be earned in courses presented for graduation with an AAE, 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 137 semester credit hours. The schedule below is an example of one leading to graduation in eight semesters, beginning in the fall. Pre-engineering requirements are in darker italic print.

**First Semester** — 16 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MATH 122</td>
<td>Calculus I</td>
<td>4</td>
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<tr>
<td>CHEM 102</td>
<td>OR 101 General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CS 106</td>
<td>BASIC for Engineers</td>
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**Second Semester** — 18 hours

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<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>MATH 123</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 205</td>
<td>Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 206</td>
<td>Physics I Lab</td>
<td>3</td>
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**Third Semester** — 19 hours

<table>
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<tr>
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<tbody>
<tr>
<td>MATH 272</td>
<td>Vector/Calculus</td>
<td>4</td>
</tr>
<tr>
<td>PHY 207</td>
<td>Electricity and Light</td>
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</tr>
<tr>
<td>PHY 208</td>
<td>Physics II Lab</td>
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**Fourth Semester** — 17 hours

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<tr>
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<td>Introduction to Linear Algebra and Diff. Eq.</td>
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<tr>
<td>ME 362</td>
<td>Theory of Engineering Experimentation</td>
<td>3</td>
</tr>
<tr>
<td>ME 258</td>
<td>Dynamics</td>
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**Fifth Semester** — 17 hours

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<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ME 450</td>
<td>Non-Mechanical Materials</td>
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<tr>
<td>ME 257</td>
<td>Mechanics of Materials</td>
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<td>ME 358</td>
<td>Mechanism Analysis</td>
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<tr>
<td>ME 356</td>
<td>Fluid Mechanics</td>
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**Sixth Semester** — 16 hours

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ME 335</td>
<td>Mechanical Engineering Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>ME 360</td>
<td>Control Systems</td>
<td>3</td>
</tr>
<tr>
<td>ME 431</td>
<td>Heat Transfer</td>
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**Seventh Semester** — 18 hours

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<tbody>
<tr>
<td>ME 479</td>
<td>Mech/Aero Project Planning</td>
<td>4</td>
</tr>
<tr>
<td>AAE 463</td>
<td>Aircraft Structural Design</td>
<td>4</td>
</tr>
<tr>
<td>AAE 466</td>
<td>Aero Propulsion</td>
<td>4</td>
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<tr>
<td>AAE 455</td>
<td>Flight Vehicle Performance</td>
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**Eighth Semester** — 16 hours

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>AAE 469</td>
<td>Aircraft Design</td>
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<tr>
<td>AAE 490</td>
<td>Mech/Aero Engineering Project</td>
<td>3</td>
</tr>
<tr>
<td>AAE 472</td>
<td>Compress. Aerodynamics</td>
<td>3</td>
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</table>

**Baccalaureate Writing Requirement**

Students who have chosen the Aeronautical Engineering curriculum will satisfy the Baccalaureate Writing Requirement by successfully completing ME 335 Mechanical Engineering Laboratory, or ME 453 Machine Design II, or ME 480 Mechanical Engineering Project.

**First Semester** — 18 hours

<table>
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<tbody>
<tr>
<td>MATH 122</td>
<td>Calculus I</td>
<td>4</td>
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<tr>
<td>IME 142</td>
<td>Engineering Graphics</td>
<td>3</td>
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<tr>
<td>CHEM 101</td>
<td>OR 102 General Chemistry</td>
<td>4</td>
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<tr>
<td>IME 102</td>
<td>Writing Requirement</td>
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**Second Semester** — 17 hours

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</tr>
<tr>
<td>PHYS 206</td>
<td>Mechanics and Heat Lab</td>
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<tr>
<td>ME 220</td>
<td>Processes and Materials in Manufacturing</td>
<td>4</td>
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<td>PEGN</td>
<td>Physical Education</td>
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**Third Semester** — 19 hours

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</tr>
<tr>
<td>PHYS 208</td>
<td>Electrical and Light</td>
<td>4</td>
</tr>
<tr>
<td>ME 232</td>
<td>Thermodynamics</td>
<td>3</td>
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<tr>
<td>ECE 210</td>
<td>Circuit Analysis</td>
<td>4</td>
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<tr>
<td>ME 256</td>
<td>Statics</td>
<td>3</td>
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**Fourth Semester** — 19 hours

<table>
<thead>
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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MATH 374</td>
<td>Introduction to Linear Algebra and Diff. Equ.</td>
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<tr>
<td>PHYS 309</td>
<td>Vector and Multivariate Calculus</td>
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<tr>
<td>PHYS 410</td>
<td>Modern Physics</td>
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**Fifth Semester** — 18-19 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ME 356</td>
<td>Fluid Mechanics</td>
<td>3</td>
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<tr>
<td>ME 358</td>
<td>Mechanism Analysis</td>
<td>3</td>
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<tr>
<td>ME 365</td>
<td>Machine Design II</td>
<td>3</td>
</tr>
<tr>
<td>ECE 211</td>
<td>Machine and Electronic Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ME 431</td>
<td>Heat Transfer</td>
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**Sixth Semester** — 15-16 hours

<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ME 360</td>
<td>Control Systems</td>
<td>3</td>
</tr>
<tr>
<td>ME 335</td>
<td>Mechanical Engineering Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>ME 479</td>
<td>Project Planning</td>
<td>3</td>
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<tr>
<td>ME 431</td>
<td>Heat Transfer</td>
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**Seventh Semester** — 13-15 hours

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<td>Group 3 Elective</td>
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<td>ME 431</td>
<td>Group 3 Elective</td>
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<tr>
<td>ME 431</td>
<td>Group 3 Elective</td>
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**Eighth Semester** — 12-13 hours

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ME 480</td>
<td>Mechanical and Aeronautical Engineering Project</td>
<td>3</td>
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<tr>
<td>ME 309</td>
<td>Engineering Economy</td>
<td>2</td>
</tr>
<tr>
<td>AREA IV</td>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

* At least two of these courses must be at the 300-400 level.
Aeronautical Engineering Courses (AAE)

Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-lab hours). *After title denotes course is for students following catalogs prior to the 1989-91 issue.

**Group 2 — Advanced Design** Select one of the following:

- AAE 467 Internal Combustion Engines II* 4
- ME 453 Machine Design II 3
- AAE 468 Engine Design* 3
- AAE 469 Aircraft Design 3

**Group 3 — Elective Emphasis** Select one from the following:

- ME 439 Design of Thermal Systems* 3
- AAE 468 Aircraft Propulsion (L) 3
- AAE 467 Internal Combustion Engines II 4
- ME 457 Experimental Solid Mechanics 3
- ME 558 Mechanical Vibrations 3
- ME 459 Dynamics of Machinery 3
- ME 559 Machine Dynamics 3
- ME 433 Environmental Systems Design in Buildings* 3
- ME 439 Design of Thermal Systems* (L) 3
- ME 453 Machine Design II 3
- ME 553 Advanced Product Design* 3
- AAE 468 Engine Design* (L) 3
- AAE 469 Aircraft Design 3

*This course has a prerequisite that is an elective.

**Fluid Dynamics**

- AAE 361 Flight Vehicle Aerodynamics (L) 3
- AAE 472 Compressible Fluid Flow 3

**Solid Mechanics and Structures**

- ME 457 Experimental Solid Mechanics (L) 3
- ME 450 Non-Metallic Materials 3
- ME 575 Tribology—Principles and Applications 3
- AAE 363 Internal Combustion Engines I 3
- AAE 463 Aircraft Structural Design 3
- AAE 470 Vehicle Structural Design 4

**Design**

- ME 433 Environmental Systems Design in Buildings* 3
- ME 439 Design of Thermal Systems* (L) 3
- ME 453 Machine Design II 3
- ME 553 Advanced Product Design* 3
- AAE 468 Engine Design* (L) 3
- AAE 469 Aircraft Design 3

**Aeronautical Engineering Courses (AAE)**

- AAE 361 Flight Vehicle Aerodynamics (L) 3
- AAE 467 Internal Combustion Engines II* 4
- ME 453 Machine Design II 3
- AAE 468 Engine Design* 3
- AAE 469 Aircraft Design 3

**Thermodynamics**

- AAE 468 Aircraft Propulsion (L) 3
- AAE 467 Internal Combustion Engines II 4

**Mechanics and Structures**

- ME 457 Experimental Solid Mechanics (L) 3
- ME 450 Non-Metallic Materials 3
- ME 575 Tribology—Principles and Applications 3
- AAE 363 Internal Combustion Engines I 3
- AAE 463 Aircraft Structural Design 3
- AAE 470 Vehicle Structural Design 4

**Design**

- ME 433 Environmental Systems Design in Buildings* 3
- ME 439 Design of Thermal Systems* (L) 3
- ME 453 Machine Design II 3
- ME 553 Advanced Product Design* 3
- AAE 468 Engine Design* (L) 3
- AAE 469 Aircraft Design 3

*This course has a prerequisite that is an elective.

**Aeronautical Engineering Courses (AAE)**

- AAE 362 Subsonic Aerodynamics (3-0) 3 hrs.
- AAE 363 Internal Combustion Engines I (2-3) 3 hrs.
- AAE 364 Aircraft Stabilty and Control (3-0) 3 hrs.
- AAE 459 Flight Test Engineering and Design (1-6) 3 hrs.
- AAE 463 Aircraft Structural Design (4-0) 4 hrs.
- AAE 466 Aeronautical Propulsion Systems (3-3) 4 hrs.
- AAE 467 Internal Combustion Engines II (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.
AEE 469 Engine Design (1-6)
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. Prerequisite: AEE 467.

AEE 469 Aircraft Design
3 hrs.
Conceptual and preliminary design of aircraft emphasizing performance, stability and control, and total vehicle efficiency. Prerequisite: AEE 469 and AEE 450.

AEE 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.

AEE 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 232, ME 356.

AEE 495 Topics in Aeronautical Engineering
1-6 hrs.
A specialized course dealing with a particular area of aircraft and/or automotive 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.

AEE 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)
Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture-hours-lab-hours).

ME 220 Processes and Materials in Manufacturing (3-3)
4 hrs.
Manufacturing principles and organization, principal processes used to make metal, plastic and ceramic parts, design considerations for computer integrated manufacturing, simultaneous engineering.

ME 232 Thermodynamics (3-0)
3 hrs.
Fundamental laws of classic thermodynamics including ideal and non-ideal processes. Applications are studied in relationship to the traditional thermodynamic cycles and to alternate energy systems such as solar and wind energy. Prerequisites: MATH 123, PHYS 205, PHYS 206.

ME 250 Materials Science (3-0)
3 hrs.
First course in the science of engineering materials. Relationships between microscopic structure and the mechanical properties of metals, polymers and ceramics are developed. Includes treatment of environmental effects on all materials and optical and electronic properties. Prerequisites: CHEM 101 or 102, MATH 122.

ME 253 Statics and Mechanics of Materials (4-0)
4 hrs.
Forces and moments acting upon structural 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 members including stress distribution, deflection, and buckling. Prerequisites: MATH 123, CS 106.

ME 257 Mechanics of Materials (4-0)
4 hrs.
Compressibility, pressure, tension, torsion, and bending in structural members including stress distribution, deflection, buckling, and fatigue on engineering materials. Design and selection of inorganic machine members and knowledge of design codes and standards are applied. Prerequisite: ME 256.

ME 258 Dynamics (3-0)
3 hrs.
Kinematics and mechanics 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. Compressible and incompressible 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. Prerequisites: ME 220 or AEE 261; ME 250; ME 257; ME 358. ME 358 may be taken concurrently.

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, convection, and forced convection, design of heat exchangers, and computer applications. Prerequisites: ME 232, ME 356.

ME 432 Thermodynamics II (3-0)
3 hrs.
Advanced topics including gas-vapor mixtures, combustion, and compressible flow. Prerequisites: ME 232, ME 356. ME 356 may be taken concurrently.

ME 433 Environmental Systems Design in Buildings (3-1)
3 hrs.
Theory of the conditioning of air, applications to the design of systems to control temperature, humidity, distribution, and ventilation. Computer simulation of buildings and systems. Prerequisites: ME 431, ME 432.

ME 439 Design of Thermal Systems (2-3)
3 hrs.
Application of energy concepts to thermal fluid 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 431 may be taken concurrently.

ME 450 Non-Metallic Materials (3-0)
3 hrs.
Advanced course in the science of nonmetallic engineering materials—polymers, elastomers, composite materials and ceramics. Mechanical properties useful to design are related to atomic structure and fabrication processes. Includes fracture mechanics of polymers and composites. Prerequisites: ME 250, ME 365.

ME 451 Design of Solar Systems (3-0)
3 hrs.
Analysis of alternate energy options. Design of complete solar system including collector, storage, and controls. Economics and long-term performance of solar systems using computer-aided design programs. Prerequisites: ME 335.

ME 453 Machine Design II (2-3)
3 hrs.
The application of mechanical engineering concepts to the mechanical synthesis process. Computer-aided design, computer modeling, and optimization applied to the synthesis of a system. Prerequisites: ME 362, ME 365.

ME 455 Intermediate Dynamics (3-0)
3 hrs.
Three dimensional kinematics and dynamics of rigid bodies; equations of motion; Lagrange’s equations; work and energy; impulse and momentum; virtual work; stability;
computer simulation, intro. to vibrations.  
Prerequisites: ME 258, MATH 374

ME 457 Experimental Solid Mechanics (2-3)  
3 hrs.  
Stress analysis theories. Principles and methods of non-destructive testing including electrical resistance strain gage techniques, photoelasticity, and laser-based techniques.  
Experimentation and theory evaluation including planning, testing, and data analysis with report preparation.  
Prerequisites: ME 250, ME 257, ME 335.

ME 459 Dynamics of Machinery (3-0)  
3 hrs.  
Analysis of static, dynamic, and combined forces in the design of machines. Balancing of machines including multicylinder engines. Gyroscopic forces, Computer applications.  
Prerequisite: ME 356.

ME 463 Structural Vibrations (3-0)  
3 hrs.  

ME 464 Engineering Noise Control (3-0)  
3 hrs.  

ME 479 Mechanical and Aeronautical Engineering Project Planning (1)  
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. Prerequisite: ME 335, ME 360.

ME 480 Mechanical and Aeronautical Engineering Project (1-6)  
3 hrs.  
An engineering experience in completing and open-ended design project including synthesis, analysis, evaluation, and presentation. Classroom discussion subjects include legal, ethical and professional aspects of engineering practice. Prerequisites: ME 479, ME 453 or ME 439 or AAE 469 or AAE 470.

ME 481 Vehicle Design (2-3)  
3 hrs.  
Design of vehicle systems and/or subsystems. Prerequisites: ME 259, ME 257, ME 258, ME 250, or by permission of instructor.

ME 490 Independent Research and Development  
1-4 hrs.  
Individual research or special project. Available only by special arrangement with an instructor and approved by the department chair. Prerequisite: Consent of department.

ME 495 Topics in Mechanical Engineering: Variable Topics  
1-4 hrs.  
A specialized course dealing with some particular area of mechanical engineering not included in other course offerings. May be repeated for credit with a different topic up to six credits. Prerequisite: Consent of department.

ME 498 Independent Readings  
1-6 hrs.  
An independent readings assignment, the description and purpose of which will be set forth on a form available at the department office. Prerequisite: Consent of department.

ME 499 Independent Studies  
1-6 hrs.  
An independent studies assignment available only by special arrangement with an instructor and approved by the department chair. Prerequisite: Consent of department.

ME 530 Theoretical and Computational Fluid Mechanics (3-0)  
3 hrs.  
Theory and numerical implementation of ideal flow, viscous effects, and exact solutions of Navier-Stokes equations. Special emphasis will be on planning methods, conformal mapping, and singular distributions for flows around two- and three-dimensional bodies. Familiarity with VMS and some Fortran experience are required. Prerequisites: ME 356 and MATH 506, or consent of instructor.

ME 553 Advanced Product Engineering (3-0)  
3 hrs.  
An engineering design project from concept to adoption. Static and dynamic analysis. Mechanical systems design and layout. Prerequisites: ME 360, ME 453.

ME 558 Mechanical Vibrations (3-0)  
3 hrs.  
A study of the oscillatory motion of physical systems with emphasis on the effects of vibrations on the performance and safety of mechanical systems. Prerequisites: ME 258, MATH 374.

ME 559 Machine Dynamics (3-0)  
3 hrs.  
Static and dynamic force analysis of mechanisms such as linkage, cams, and shafts, dynamics of reciprocating engines, balancing, and spatial mechanisms. Prerequisite: ME 358.

ME 560 Engineering Analysis (3-0)  
3 hrs.  
Application of vector analysis and differential equations to the solution of complex engineering problems. Prerequisite: ME 360 or equivalent.

ME 561 Finite Element Method (3-0)  
3 hrs.  
Weighted residual methods, finite element techniques in one-, two-, and three-dimensional problems of heat transfer, fluid flow, structures and elasticity, time dependent problems, higher order elements, and non-linear problems. Prerequisite: MATH 506 or equivalent.

ME 562 Application of Numerical Methods in Engineering (3-0)  
3 hrs.  
Finite difference methods for initial value and boundary value problems, 2D finite differencing, boundary element methods applications to differential equations of heat transfer, fluid flow, and solid mechanics. Prerequisite: MATH 506 or equivalent.

ME 563 Structural Vibrations  
3 hrs.  

ME 571 Gas Dynamics (3-0)  
3 hrs.  

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. Prerequisite: 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 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.
The Department of Paper and Printing Science and Engineering offers three B.S. programs and an M.S. program which provide extensive scientific and technical education to prepare graduates for professional employment in the research and development, technical-manufacturing, and technical-marketing areas of the paper, pulp, environmental, printing and related fields. The breadth and depth of the programs are such that a significant number of graduates have progressed into research, production, management and marketing positions and into graduate school.

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 transfers 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 2630 McCracken Hall.

Additional Information

General information regarding advising, scholarships, and special programs of interest to students in this department may be found in the beginning of the College of Engineering and Applied Sciences' section of the catalog.

REQUIRED PREREQUISITE GRADE

Students graduating from Paper Science, Paper Engineering/Process, Paper Engineering/Environmental, and Paper Science and Engineering minor must have a grade of "C" or better in all PAPR prefixed prerequisite courses.

MINOR

A minor in paper science and engineering may be earned by completing the following 21 semester hours of departmental courses: PAPR 100, PAPR 102, PAPR 203, PAPR 204, PAPR 306 and PAPR 352. The minor is most suitable for other engineering graduates and physics and chemistry graduates.

Paper Science

Bachelor of Science Degree

Requirements

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to University requirements stated elsewhere in this bulletin:

1. Students must earn a "C" or better grade in all 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. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall.

Baccalaureate Writing Requirement

Students who have chosen the Paper Science major will satisfy the Baccalaureate Writing Requirement by successfully completing PAPR 310 Work Experience/Coop and PAPR 485 Research Design.

First Semester — 16 hours

PAPR 100 Introduction to Pulp and Paper Manufacture 3

CHEM 101 General Chemistry I 3

CHEM 102 General Chemistry II 4

MATH 122 Calculus I 4

CS 106 BASIC for Engineers 1

PEGN Physical Education 1

AREA I General Education 3

Second Semester — 17 hours

PAPR 102 Converting and Printing 3

CHEM 120 General Chemistry II 4

MATH 123 Calculus II 4

IME 102 Technical Communication 3

AREA II General Education (ECON 201) 3

Third Semester — 18 hours

PAPR 203 Pulping and Bleaching 4

IME 261 Engineering Statistics OR

MATH 261 Engineering Statistics 3

PHYS 205 Mechanics and Heat 4

CHEM 360 Organic Chemistry I 4

AREA II 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 I General Education 3

ELECTIVE 3

Sixth Semester — 17 hours

PAPR 311 Unit Operations in Chemical Engineering I 3

PAPR 312 Unit Operations in Chemical Engineering II 3

PAPR 342 Coating 4

PAPR 352 Recycling and Denking 3

MATH 374 Introduction to Linear Algebra and Differential Equations 4

Seventh Semester — 17 hours

PAPR 310 Work Experience/Co-op 1

PAPR 440 Seminar 1

PAPR 483 Process Control I 4

PAPR 486 Research Design 3

CHEM 430 Physical Chemistry I 3

PEGN Physical Education 1

ELECTIVE 4

Eighth Semester — 15 hours

PAPR 430 Surface and Wet End Science 3

PAPR 440 Seminar 1

CHEM 436 Physical Chemistry Lab 1

ELECTIVE 3

ELECTIVE 4

ELECTIVES — Students must select a minimum of 17 credit hours from the following.

PAPR 310 Work Experience/Co-op 2

PAPR 484 Process Control II 4

PAPR 486 Independent Research 3

CHEM 222 Quantitative Analysis 4

CHEM 361 Organic Chemistry II 4

CHEM 431 Physical Chemistry II 3

CHEM 436 Physical Chemistry Lab 1

CHEM 520 Polymer Chemistry 3

MATH 567 Statistical Design and Analysis 4

Preferred Electives are shown in italic type.

Paper Engineering

Bachelor of Science in Engineering (Paper) Degree

Admission

1. To be admitted to this Engineering curriculum, a student must complete all Pre-engineering requirements with grades of "C" or better. These requirements may be found in the beginning of the College of Engineering and Applied Sciences' section. The Pre-engineering course requirements for this curriculum are in darker print in the schedule below.

2. Students seeking admission to this curriculum must submit an application following procedures established by the College of Engineering and Applied Sciences. Upper level transfer students 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.

Paper Engineering Program Requirements

Candidates for the Bachelor of Science in Engineering (paper) degree must satisfy the following requirements in addition to those required by Western Michigan University:

1. To satisfy professional engineering accreditation requirements, all students must complete a sequence of two courses (minimum of six credit hours in the humanities, fine arts, social sciences, and/or behavioral sciences. The sequence must begin with a course at the 100-200 level and conclude with a course at the 300-400 level. Both courses must have the same course prefix, must provide depth.
and must not be a selection of unrelated introductory courses. The sequence may be selected from General Education Areas I, II, and/or IV as part of the University General Education requirements. If the University General Education requirements have been otherwise satisfied, the sequence may be from any of the humanities, fine arts, social sciences, and/or behavioral sciences.

2. Students must earn a "C" or better grade in all PAPP prefixed prerequisite courses. The requirement of a PAPP prefixed prerequisite course will not be fulfilled with a grade less than "C"

3. No more than two grades of "D" or "DC" may be presented for graduation

4. At least two of the General Education courses must be at the 300-400 level

5. Students must complete the following program of 136 semester credit hours which includes the courses in one of the following elective sequences: Paper Engineering/Process or Paper Engineering/Environmental. One sequence must be elected and taken in its entirety. The schedules below are examples leading to graduation in eight semesters, beginning in fall.

Pre-engineering requirements are in darker italic print.

Baccalaureate Writing Requirement
Students who have chosen the Paper Engineering major will satisfy the Baccalaureate Writing Requirement by successfully completing PAPP 310 Work Experience/Co-op and PAPP 485 Research Design.

Paper Engineering/Process

First Semester — 16 hours
PAPP 100 Introduction to Pulp and Paper Manufacture 3
CHEM 101 General Chemistry I OR OR
CHEM 102 General Chemistry I 4
MATH 122 Calculus I 4
CS 106 BASIC for Engineers 1
PEGN Physical Education 1
AREA I General Education 3

Second Semester — 17 hours
PAPP 102 Converting and Printing 3
CHEM 120 General Chemistry II 4
MATH 123 Calculus II 4
IME 102 Technical Communications 4
AREA II General Education (ECON 201) 3

Third Semester — 18 hours
PAPP 203 Pulping and Bleaching 4
IME 261 Engineering Statistics 4
MATH 261 Engineering Statistics 3
CS 205 Mechanics and Heat 4
CHEM 360 Organic Chemistry I 4
AREA II General Education 3

Fourth Semester — 19 hours
PAPP 261 Environmental Engineering 3
MATH 272 Vector and Multivariate Calculus 4
PHYS 207 Electricity and Light 4
AREA IV General Education 4

Fifth Semester — 17 hours
PAPP 305 Paper Physics Fundamentals 4
PAPP 306 Material and Energy Balance 4
PAPP 333 Carbohydrate and Lignin Chemistry 3
AREA I General Education 3

Sixth Semester — 17 hours
PAPP 311 Unit Operations in Chemical Engineering I 3
PAPP 312 Unit Operations in Chemical Engineering II 3
PAPP 342 Coating 4
PAPP 352 Recycling and Deinking 3
MATH 374 Introduction to Linear Algebra and Differential Equations 4

Seventh Semester — 17 hours
PAPP 310 Work Experience/Co-op 1
PAPP 440 Seminar 1
PAPP 485 Research Design 3
PAPP 481 Process Engineering and Design 4

*ELECTIVE 3

Eighth Semester — 15 hours
CHEM 436 Physical Chemistry Lab 1
PAPP 430 Surface Science and Wet End Science 3
PAPP 440 Seminar 1
PAPP 480 Process Engineering and Design 4

*ELECTIVE 3

*ELECTIVES — Students must select a minimum of 13 credit hours from the following:

PAPP 310 Work Experience/Co-op 2
PAPP 494 Process Control II 4
PAPP 496 Independent Research 3
MATH 567 Statistical Design and Analysis 4
MAE 253 Statistics and Mechanics of Materials 4
ECO 210 Circuit Analysis 4
tIME 310 Engineering Economy 3
tMMGT300 Fundamentals of Management 3
tMMGT453 Organizational Behavior 3

Preferred electives are shown in italics. Not more than one of these courses can be selected.

Paper Engineering/Environmental

First Semester — 16 hours
PAPP 100 Introduction to Pulp and Paper Manufacture 3
CHEM 101 General Chemistry I OR OR
CHEM 102 General Chemistry I 4
MATH 122 Calculus I 4
CS 106 BASIC for Engineers 1
PEGN Physical Education 1
AREA I General Education 3

Second Semester — 17 hours
PAPP 102 Converting and Printing 3
CHEM 120 General Chemistry II 4
MATH 123 Calculus II 4
IME 102 Technical Communications 4
CS 106 BASIC for Engineers 1
PEGN Physical Education 1
AREA I General Education 3

Third Semester — 18 hours
PAPP 203 Pulping and Bleaching 4
IME 261 Engineering Statistics OR
MATH 261 Engineering Statistics 3

PHYS 205 Mechanics and Heat 4
CHEM 360 Organic Chemistry I 4
AREA II General Education 3

Fourth Semester — 19 hours
PAPP 261 Environmental Engineering 3
MATH 272 Vector and Multivariate Calculus 4
PHYS 207 Electricity and Light 4
AREA IV General Education 4

Fifth Semester — 17 hours
PAPP 305 Paper Physics Fundamentals 4
PAPP 306 Material and Energy Balance 4
PAPP 333 Carbohydrate and Lignin Chemistry 3
AREA I General Education 3

Sixth Semester — 17 hours
PAPP 311 Unit Operations in Chemical Engineering I 3
PAPP 312 Unit Operations in Chemical Engineering II 3
PAPP 352 Recycling and Deinking 3
MATH 374 Introduction to Linear Algebra and Differential Equations 4

*ELECTIVE 3

Seventh Semester — 17 hours
PAPP 310 Work Experience/Co-op 1
PAPP 440 Seminar 1
PAPP 485 Research Design 3
PAPP 483 Process Control I 4

*ELECTIVE 3

*ELECTIVES — Students must select a minimum of 13 credit hours from the following:

PAPP 310 Work Experience/Co-op 2
PAPP 494 Process Control II 4
PAPP 496 Independent Research 3
MATH 567 Statistical Design and Analysis 4
MAE 253 Statistics and Mechanics of Materials 4
ECO 210 Circuit Analysis 4
tIME 310 Engineering Economy 3
tMMGT300 Fundamentals of Management 3
tMMGT453 Organizational Behavior 3

Preferred electives are shown in italics. Not more than one of these courses can be selected.

Printing

Bachelor of Science Degree

Candidates for the Bachelor of Science Degree in Printing must satisfy all of the requirements of 127 hours of either the Marketing or the Management Option. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall.

PhD 205 Mechanics and Heat 4
CHEM 360 Organic Chemistry I 4
AREA II General Education 3

Fourth Semester — 19 hours
PAPP 261 Environmental Engineering 3
MATH 272 Vector and Multivariate Calculus 4
PHYS 207 Electricity and Light 4
AREA IV General Education 4

Fifth Semester — 17 hours
PAPP 305 Paper Physics Fundamentals 4
PAPP 306 Material and Energy Balance 4
PAPP 333 Carbohydrate and Lignin Chemistry 3
AREA I General Education 3

Sixth Semester — 17 hours
PAPP 311 Unit Operations in Chemical Engineering I 3
PAPP 312 Unit Operations in Chemical Engineering II 3
PAPP 342 Coating 4
PAPP 352 Recycling and Deinking 3
MATH 374 Introduction to Linear Algebra and Differential Equations 4

*ELECTIVE 3

Seventh Semester — 17 hours
PAPP 310 Work Experience/Co-op 1
PAPP 440 Seminar 1
PAPP 485 Research Design 3
PAPP 483 Process Control I 4

*ELECTIVE 3

*ELECTIVES — Students must select a minimum of 13 credit hours from the following:

PAPP 310 Work Experience/Co-op 2
PAPP 494 Process Control II 4
PAPP 496 Independent Research 3
MATH 567 Statistical Design and Analysis 4
MAE 253 Statistics and Mechanics of Materials 4
ECO 210 Circuit Analysis 4
tIME 310 Engineering Economy 3
tMMGT300 Fundamentals of Management 3
tMMGT453 Organizational Behavior 3

Preferred electives are shown in italics. Not more than one of these courses can be selected.

Printing

Bachelor of Science Degree

Candidates for the Bachelor of Science Degree in Printing must satisfy all of the requirements of 127 hours of either the Marketing or the Management Option. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall.

PhD 205 Mechanics and Heat 4
CHEM 360 Organic Chemistry I 4
AREA II General Education 3

Fourth Semester — 19 hours
PAPP 261 Environmental Engineering 3
MATH 272 Vector and Multivariate Calculus 4
PHYS 207 Electricity and Light 4
AREA IV General Education 4

Fifth Semester — 17 hours
PAPP 305 Paper Physics Fundamentals 4
PAPP 306 Material and Energy Balance 4
PAPP 333 Carbohydrate and Lignin Chemistry 3
AREA I General Education 3

Sixth Semester — 17 hours
PAPP 311 Unit Operations in Chemical Engineering I 3
PAPP 312 Unit Operations in Chemical Engineering II 3
PAPP 342 Coating 4
PAPP 352 Recycling and Deinking 3
MATH 374 Introduction to Linear Algebra and Differential Equations 4

*ELECTIVE 3

Seventh Semester — 17 hours
PAPP 310 Work Experience/Co-op 1
PAPP 440 Seminar 1
PAPP 485 Research Design 3
PAPP 483 Process Control I 4

*ELECTIVE 3

*ELECTIVES — Students must select a minimum of 13 credit hours from the following:

PAPP 310 Work Experience/Co-op 2
PAPP 494 Process Control II 4
PAPP 496 Independent Research 3
MATH 567 Statistical Design and Analysis 4
MAE 253 Statistics and Mechanics of Materials 4
ECO 210 Circuit Analysis 4
tIME 310 Engineering Economy 3
tMMGT300 Fundamentals of Management 3
tMMGT453 Organizational Behavior 3

Preferred electives are shown in italics. Not more than one of these courses can be selected.

Printing
### Baccalaureate Writing Requirement

Students who have chosen the Printing major will satisfy the Baccalaureate Writing Requirement by successfully completing PAPP 358 Flexographic Presswork, PAPP 359 Gravure Presswork, and PAPP 454 Advanced Lithographic Technology.

### MANAGEMENT OPTION

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<tr>
<td>MATH 116</td>
<td>Finite Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>PAPP 150</td>
<td>Introduction to Graphic Arts*</td>
<td>3</td>
</tr>
<tr>
<td>PAPP 157</td>
<td>Line and Halftone Photography</td>
<td>3</td>
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<tr>
<td>AREA V</td>
<td>General Education College Writing (IE 102 or BIS 142 or ENGL 105 recommended)</td>
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<tr>
<td>AREA I</td>
<td>General Education**</td>
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<tr>
<td>PAPP 253</td>
<td>Imaging</td>
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### Second Semester — 16 hours

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<td>ECON 201</td>
<td>Principles of Economics</td>
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<td>AREA I</td>
<td>General Education**</td>
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### Third Semester — 18 hours

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<td>Typographic Layout and Design</td>
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<td>PAPP 250</td>
<td>Lithographic Presswork</td>
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<td>PAPP 251</td>
<td>Electronic Publishing</td>
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<tr>
<td>PAPP 259</td>
<td>Introduction to Gravure</td>
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<td>MATH 216</td>
<td>Business Statistics</td>
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<td>IME 150</td>
<td>Introduction to Manufacturing</td>
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### Fourth Semester — 16 hours

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<td>PAPP 357</td>
<td>Color Separation Processes</td>
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<tr>
<td>PAPP 258</td>
<td>Introduction to Flexography</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 201</td>
<td>Accounting Concepts and Applications</td>
<td>3</td>
</tr>
<tr>
<td>IME 305</td>
<td>Work Analysis</td>
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<tr>
<td>ECON 202</td>
<td>Principles of Economics</td>
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<tr>
<td>PEGN</td>
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### Fifth Semester — 15 hours

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>PAPP 160</td>
<td>Introduction to Industrial Environmental Control</td>
<td>3</td>
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<tr>
<td>OR PAPP 102</td>
<td>Converting and Printing</td>
<td>3</td>
</tr>
<tr>
<td>PAPP 362</td>
<td>Estimating</td>
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<td>MGMT 300</td>
<td>Fundamentals of Management</td>
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<tr>
<td>IME 326</td>
<td>Operations Planning and Control</td>
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<td>IME 328</td>
<td>Quality Assurance and Control</td>
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### Sixth Semester — 15 hours

<table>
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<tr>
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<tbody>
<tr>
<td>PAPP 354</td>
<td>Paper Industry Processes</td>
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<tr>
<td>PAPP 462</td>
<td>Computer Estimating</td>
<td>2</td>
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<tr>
<td>IME 402</td>
<td>Supervision of Industrial Operations</td>
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<tr>
<td>AREA II</td>
<td>General Education**</td>
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<td>AREA IV</td>
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### Seventh Semester — 17 hours

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<tr>
<td>PAPP 359</td>
<td>Gravure Presswork</td>
<td>3</td>
</tr>
<tr>
<td>PAPP 466</td>
<td>Printing Production</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 374</td>
<td>Advertising</td>
<td>3</td>
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<td>MKTG 376</td>
<td>Sales Administration</td>
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<tr>
<td>AREA I</td>
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<tr>
<td>AREA II</td>
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### Eighth Semester — 14 hours

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<tr>
<td>PAPP 358</td>
<td>Flexographic Presswork</td>
<td>3</td>
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<tr>
<td>PAPP 454</td>
<td>Advanced Lithographic Technology</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 470</td>
<td>Industrial Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 484</td>
<td>Business Logistics</td>
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## Paper and Printing Science and Engineering Courses (PAPP)

A list of General Education courses can be found in “Academic Policies and Procedures” earlier in this catalog. Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-lab hours).

- PAPP 100 Introduction to Pulp and Paper Manufacture (2-3) 3 hrs.
  - A lecture-laboratory consideration of the fundamentals of paper manufacturing processes and equipment. Some time will also be spent on coating, printing and other uses of paper. The student should acquire a basic understanding of the nature and scope of the paper industry. Prerequisites: High school chemistry, CHEM 101 or CHEM 102 concurrent.

- PAPP 102 Printing and Converting (3-0) 3 hrs.
  - A working knowledge of printing and converting will be provided for Paper Science and Engineering students. Printability and related performance factors of substrates along with converting equipment and processes will be stressed. Prerequisite: PAPP 100.

- PAPP 150 Introduction to Graphic Arts (2-3) 3 hrs.
  - An introductory course describing the printing industry. Work is undertaken in copy preparation, composition, photocopy, presswork, and bindery. A comparison of all printing processes will be included. Lithography and screen process printing will be stressed.

- PAPP 151 Typographic Layout and Design (2-3) 3 hrs.
  - The principles of design and typography are studied and applied to the completion of a printed job. Practical experience in the elements of design, tools, and methods used by the graphic artist are included. Prerequisites: PAPP 150 concurrent.

- PAPP 157 Line and Halftone Photography (2-3) 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 effluent management methods and regulations. The topics are covered in concert with public health, ethical, social, legal and economic concerns.
A lecture and laboratory study of wood fibers will be stressed. Prerequisites: MATH 123, PAPR 305 Paper Physics Fundamentals (3-3)

The sources, impacts and management of wood fibers. Analysis is made using chemical, physical, and engineering principles. Lectures are augmented by laboratory exercises and field trips. Prerequisites: PAPR 100 or PAPR 354, CHEM 101 or CHEM 102.

A study of gravure printing focusing on the process, application, technology, and hardware. Prerequisite: PAPR 150.

A study of lithographic presswork focusing on the process, equipment design and application. The laboratory is devoted to problem solving and equipment design. Prerequisite: PAPR 306.

A study of the flexographic printing process focusing on the process, application, technology, and hardware. Prerequisite: PAPR 150.

A study of the prepress preparation of text for printing. The evolution of text preparation from handset type, hotmetal typesetting, photo typesetting, through modern electronic page assembly will be traced. Basic composition fundamentals will be covered and modern composition will be examined. Prerequisites: PAPR 150, BIS 102, or CS 105.

A study of the flexographic printing process focusing on the process, application, technology, and hardware. Prerequisite: PAPR 150.

A study of the gravure printing process focusing on the process, application, technology, and hardware. Prerequisite: PAPR 150.

A study of the environmental engineering processes. 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 technologies and processes will be stressed. Prerequisites: MATH 123, CHEM 101 or 102, PHYS 113 or 205.

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 papermachine trial. Prerequisites: PAPR 204, IME 261, or MATH 364.

Fundamentals of chemical engineering dealing with behavior of gases, thermophysical properties of gases, liquids and solids, thermochromy, and associated problem solving. Emphasis is on mass and energy balances. The laboratory period is utilized as a problem solving workshop. Prerequisites: CHEM 101 or CHEM 102, MATH 123, PHYS 205, PAPR 203 or PAPR 204.

A continuation of PAPR 306 dealing with the unit operations of chemical engineering in the areas of fluid mechanics and heat transfer. Emphasis is on principles and equipment design and application. The laboratory period is devoted to problem solving and equipment design. Prerequisite: PAPR 306.

Experience will be given on basic offset equipment regarding lithographic principles, press operations, mechanical adjustments, simple chemical reactions, as well as the advantages and disadvantages of lithography. Other areas to be studied are multi-color processes, inks, and papers. Prerequisite: PAPR 150.

Emphasis will be placed on determining correct paper impositions. Register requirements, step and repeat procedures, color stripping, proofing and other related skills will be covered. Lithographic platemaking and processes will be emphasized. Prerequisite: PAPR 150.

A study of the flexographic printing process focusing on the process, application, technology, and hardware. Prerequisite: PAPR 150.

A study of the environmental engineering processes. 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 technologies and processes will be stressed. Prerequisites: MATH 123, CHEM 101 or 102, PHYS 113 or 205.

A study of the flexographic printing process focusing on the process, application, technology, and hardware. Prerequisite: PAPR 150.

A study of the environmental engineering processes. 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 technologies and processes will be stressed. Prerequisites: MATH 123, CHEM 101 or 102, PHYS 113 or 205.

A lecture/lab course dealing with the fundamentals of pigmented and functional coating of paper and board. Coating rheology, evaluation of colored papers, and the performance of paper in the graphic arts will also be covered. Prerequisite: PAPR 305.

Physical, chemical and biological characteristics of water. Hydrology, governmental regulations, water and wastewater evaluation and treatment processes. Prerequisites: CHEM 101 or 102.

Physical, chemical and biological characteristics of water. Water, water quality, governmental regulations, evaluation, and the microbiology of water. Prerequisite: CHEM 101 or CHEM 102.

A study of the physical, chemical, and biological characteristics of water. Topics stressed include hydrology, treatment of water, water quality, governmental regulations, evaluation, and the microbiology of water. (This is a non-laboratory course offered for adult education. Credit may not be earned in PAPR 351 by paper science or paper engineering majors.)

The recovery of waste paper and other fiber sources for use in the manufacturing of paper and paper board products and other commercial applications. Waste fiber collection, dispersion, contaminant separation, deinking, and product characteristics. Prerequisite: PAPR 203.

A study of the fundamental principles, design considerations, and use of the unit processes and operations employed in waste water treatment. Physical, physicochemical, and biological treatment systems. Prerequisites: PAPR 306, PAPR 348, PAPR 349.

A study of the environmental engineering processes. 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 technologies and processes will be stressed. Prerequisites: MATH 123, CHEM 101 or 102, PHYS 113 or 205.

A study of the flexographic printing process focusing on the process, application, technology, and hardware. Prerequisite: PAPR 150.

A study of the environmental engineering processes. 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 technologies and processes will be stressed. Prerequisites: MATH 123, CHEM 101 or 102, PHYS 113 or 205.

A study of the environmental engineering processes. 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 technologies and processes will be stressed. Prerequisites: MATH 123, CHEM 101 or 102, PHYS 113 or 205.
inks, substrates, and flexographic press operation. Prerequisite: PAPR 258.

PAPR 359 Gravure Presswork (2-3) 3 hrs.
This lecture/lab course will emphasize traditional cylinder manufacturing, proofing and gravure press operation. Press components, register controls, ink variables, doctor blades, and electrostatic assist will be stressed. Prerequisite: PAPR 259.

PAPR 360 Printing Processes (1-3) 2 hrs.
A course designed to provide Paper Science and Engineering students with a working knowledge of the various printing processes and their relation to the performance factors of paper. Prerequisite: PAS or PAE majors only.

PAPR 362 Estimating (3-0) 3 hrs.
Study of methods used in estimating the price of printed matter before manufacture and in the final pricing of that printed matter after manufacture. Prerequisite: Junior standing.

PAPR 371 Introduction to Independent Research (1-0) 1 hr.
Methods of approaching and planning independent research will be discussed. Familiarity with problems which may be encountered will be gained by attendance at the seminar. At the end of the course the student will have selected a senior thesis or problem topic and an advisor. Prerequisite: Junior standing.

PAPR 400 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 sources are studied. Discussion will include treatment, disposal, in-process utilization, and conversion to useful by-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 Technology (2-3) 3 hrs.
Provides the student with practical problems in press setup. Emphasizes plate imaging, register controls, inks, substrates, and litho press systems. Folding applications are also included. Prerequisites: PAPR 250, CHEM 103.

PAPR 460 Process Engineering and Design (4-0) 4 hrs.
General principles of design used to review, develop and optimize pulp and paper manufacturing processes and facilities. Installation and operating costs, environmental and resource concerns, and performance and safety standards will be used to evaluate alternative solutions. Oral and written reports of individual and team efforts. Prerequisites: PAPR 203, PAPR 204, PAPER 261, PAPR 311, PAPR 312, PAPR 352; or permission of instructor.

PAPR 462 Computer Estimating (1-2) 2 hrs.
A study of methods used in estimating the price of printed materials before manufacture and in the final pricing of that printed matter. Computerized estimating systems and techniques will be used in a lab setting. Prerequisite: PAPR 362.

PAPR 464 Modern Printing Practices (2-0) 2 hrs.
Study, development, application of printing management/marketing production practices. Technical short courses offered by production and service industries may be utilized. May be elected in two hour blocks to a maximum of six hours. Prerequisite: Junior standing.

PAPR 466 Printing Production Management (3-0) 3 hrs.
Managerial procedures used in printing industries to forecast, plan, schedule, and record production to control production costs. Hourly costs of printing machines will be developed by students. Prerequisite: Junior standing.

PAPR 470 Senior Thesis I (0-4 Min.) 2 hrs.
This course is intended to increase the student's ability to solve a research or technical problem. The student will analyze a problem and use this analysis to design an experimental investigation. The student will commence experimental work and give written summaries of literature search and experimental program. Each student will be assigned an advisor for the problem. Weekly participation at student-staff seminars and participation at PAPR 440, Current Topics, is required. Prerequisites: PAPR 371, paper science major.

PAPR 471 Senior Thesis II (0-6 Min.) 3 hrs.
A continuation of PAPR 470, including completion of laboratory work and preparation of a final formal report. A formal oral presentation will be given. Weekly participation at student-staff seminars and participation at PAPR 440, Current Topics, is required. Prerequisite: PAPR 470.

PAPR 472 Senior Engineering Problem I (0-4 Min.) 2 hrs.
This course is intended to increase the ability of an engineering student to analyze and solve a design problem. An individual advisor will be assigned. The student will analyze a problem, design an experimental investigation as needed, and present a completed program in both written and oral form. Weekly participation at student-staff seminars and participation at PAPR 440, Current Topics, are required. Prerequisites: PAPR 371, paper engineering major.

PAPR 473 Senior Engineering Problem II (0-6 Min.) 3 hrs.
A continuation of PAPR 472, including completion of laboratory or design work and preparation of a final report. A formal oral presentation will be given. Weekly participation at student-staff seminars and participation at PAPR 440, Current Topics, are required. Prerequisite: PAPR 472.

PAPR 481 Instrumentation and Process Control (3-0) 3 hrs.
An introduction to automatic control covering the areas of control methods, theory, loop analysis, and industrial control equipment including sensors, transmitters, controllers, and control valves. Prerequisites: CHEM 101 or CHEM 102 or CHEM 103, MATH 123, PHYS 211.

PAPR 482 Application of Control Systems (3-0) 3 hrs.
The use of instrument systems and digital computers to control pulping and paper-making processes. Deals with the design of control combination systems, digital computer components, and computer control strategies in the paper industry. Prerequisite: PAPR 481.

PAPR 483 Process Control I (4-0) 4 hrs.
Introduction to automatic control covering control methods, theory, loop analysis, and control loop hardware including sensors, transmitters, controller and control valves. Includes the necessary secondary loop topics such as circuits (RC and RL) and circuit laws. Prerequisites: PAPR 311, PAPR 312.

PAPR 484 Process Control II (4-0) 4 hrs.
The use of instrument systems, digital computers and programmable logic controllers to control pulping, papermaking and chemical recovery process. Design of control systems, principles of analog and digital systems, digital signal processing and architecture of programmable logic controllers. Prerequisite: PAPR 483.

PAPR 485 Research Design (3-0) 3 hrs.
Research selection, planning, design, and writing. A research project 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. Prerequisite: Senior standing in major.

PAPR 486 Independent Research (3-0) 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 analysis, experimental design, results and conclusions is required. Prerequisite: PAPR 485.

PAPR 495 Topics in Paper and Printing 1-4 hrs.
A special course dealing in some particular subject of interest in Pulp and Paper and/or Printing. May be repeated for credit with different topics. Prerequisite: Permission of instructor.

PAPR 499 Independent Studies 1-6 hrs.
Offers paper science and engineering and paper-making majors with good scholastic records a program of independent study in an area arranged in consultation with the instructor. One to three hours credit per semester, cumulative to six hours. Prerequisite: Permission of instructor.
The College of Fine Arts offers a variety of curricula and subjects in the principal interest areas of the visual and performing arts.

The Department of Art offers the following degree programs: Bachelor of Fine Arts with a major in Art and an emphasis in either Ceramics, Jewelry/Metalsmithing, Painting/Watercolor, Photography, Printmaking, or Sculpture; Bachelor of Fine Arts with a major in Art, Bachelor of Arts with a major in Art Teaching.

The Department of Dance offers two undergraduate degrees: Bachelor of Fine Arts in Dance and Bachelor of Arts in Dance. The Department of Dance participates with the School of Music and Department of Theatre in offering the music theatre performer 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 minor 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 performer degree.

Theatre programs lead to the Bachelor of Arts degree in areas of performance, design-technical theatre, and theatre education. The department also participates with other University departments in offering a music theatre performer program.

Students are encouraged to inquire about curricular combinations not listed specifically in the catalog.

In the belief that arts understanding, involvement, and appreciation are an important part of liberal education, the College of Fine Arts offers many opportunities for the non-arts major to participate in applied, theoretical, and appreciational curricular and co-curricular activities, such as general art and art history courses, dance, musical ensembles, and theatre productions.

### Interdisciplinary Program

**Music Theatre Performer**

**Bachelor of Fine Arts Degree**

**81 credit hours**

**REQUIRED COURSES IN DANCE — 18 hrs.**

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<tbody>
<tr>
<td>DANC 104</td>
<td>Beginning Tap</td>
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<tr>
<td>DANC 110</td>
<td>Beginning Ballet I</td>
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<tr>
<td>DANC 120</td>
<td>Beginning Jazz I</td>
</tr>
<tr>
<td>DANC 400</td>
<td>Practicum</td>
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<tr>
<td>DANC 495</td>
<td>Performance Workshop</td>
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Plus 4 credit hours from Level I or higher of Ballet, Jazz, or Modern Technique. 4

**REQUIRED COURSES IN MUSIC — 23 hrs.**

<table>
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<tr>
<td>MUS 115</td>
<td>Voice Technique I</td>
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<tr>
<td>MUS 116</td>
<td>Voice Technique II</td>
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<tr>
<td>MUS 120</td>
<td>Keyboard Fundamentals</td>
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<tr>
<td>MUS 121</td>
<td>Keyboard Fundamentals</td>
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<tr>
<td>MUS 160</td>
<td>Basic Music (Prereq. MUS 159)</td>
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<tr>
<td>MUS 162</td>
<td>Aural Comprehension</td>
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<tr>
<td>MUS 163</td>
<td>Aural Comprehension</td>
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<tr>
<td>MUS 199</td>
<td>Applied Voice (Prereq: Audition - 4 semesters 2 hours ea.)</td>
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<tr>
<td>MUS 220</td>
<td>Keyboard Musicianship</td>
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<tr>
<td>MUS 395</td>
<td>Performance Development and Technique</td>
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**REQUIRED COURSES IN THEATRE — 30 hrs.**

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<tbody>
<tr>
<td>THEA 141</td>
<td>Improvisation</td>
</tr>
<tr>
<td>THEA 142</td>
<td>Acting I</td>
</tr>
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<td>THEA 230</td>
<td>Stage Make-up</td>
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<td>THEA 241</td>
<td>Voice and Movement I</td>
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<td>THEA 242</td>
<td>Voice and Movement II</td>
</tr>
<tr>
<td>THEA 272</td>
<td>Music Theatre History Script Analysis I</td>
</tr>
<tr>
<td>THEA 341</td>
<td>Acting II</td>
</tr>
<tr>
<td>THEA 342</td>
<td>Acting III</td>
</tr>
<tr>
<td>THEA 351</td>
<td>Directing I (Prereq: THEA 120, 140, Junior standing)</td>
</tr>
<tr>
<td>THEA 372</td>
<td>Music Theatre History Script Analysis II</td>
</tr>
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</table>

**ELECTIVES—10 hrs.**

Seven hours from courses in the Department of Dance, the School of Music and the Department of Theatre, with the consent of the Music Theatre Performer curriculum advisor.

**ADDITIONAL REQUIREMENTS**

A student must complete all the General Education Distribution Program requirements as outlined in this catalog. Within these specifications, it is recommended that the student take two semesters of the following foreign languages: FREN 100, 101, and GER 100, 101. Music Theatre students must also earn two non-performance credits in Theatre Practicum prior to the winter semester of their sophomore year.

Admission to the program is by prepared audition before the Dance, Music, and Theatre faculty. Additional information is available by contacting the curriculum advisor. At the end of the sophomore year, each student must pass a performance jury in order to continue in the program; unanimous approval by each performance area is required.

All music theatre majors must audition for staff-directed musical comedy, opera, or operetta each year.
The philosophy underlying the Department of Art's courses and programs is to establish an awareness and understanding of the visual arts to gain a liberal arts education, and likewise, that a liberal education is a necessary part of a professional artist's training. To that end, programs in the visual arts seek to meet the objectives of three different types of students:

1. Those who have an interest in simply taking courses in the field for personal enjoyment and growth.
2. Those with professional ambitions in the various areas of practice and teaching.
3. The liberal arts oriented person who seeks a major in the general field of the visual arts.

The various programs offered by the Department of Art are designed to promote the education of good artists and artists-teachers and to increase artistic awareness among students in other areas. Extracurricular activities include exhibitions, lectures by visiting artists, a student-operated gallery, and studios for advanced BFA candidates.

In the belief that arts understanding, involvement, and appreciation are an important part of a liberal education, the Department of Art offers many opportunities for the non-arts major to participate in applied, theoretical, and appreciation curricular and co-curricular activities, such as general art, art history, and studio art courses. Western Michigan University is an accredited member of the National Association of Schools of Art and Design and subscribes to the recommendations of this organization.

Programs

The Department of Art offers the following degree programs: Bachelor of Fine Arts with a major in Art and an emphasis in either Ceramics, Jewelry/Metalsmithing, Painting/Watercolor, Photography, Printmaking or Sculpture, Bachelor of Fine Arts with a major in Graphic Design, Bachelor of Arts with a major in Art, Bachelor of Arts with a major in Art Teaching. All programs are within the Art curriculum, which is composed of the General Education requirements of the University and the Art major requirements of the B.A. or B.F.A. degrees.

For specific information see the description of each program.

Transfer Credit

Transfer credit may be used to fulfill no more than half the number of credit hours required for the students Art major or minor. Art credits earned at a college accredited by the National Association of Schools of Art and Design, or a regionally recognized accrediting agency, in which a grade of "C" or better is earned, will transfer in most cases. Many beginning level art courses will transfer with direct WMU course equivalents. Some beginning and most intermediate level courses will receive general "art credit". If you receive general art credit for any course you feel would fulfill a required art course, or for any course needed to fulfill a prerequisite for a course you wish to take, you must present a portfolio for consideration. Based on the results of this portfolio review, the course in question will either receive a direct course equivalent number or remain general art credit. General art credits can be used to fulfill the art elective category or be used as electives wherever needed for graduation (122).

If you do not wish to show a portfolio for any courses in which you have received general "art credit", you do not have to do so. These credits will automatically be used as electives wherever needed.

For portfolio guidelines please write to: Screening Committee, Department of Art, Western Michigan University, Kalamazoo, MI 49008, or call (616) 387-2440.

Advising

All art majors and minors are required to see an art advisor as soon as they are on campus and at least once each Fall and Winter semester thereafter. To make an appointment please call (616) 387-2440.

Miscellaneous

Baccalaureate Writing Requirement

Students who have chosen the Art major will satisfy the Baccalaureate Writing Requirement by successfully completing Art 325 Writing About Art.

Computer Usage

The Department of Art utilizes computers in virtually all aspects of the visual arts. Our computer lab, which is open to all Art majors and minors, is equipped with Mac II's, laser printers, video hookup, modems, traditional software, and visual art software. Computer usage and design plays a vital role in our Graphic Design Program, and our Design Center is also fully equipped with Mac II's for the use of the Graphic Design students exclusively.

Exhibition Requirement

Each Bachelor of Fine Arts candidate must present a graduating exhibition as stated in Art 490-497 in the B.F.A. degree requirements. The B.F.A. candidate is to arrange such an exhibition in consultation with their major advisor. 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.

Studies

Advanced undergraduates are occasionally given studios. All other students may work in the regular classroom studios at night and on Saturdays. The department and its instructors cannot be responsible for student work left in
Programs

Bachelor of Fine Arts Degree

ART MAJOR

85 credit hours

This degree is designed for qualified students who intend to become professional artists or pursue graduate study in art. Art majors must make specific application to a departmental committee for admission to B.F.A. candidacy in a specific area of emphasis after completing 30 hours in art, one semester residency in the department, and at or above the 300 level in the area they are applying to.

Areas of emphasis: ceramics, jewelry and metalsmithing, painting/watercolor, photography, printmaking, and sculpture. Art 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** .......................... 5
Select any five (5) courses from the following:

**FOUNDATIONS COURSES** .......................... 9
ART 101 Foundation Drawing 3
ART 102 Foundation 2D Design 3

**2D COURSES** .......................... 27
ART 210 Life Drawing 3
ART 240 Painting I 3
ART 241 Intaglio Relief 3
ART 242 Watercolor Painting 3
ART 243 Lithography 3
ART 245 Graphic Design (Non BFA) 3
ART 246 Photography 3

**3D COURSES** .......................... 15
ART 230 Ceramics 3
ART 231 Sculpture 3
ART 238 Jewelry and Metalsmithing 3

**ART HISTORY REQUIREMENT** .......................... 12
ART 220 History of Art 3
ART 221 History of Art 3
Two Art History courses 6

**WRITING REQUIREMENT** .......................... 3
ART 325 Writing About Art 3

**STUDIO Emphasis** .......................... 21
Areas include: Ceramics, Jewelry/Metalsmithing, Painting/Watercolor, Photography, Printmaking, and Sculpture.

**ART ELECTIVES** .......................... 31
Electives and required art courses must be determined in consultation with a faculty advisor within the studio area of emphasis.

**GRADUATION PRESENTATION** .......................... 3
Select one from:
ART 480 Graduation Presentation and Seminar—Painting/Watercolor 3
ART 490 Graduation Presentation and Seminar—Sculpture 3
ART 491 Graduation Presentation and Seminar—Photography 3
ART 493 Graduation Presentation and Seminar—Printmaking 3
ART 494 Graduation Presentation and Seminar—Sculpture 3
ART 495 Graduation Presentation and Seminar—Jewelry/Metalsmithing 3
ART 496 Graduation Presentation and Seminar—Ceramics 3

**GRAPHIC DESIGN MAJOR**

85 credit hours

This degree is designed for qualified students who intend to become professional graphic designers or pursue graduate study in graphic design. Art majors must make specific application for B.F.A. candidacy with a major in graphic design to a departmental committee of graphic design faculty. Courses in the program are sequential beginning in the fall semester of each year and will take a minimum of three years to complete after admission.

Application requires a portfolio review, personal interview, submission of an unofficial transcript, and completion of application forms and recommendations. Reviews are held only in the winter semester for admission into the fall semester. Students must have completed or be enrolled in 15 hours of the basic required courses and 3 hours of art history.

Student’s portfolios are reviewed for understanding of perspective, composition, and color acquired in drawing courses, two-dimensional design courses, and courses dealing with color theory. Additional abilities demonstrated with work in beginning courses in life drawing, painting, photography, printmaking, jewelry and metalsmithing, ceramics, and sculpture will also be evaluated. Academic abilities reflected in the grade point average and an ability to articulate the fundamentals acquired at the basic level of study are also considered as part of the interview process.

The requirements of the B.F.A. curriculum of the Department of Art and the College of Fine Arts must be satisfied. Eighty-five hours in art satisfy the major requirements of this curriculum and are distributed as follows:

**BASIC COURSES** .......................... 15
ART 101 Foundation Drawing 3
ART 210 Life Drawing 3
ART 240 Painting I 3
ART 231 Sculpture 3
ART 238 Jewelry and Metalsmithing 3
ART 243 Lithography 3
ART 245 Graphic Design (Non BFA) 3
ART 246 Photography 3

**SELECT TWO (2) COURSES FROM:**
ART 101 Foundation Drawing 3
ART 210 Life Drawing 3
ART 230 Ceramics 3
ART 231 Sculpture 3
ART 236 Jewelry and Metalsmithing 3
ART 240 Painting I 3
ART 241 Intaglio Relief 3
ART 242 Watercolor Painting 3
ART 243 Lithography 3
ART 245 Graphic Design (Non BFA) 3

**GRAPHIC DESIGN COURSES** .......................... 43
ART 250 Color for Graphic Design 3
ART 251 Typography I 3
ART 256 Graphic Design I: Visual Aesthetics 3
ART 261 Graphic Design II: Graphic Form 3
ART 350 Typography II 3
ART 351 Typography III 3
ART 360 Graphic Design III: Visual Systems 3
ART 361 Graphic Design IV: Design Applications 3
ART 371 Special Topics 3
ART 460 Graphic Design V: Advanced Problems 3

**ART MAJOR**

Bachelor of Arts

54 credit hours

This program is designed for the liberal arts-oriented students who want to major in the visual arts. It provides maximum flexibility in terms of electives in art and non-art courses. Professionally oriented art students may start in this program and apply for admission to the B.F.A. program when eligible.

The requirements of the art curriculum of the College of Fine Arts have to be satisfied. Fifty-four hours in art satisfy both the major and the minor requirements of this curriculum and are distributed as follows:

15 hours in the basic studies program; choose any five (5) courses: (101, 102, 103, 210, 240, 241, 242, 243, 244, 245, 248, 230, 231, 238)
12 hours in Art History, (220 and 221; Art history electives)
3 hours in Writing Requirement (325)
24 hours in Art electives (Art major studio credits)

Art Teaching Major

Bachelor of Arts

60 credit hours

This program is intended to develop artist-teachers certified to teach art at the elementary and secondary levels and 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 Relief 3

**ART HISTORY REQUIREMENT** .......................... 9
ART 220 History of Art 3
ART 221 History of Art 3

**ART EDUCATION REQUIREMENT** .......................... 12
ART 252 Art Education Workshop 3
ART 352 Preparation for Art Teaching (Elementary) 3
ART 452 Preparation for Art Teaching (Secondary) 3
ART 552 Preparation for Art Teaching 3
**ART ELECTIVES................................. 15**
Electives must be determined in consultation with an art advisor.

Art teaching courses (252, 352, 452, 552) must be taken in sequence and may not be taken concurrently. Therefore, Art Teaching majors must enroll in Art 252 in the fall semester of the sophomore year and continue taking one art education course, in sequence, in each subsequent 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 and satisfy the minor requirements of the liberal arts, arts and sciences, or education curricula. Art minors must register with the art advisor before completing any art courses. A minor slip is required.

12 hours in the basic studies program; choose four (4) courses from ART 101, 102, 103, 210, 240, 241, 242, 243, 245, 246, 230, 231, 238

12 hours in art electives. Art major/minor studio including ART 252 and 352 for education majors.

**Art History Minor**
18 credit hours

This program is designed for liberal arts students interested in art history and satisfies the minor requirements of the liberal arts and arts and sciences curricula. A minor slip is required. The 18 credit hours are distributed as follows:

6 hours of Art History 220 and 221
12 hours of electives chosen from the remaining Art History courses in the department, in consultation with the Art advisor.

**Art Courses for Non-Art Majors or Minors**
Any 100 level course may be taken by non-art students. Those seeking a broadly inclusive studio experience in art are advised to take ART 100 and/or 140. Further recommended courses in specific media for non-art majors include Drawing, Acrylic Painting, Printmaking, Sculpture, Ceramics, Jewelry, and Watercolor. ART 120, ART 130, ART 140, ART 148, ART 200, and ART 221 are open with no prerequisites to non-art majors and can satisfy the humanities requirements of General Education.

**Art Courses (ART)**
A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

**ART 101 Foundation Drawing**
3 hrs.
The visual elements and principles of organization in relationship to perceiving both flat and illusionary space.

**ART 102 Foundation 2D Design**
3 hrs.
The study of the elements of the visual language and principles of visual organization in black and white and color.

**ART 103 Theory of Art**
3 hrs.
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 hrs.
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 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 man’s quest for creative expressions.

**ART 130 Studio Experience—(3-D)**
3 hrs.
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. This course meets Area I, Fine Arts, General Education requirement.

**ART 140 Studio Experience—(2-D)**
3 hrs.
A course designed for the non-art student as an enriching experience in two-dimensional media. To include painting, drawing and other graphic media. May not be elected by majors or minors in art or art education.

**ART 148 Direct Encounter with the Arts ($35 fee)**
4 hrs.
A course that uses a direct approach to introduce students to their cultural world by guiding them through first-hand experiences in a number of areas: cinema, photography, theatre, sculpture, music, poetry, dance and architecture. Classroom discussions are held following the student’s participation in the various art events scheduled each semester, with students expected to write journals and response papers about the major events of the course. There will be a course charge in lieu of textbooks. Cross listed with DANCE 148, MUS 148, THEA 148. May be taken only once from College of Fine Arts Departments.

**ART 150 Art Education Workshop**
3 hrs.
A studio course structured to provide the classroom teacher with the opportunity to explore, experiment and develop concepts related to art, creativity, and perception. Such concepts are explored and developed through the use of a variety of art materials and techniques. Prerequisite: For the Elementary Education Minor only. May not be taken by Integrated Creative Arts minors, nor Art majors or minors.

**ART 200 The Creative Process Through Art**
3 hrs.
Individual involvement in the creative process related to human growth and development by means of exploration with many art media. For the Integrated Creative Arts Minor only. This course waives the ART 150 requirement for the Elementary Education majors.

**ART 201 Non Art Major: Drawing**
3 hrs.
This course is a non-professional enrichment experience in basic drawing. The course objectives are 1) to learn basic drawing techniques and their relationships to various media such as graphite, charcoal, and conte crayon, 2) to 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 materials and 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 prehistoric ages to the Renaissance.
ART 221 History of Art
3 hrs.
An historical survey of art from the Renaissance through the contemporary period.

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 sculpture forms will be presented. Prerequisite: ART or ATE major and minors only.

ART 238 Jewelry and Metalsmithing
3 hrs.
A survey of jewelry projects with instruction in design and metal craft. Copper, brass, and 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 painting to assist the student in realizing visual observations, compositional sensibilities, and personal expression through basic painting techniques. Seeing color, mixing color, and making specific color decisions are the vehicles for study. 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 painting 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, confidence-building, introduction to Lithography through Aluminum Plate technique. 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. Instruction and 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, black and white films, processing and printing. Emphasis is placed upon percceptive imagery and development of a technical proficiency. Prerequisite: ART or ATE major and minors only.

ART 250 Color for Graphic Design
3 hrs. Fall
Studies in color theory emphasizing issues and problem solving related to graphic design. This includes investigations in additive and subtractive color theories as applied to reflective and transmitted media as well as color systems used in graphic reproduction. Prerequisites: 15 hours basic courses and ART 220, acceptance into BFA in graphic design by portfolio review.

ART 251 Typography I
3 hrs. Winter
Studies in the design of letterforms and typographic structure. Emphasis is on developing an understanding of typographic form through drawing and compositional exercises and discussion of perceptual, historical, and technological influences. Computer technology will be investigated. Prerequisites: ART 250, ART 260.

ART 252 Art Education Workshop (Majors)
3 hrs.
A studio course involving projects, media and materials, handled on an aesthetic level but appropriate for the creative and maturational ability of the K-12 art student. Prerequisite: ART 101, ART 102, ART 103, ART 231 and ART 240 or 242, or ART 231 and ART 240 or 242 concurrently.

ART 256
3 hrs.
Introduction to computer graphics as an image-making process and as manipulation of scanned (found) images. After a basic orientation on computer processing several programs will be used for the development of images as formal art, illustration and as visual communication. Prerequisite: ART or ATE major only.

ART 260 Graphic Design I: Visual Aesthetics
3 hrs. Fall
Theoretical visual studies in graphic design involving point, line and shape, dealing with formal values and composition. Emphasis on problem solving, skill development, perceptual acuity and an understanding of visual aesthetics. Prerequisites: 15 hours basic courses and ART 220, acceptance into BFA with a major in graphic design by portfolio review.

ART 261 Graphic Design II: Graphic Form
3 hrs. Winter
A continuation of Graphic Design I. Studies in space, form and composition involving an integration and application of formal values and problem solving. Visual systems of pictorial and symbolic form are explored through organic and geometric drawing exercises. Computer and printing will be investigated. Prerequisites: ART 250, ART 260.

ART 305 Inter-Related Arts Process: Art, Dance, and Music
3 hrs.
Art, dance, and music will be dealt with as the expressive means at the core of the creative and educative process. The student will be exposed to the craftsmanship of each art form, the exploration 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 ½ of the class meetings. Prerequisite: ART 210.

ART 325 Writing About Art
3 hrs.
Development of the ability to think, verbalize, and write about art and design. Instruction will address technical issues of writing (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. Prerequisite: Junior or senior level Art major only.

ART 330 Ceramics
3 hrs.
Continuation of ART 230 with opportunity for concentration in the medium. Some experiment in glazing. Prerequisite: ART 230.

ART 331 Sculpture
3 hrs.
Development of individual sculptural direction: all media. Advanced welding, molding and casting techniques are among the media explored. Prerequisite: ART 231 or consent of department.

ART 338 Jewelry and Metalsmithing
3 hrs.
Intermediate level metalsmithing work. Continued skill development in jewelry design, stone setting, and solder fabrication. Basic lapidary 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 synthesis of media and/or techniques) appropriate to individual aesthetic intentions. Prerequisite: ART 241.

ART 342 Watercolor
3 hrs.
Advanced problems in watercolor techniques to include composition. Prerequisite: ART 242.

ART 343 Lithography
3 hrs.
An intermediate investigation of Lithography based on basic skills with the introduction of color printing and other advanced techniques. The artist-student should begin to discover methods and techniques adaptable and appropriate to his/her aesthetic intent. Prerequisite: ART 243.

ART 344 Hand Papermaking
3 hrs.
The techniques of producing paper to be used as support for various medias. Prerequisite ART 244.
ART 345 Graphic Design-Non BFA in Graphic Design
3 hrs.
The study and practice of graphic design for two-dimensional media. Emphasis is placed on the conceptual development of geometric, figurative, and decorative imagery for posters, covers, publicity, magazine and newspaper advertising. Includes thematic development, graphic planning, comprehensive and finished art production. Prerequisite: ART 245.

ART 346 Screenprint II
3 hrs.
An intermediate course continuing the investigation of basic and advanced screenprint stencil techniques with the introduction of photo-stencil methods. The artist/students should begin to discover and apply method of technique appropriate to their aesthetic intent. Prerequisite: ART 246.

ART 348 Photography
3 hrs.
Introduction to the view camera, color processing/printing, and various studio lighting techniques involved in product photography. Emphasis is placed upon exploring the potential of color photography and the development of individual imagery. Prerequisite: ART 248 and ownership of a 35mm or 2 1/4 X 2 1/4 camera.

ART 350 Typography II
3 hrs. Fall
Exploring compositional relationships involving the single word, line, column, page arrangement and structural systems. Semantic and syntactic issues will be investigated in projects and exercises. Computer technology will be investigated. Prerequisites: ART 261, ART 251.

ART 351 Typography III
3 hrs. Winter
Dealing with systems, sequence and series as complex typographic problems. Application of theoretical, pragmatic and technical issues to problems common in publication and institutional communication. Computer technology will be investigated. Prerequisites: ART 350, ART 360.

ART 352 Preparation for Art Teaching (Elementary)
3 hrs.
A teaching laboratory course designed to familiarize the elementary art teacher with teaching philosophies, methods and creative teaching procedures using varied media and materials. Emphasis is placed upon qualitative art programming in the elementary school. Prerequisite: ART 252.

ART 355 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 grids and other systems in graphic design and their application to communication problems. Functions as a transitional phase from theoretical issues to applied problems. Computer technology will be investigated. Prerequisites: ART 251, ART 261.

ART 361 Graphic Design IV: Design Applications
3 hrs. Winter
Continuation of Graphic Design III as a transitional phase from the theoretical to the applied design problem. The evolution of design process is explored and developed. Involves the visual study of grids and systems and their application. Computer technology will be investigated. Prerequisites: ART 350, ART 360.

ART 371 Special Topics
3 hrs.
Topics offered could be any of the following: package design, exhibit design, sign/symbol design, interactive electronic media, photography, type as image, applied color, visual translation, and any additional topic of interest. Prerequisites: ART 350, ART 360.

ART 452 Preparation for Art Teaching (Secondary)
3 hrs.
A teaching laboratory course specifically designed to familiarize the middle and high school art teacher with philosophies, methods and creative teaching procedures using varied media and materials. Emphasis is placed upon qualitative art programming in the secondary school. Prerequisite: ART 352 and art major status.

ART 460 Graphic Design V: Advanced Problems
3 hrs. Fall
Applied design problems of an advanced complex nature emphasizing design methodology and research. Input from the community and outside sources will be a focus for the problem solving process. The problems will deal with a series of related design problems and evolve 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 560 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 490 Graduation Presentation and Seminar—Painting/Watercolor
3 hrs.
Investigation and evaluation of contemporary topics and trends in painting/watercolor. Students will be exposed to how painters express their ideas through 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/watercolor 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, seminars encouraging students to select and develop their own research topic. Preparation and presentation of graduating exhibition in graphic design to include slide documentation and oral examination or written thesis. Evaluation by a departmental reviewing committee. Prerequisites: Senior standing and BFA candidacy.

ART 493 Graduation Presentation and Seminar—Photography
3 hrs.
Investigation and evaluation of contemporary topics and trends in photography. Students will be exposed to how photographers express their ideas through visiting artist programs, exhibitions, workshops and seminars encouraging students to select and develop their own research topic. Preparation and presentation of graduating exhibition in photography to include slide documentation and oral examination or written thesis. Evaluation by a departmental reviewing committee. Prerequisites: Senior standing and BFA candidacy.

ART 494 Graduation Presentation and Seminar—Printmaking
3 hrs.
Investigation and evaluation of contemporary topics and trends in printmaking. Students will be exposed to how printmakers express their ideas through visiting artist programs, exhibitions, workshops and seminars encouraging students to select and develop their own research topic. Preparation and presentation of graduating exhibition in printmaking to include slide documentation and oral examination or written thesis. Evaluation by a departmental reviewing committee. Prerequisites: Senior standing and BFA candidacy.

ART 495 Graduation Presentation and Seminar—Jewelry/Metalsmithing
3 hrs.
Investigation and evaluation of contemporary topics and trends in jewelry/metalsmithing. Students will be exposed to how jewelers express their ideas through visiting artist programs, exhibitions, workshops and seminars encouraging students to select and develop their own research topic. Preparation and presentation of graduating exhibition in jewelry/metalsmithing to include slide documentation and oral examination or written thesis. Evaluation by a departmental reviewing committee. Prerequisites: Senior standing and BFA candidacy.

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 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 consultation with the instructor. Course title varies from term to term. Prerequisites: ART 220, ART 221 for majors. None for other students. Repeatable for credit under a different title.

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, metals, or textiles. Permission of instructor is required. Repeatable for credit.

ART 538 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 graphic 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 problems in issues on the social scene 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 581 History of Ancient Art 3 hrs. Selected topics from the art and architecture of ancient Egypt, the ancient Near East, the Aegean protoclassical, classical and Hellenistic Greece, Etruria, and Rome to the Early Christian period. Prerequisite: ART 220.

ART 570 Intern I 3 hrs. Fall, Winter Design practicum in Design Center. Involves an introduction to problem solving for real 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 real 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 of an printing industry. Credits are variable due to the fact that larger more intense projects are sometimes given an 6th credit. credits are determined by the depth of the project. Prerequisites: ART 460, ART 580.

ART 583 History of Medieval Art 3 hrs. Discussion of art and architecture from the decline of the Roman Empire through the Gothic Period (Third to Thirteenth Centuries). Prerequisite: ART 220.

ART 585 History of Renaissance Art 3 hrs. The development of art through the early Renaissance to the late Renaissance and Manerism. Some of the major artists discussed are: Giotto, Donatello, Da Vinci, Michelangelo, Titian, Van Eyck, Bruegel and Durer. Prerequisite: ART 221.

ART 586 History of Baroque Art 3 hrs. Art of the late Sixteenth, Seventeenth, and early Eighteenth Centuries. Major artists and architects discussed are Caravaggio, the Carracci, Rembrandt, Rubens, Poussin, Velasquez, Bernini, Borromini, and Neumann. Prerequisite: ART 221.

ART 587 History of American Art Colonial to 1900 3 hrs. Art in the United States from the Colonial Period to 1900. Emphasized are Federal and Georgian Eighteenth Century styles, Nineteenth Century Realism, Romanticism and Naturalism genesis and development of distinctly "American" consciousness and styles. Prerequisite: ART 221.

ART 588 History of Nineteenth Century European Art 3 hrs. Major developments, such as Neo-Classicism, Romanticism, Realism, Impressionism, and Post-Impressionism are discussed. Key figures whose works lie at the roots of modern art are considered in relationship to their times. Prerequisite: ART 221.

ART 589 History of European Art 1900-1945 3 hrs. Emphasis is placed upon the roots of contemporary trends and the contributions of individuals to new modes of presentation. Major developments include Fauvism, Cubism, Expressionism, and Surrealism are discussed. Prerequisite: ART 221.

ART 590 History of Twentieth Century Art 1945 to Present 3-6 hrs. Major trends in art since World War II are discussed. Included are Abstract Expressionism, Pop and American Pop, Art Nouveau, Art Deco, and the Bauhaus. Art forms include architecture, interior design, graphics, illustration and crafts. Prerequisite: ART 221.

ART 591 History of Prints 3 hrs. Major developments in printmaking, including origins of woodcut and engraving, Renaissance and Baroque master etchers and engravers (Durer, Rembrandt). Lithography in the Nineteenth Century (Delacroix, Daumier, Toulouse-Lautrec). Twentieth Century printmaking.

ART 592 Twentieth Century Design History 3 hrs. Major trends in design in the past 100 years, beginning with the arts and crafts movement, through post modernism. Major developments include Art Nouveau, Art Deco and the Bauhaus. Art forms include architecture, interior design, graphics, illustration and crafts. Prerequisite: ART 221.

ART 593 History of American Art: 1900-1945 3 hrs. Art of the United States and Canada from 1900 to present. Realization of European Modernism: Nativist and American Modernist traditions of the '20's, '30's, and '40's. Prerequisite: ART 221.

ART 597 History of Modern Architecture 3 hrs. Major developments in architecture since c. 1750 with emphasis on late nineteenth century and twentieth century developments in domestic and commercial architecture and city planning in the West and in Asia. Especially consideration given the works and influences of Wright, LeCorbusier, and Mies van der Rohe.
DANCE

Trudy Cobb, Chair
Jane Baas
Wendy Cornish
Sharon Garber
Nina Nemeroff
Lindsey Thomas

The Department of Dance seeks to fulfill its responsibility to further the development of the art in Michigan through: creating and publicly producing dance which reflects the highest aesthetic standards; sponsoring events which enrich the dance life of the community; and providing an outreach of dance experiences which have artistic and educational value. For the general student, the department provides the opportunity to experience the joy of participation and the value of viewing dance as an art form. Through teaching and co-curricular activities, the faculty endeavors to produce versatile graduates who can integrate theory and practice with discerning sensibilities, who have a firm foundation upon which to carve their own careers, who have the conviction to hold firm in their aesthetic goals and who have the satisfaction of survival in an ever-changing field. The department faculty is committed to the ongoing renewal of teaching resources and skills while contributing to the field through the practice of the art, and service to professional organizations. Western Michigan University is an accredited institutional member of the National Association of Schools of Dance.

Programs

The Department of Dance offers three programs in dance: Bachelor of Fine Arts in Dance, Bachelor of Arts in Dance, and a Dance Minor. The Bachelor of Fine Arts degree program emphasizes the aesthetic, choreographic and performance training of the student. Graduates of this pre-professional program will have a foundation in dance skills and knowledge required for employment at a professional level. The Bachelor of Arts degree program offers the student the opportunity to explore the diversity of the dance profession within a strong liberal arts program which emphasizes other fine and performing arts. Students may elect to focus their liberal arts studies by selecting an approved minor or second major. Students who wish to continue their dance studies as an avocation, the Dance Minor is designed for students who wish to continue their dance studies as an avocation. There is currently a waiting list for entrance into the Dance Minor program. For additional information, please refer to specific Program Requirements.

COURSES FOR GENERAL STUDENTS

Introductory dance courses are offered for general students. Dance technique courses open to general students without audition include DANC 101, 102, 103, 104, and 105; DANC 102 is required for each student enrolled in DANC 101, 103, and 104 in order to provide a more skilled accompanist. A $10 fee is required for each student enrolled in DANC 102 to provide for recorded music. DANC 145, a dance survey course, may be elected by students to satisfy Area I – Fine Arts of the University General Education Program beginning in Fall 1996. Students entering the University prior to 1996 may use one credit for fulfillment of the University Physical Education Requirement.

Admission

Admission to Western Michigan University is granted only by the Office of Admissions and Orientation for undergraduate students. Application forms may be obtained by writing to the Office of Admissions and Orientation. Enrollment in all dance programs at WMU is contingent upon admission to the University and approval of the Department of Dance. Department admission is based on an audition by: taking a technique class in ballet, jazz and modern; placing in at least technique level I in two dance idioms; and submitting a completed department application form. Auditions are normally conducted in November, February, and April. Auditions are normally conducted in November, February, and April. It is strongly recommended that prospective students attend either the fall or winter audition. Students will not be allowed to enroll in dance technique courses at the dance major level until they have successfully auditioned.

Students interested in pursuing the Bachelor of Fine Arts program may petition for entrance after completion of: at least one semester each of ballet, jazz and modern major technique courses, DANC 100 Choreography I, DANC 181 Improvisation and at least one dance major theory course. The status of transfer students will be evaluated on an individual basis. The results of all of the above are communicated in writing to the student within three weeks following the audition.

Audition schedules and information, as well as petition deadlines, are available from the Department of Dance upon request. The Department welcomes the opportunity to confer with prospective students, parents and counselors regarding educational goals and plans.

Transfer Credit

Dance credit from other institutions transfers as a direct equivalent to a WMU course, as an unspecified dance credit, or as credit by department recommendation only. Transfer students should schedule an appointment with the dance academic advisor immediately after admission to the University to evaluate dance credits taken at other institutions.

Advising

Dorothy J. Dalton, Center Room 3117, (616) 387-5840

Upon admission to the University and acceptance into the dance program, each major and minor student should complete a Declaration Form with the dance academic advisor. It is the responsibility of the student to make an appointment with the advisor each semester in order to prepare for the next semester’s registration. Each student should meet with the advisor during his/her junior year to secure a Graduation Audit Statement before registration for the next semester.

The dance academic advisor is also 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 qualifications will be referred to offices, on- and off-campus, qualified to assist.

Graduation requirements must be completed as stipulated in the Undergraduate Catalog in effect at the time the student is admitted. Requirements cannot be added during the student’s enrollment, but the student may take advantage of course and curriculum alterations that 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 advice and assistance from 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 an understanding of the classical ballet vocabulary with attention to stylistic variations, and piano accompaniment is provided. Students are expected to participate in a variety of dance idioms such as Cunningham, Limon, and Hawkins as well as Bartenieff 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 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 imply automatic progression to the next level. Faculty determine a student’s ability to move to the next level just prior to Phase I registration for the coming semester.

CLASS FEES FOR MAJOR TECHNIQUE COURSES

A $31 fee is required from each student enrolled in DANC 110, 120, 130, 210, 220, 230, 310, 320, and 330. 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, performances, scholarship, and 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. For specific information, 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 of 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
and in Area I of the General Education Distribution Program.

**PERFORMANCE AND CHOREOGRAPHIC OPPORTUNITIES**

Students have a variety of opportunities to perform in concerts, informal showings, graduating 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.

**Program Requirements**

**Bachelor of Fine Arts in Dance**

80 hours

Students may petition for entrance into the BFA program after completion of:

1. at least one semester each of ballet, jazz, and modern major technique courses
2. DANC 145 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.

Continuation in the BFA program will be determined by the dance faculty during the second semester of the student's enrollment. In order to continue in the BFA program, the student must: demonstrate potential to succeed as a professional dancer and/or choreographer, have at least B-level skills in technique and performance, and have demonstrated professional commitment in dance coursework and dance-related activities. Any student discontinued from the program may reapply for the BFA after a minimum of one additional semester at WMU.

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. Students who have chosen the Dance major will satisfy the Baccalaureate-level Writing Requirement by successfully completing DANC 345 Twentieth Century American Dance. Since the BFA in Dance is a credit-hour intensive curriculum, the BFA student must enroll in DANC 145, Experiencing Dance in both the dance major and in Area I of the General Education Distribution Program.

**REQUIRED COURSES IN TECHNIQUE AND PERFORMANCE—28 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. DANC 425 may be used to complete the Technique/Performance requirement.

**REQUIRED COURSES IN CHOREOGRAPHY—10 total hours**

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Course Title</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>DANC 180</td>
<td>Choreography I</td>
<td>(Prereq: consent of advisor)</td>
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<tr>
<td>DANC 181</td>
<td>Choreography I</td>
<td></td>
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<tr>
<td>DANC 280</td>
<td>Choreography II</td>
<td>(Prereq: 180, 181)</td>
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<tr>
<td>DANC 380</td>
<td>Choreography III</td>
<td>(Prereq: 280)</td>
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<tr>
<td>DANC 480</td>
<td>Graduating Presentation</td>
<td>(Prereq: 380)</td>
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</tbody>
</table>

**REQUIRED COURSES IN THEORY—29 total hours**

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<thead>
<tr>
<th>Course ID</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>DANC 145</td>
<td>Experiencing Dance</td>
<td>(also counts in General Education Area I)</td>
</tr>
<tr>
<td>DANC 245</td>
<td>Ballet History</td>
<td>(Prereq: 145)</td>
</tr>
<tr>
<td>DANC 345</td>
<td>Twentieth Century American Dance</td>
<td>(Dance majors use this course to meet the University Baccalaureate-level Writing Requirement)</td>
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**MUSIC—4 total hours**

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<tr>
<th>Course ID</th>
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<tbody>
<tr>
<td>DANC 185</td>
<td>Music Fundamentals for Dancers</td>
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<tr>
<td>DANC 265</td>
<td>Music Style and Form for Dancers</td>
<td>(Prereq: 185)</td>
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**PRODUCTION AND MANAGEMENT—4 total hours**

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<tr>
<th>Course ID</th>
<th>Course Title</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>DANC 395</td>
<td>Lighting and Staging for Dance</td>
<td>(Prereq: Approved application required)</td>
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<tr>
<td>DANC 489</td>
<td>Dance Management</td>
<td>(Prereq: Approved application required)</td>
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**DANCE SCIENCE/ANALYSIS—8 total hours**

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<tr>
<th>Course ID</th>
<th>Course Title</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>DANC 195</td>
<td>Introduction to Bartenieff Fundamentals</td>
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<tr>
<td>DANC 196</td>
<td>Conditioning for Dancers</td>
<td></td>
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<tr>
<td>DANC 295</td>
<td>Introduction to Dance Science and Kinesiology</td>
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<tr>
<td>DANC 296</td>
<td>Laban Movement Analysis</td>
<td>(Prereq: Sophomore standing)</td>
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**PEDAGOGY—2 total hours**

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<tr>
<th>Course ID</th>
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<th>Prerequisites</th>
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<tbody>
<tr>
<td>DANC 440</td>
<td>Teaching Dance Technique</td>
<td>(Prereq: Consent of advisor)</td>
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</table>

**CAPSTONE EXPERIENCE—2 total hours**

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<tr>
<th>Course ID</th>
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<th>Prerequisites</th>
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<tbody>
<tr>
<td>DANC 400</td>
<td>Practicum (Prereq: Approved application required)</td>
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<tr>
<td>DANC 445</td>
<td>Senior Seminar</td>
<td>(Prereq: Senior standing)</td>
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</table>

**BACHELOR OF ARTS IN DANCE—53 total 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. 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

All students must complete at least one major technique course (DANC 110, 120, 210, 230, 310, 330) each semester. During his/her program, the student must select from at least one course in each of the following areas: ballet technique, jazz technique, modern technique, and performance (DANC 460, 465). The student must complete at least one semester of one of the following. DANC 310, 320, 330. DANC 425 may be used to complete the Technique/Performance requirement.

## REQUIRED COURSES IN DANCE STUDIES (Choreography and Theory)—35 total hours

### CHOREOGRAPHY—5 hours

<table>
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<tr>
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<tbody>
<tr>
<td>DANC 180</td>
<td>Choreography I</td>
<td>(Prereq: consent of advisor)</td>
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<tr>
<td>DANC 181</td>
<td>Dance Improvisation</td>
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<tr>
<td>DANC 280</td>
<td>Choreography II</td>
<td>(Prereq: 180, 181)</td>
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### HISTORY—9 hours

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<td>DANC 145</td>
<td>Experiencing Dance</td>
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<td>DANC 245</td>
<td>Ballet History</td>
<td>(Prereq: 145)</td>
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### MUSIC—4 hours

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<tbody>
<tr>
<td>DANC 185</td>
<td>Music Fundamentals for Dancers</td>
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<tr>
<td>DANC 285</td>
<td>Music Style and Form for Dancers</td>
<td>(Prereq: 185)</td>
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### PRODUCTION—9 hours

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<tr>
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<th>Course Title</th>
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<tr>
<td>DANC 389</td>
<td>Lighting and Staging for Dance</td>
<td>(Prereq: Approved application required)</td>
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### DANCE SCIENCE/ANALYSIS—6 hours

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<td>Introduction to Dance Science and Kinesiology</td>
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### PEDAGOGY—2 hours

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<tr>
<td>DANC 440</td>
<td>Teaching Dance Technique (Prereq: Consent of Advisor)</td>
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### THEORY ELECTIVES—3-5 hours selected from:

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>DANC 296</td>
<td>Laban Movement Analysis</td>
<td>(Prereq: Sophomore standing)</td>
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<tr>
<td>DANC 325</td>
<td>Special Studies in Dance</td>
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<tr>
<td>DANC 380</td>
<td>Choreography III</td>
<td>(Prereq: 280)</td>
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## REQUIRED COURSES IN CHOREOGRAPHY/THEORY—6 total hours

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<tr>
<td>DANC 181</td>
<td>Dance Improvisation</td>
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<tr>
<td>DANC 290</td>
<td>Dance in the Elementary School</td>
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<tr>
<td>DANC 395</td>
<td>Introduction to Dance Science and Kinesiology</td>
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<tr>
<td>DANC 380</td>
<td>Choreography III</td>
<td>(Prereq: 280)</td>
</tr>
<tr>
<td>DANC 385</td>
<td>Introduction to Dance Notation</td>
<td>(Prereq: 110, 130, MUS 185)</td>
</tr>
<tr>
<td>DANC 389</td>
<td>Lighting and Staging for Dance</td>
<td>(Prereq: Approved Application required)</td>
</tr>
<tr>
<td>DANC 445</td>
<td>Senior Seminar (Prereq: Senior Standing)</td>
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</tr>
<tr>
<td>DANC 460</td>
<td>Performance (Prereq: Advisor consent)</td>
<td>Variable</td>
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<tr>
<td>DANC 465</td>
<td>Dance Ensemble (Prereq: by audition)</td>
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<tr>
<td>DANC 489</td>
<td>Dance Management</td>
<td>(Prereq: Approved application required)</td>
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## Dance Minor

### REQUIRED COURSES IN TECHNIQUE—12 total hours

Twelve hours from dance major technique courses including at least one course in each of the three forms. Ballet Technique (110, 210, 310), Jazz Technique (120, 220, 320), Modern Technique (130, 230, 330).

## REQUIRED COURSES IN CHOREOGRAPHY/THEORY—6 total hours

<table>
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<td>DANC 180</td>
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<tr>
<td>DANC 385</td>
<td>Introduction to Dance Notation</td>
<td>(Prereq: 110, 130, MUS 185)</td>
</tr>
<tr>
<td>DANC 389</td>
<td>Lighting and Staging for Dance</td>
<td>(Prereq: Approved Application required)</td>
</tr>
</tbody>
</table>

## ELECTIVES—6 total hours

Six hours to be elected from the following courses, in consultation with the dance academic advisor.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 185</td>
<td>Music Fundamentals for Dancers</td>
<td></td>
</tr>
<tr>
<td>DANC 285</td>
<td>Musical Style and Form for Dancers</td>
<td>(Prereq: DANC 185)</td>
</tr>
<tr>
<td>DANC 290</td>
<td>Dance in the Elementary School</td>
<td></td>
</tr>
<tr>
<td>DANC 395</td>
<td>Introduction to Dance Science and Kinesiology</td>
<td></td>
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<tr>
<td>DANC 380</td>
<td>Choreography III</td>
<td>(Prereq: 280)</td>
</tr>
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</tbody>
</table>

## DANCE Courses (DANC)

### DANC 101 Beginning Ballet ($18)

2 hrs.

Elementary ballet technique for the general student. The emphasis is placed on line, control, alignment and musicianship. Students will learn simple combinations utilizing fundamental classical ballet vocabulary.

### DANC 102 Beginning Jazz ($3)

2 hrs.

Elementary jazz technique for the general student. Rhythmic integration of isolated movements with emphasis on dynamics, style and performance is stressed.

### DANC 103 Beginning Modern ($18)

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 ($18)

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 ($31)

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 theRussian 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 ($31)

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 improvisations. Students will continue in DANC 120 until advanced to DANC 220 by the instructor. Repeatable for credit. Prerequisite: Advisor consent.

### DANC 130 Modern Technique I ($31)

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, rhythmic accuracy and the application of kinesiological principles. Students will continue in DANC 130 until advanced to DANC 230 by the instructor. Repeatable for credit. Prerequisite: Advisor consent.

### DANC 145 Experiencing Dance

3 hrs.

An introduction to the art of dance through historical and multicultural perspectives including direct experiences in the studio and viewing of live and recorded performances. Readings, lectures, video/films, discussions, writings, and movement classes will be used to introduce the student to non-Western dance, ballet, modern, jazz, tap and other theatrical dance forms. The course also addresses training in dance, the development of movement vocabulary, and the creative process from literal and metaphorical perspectives. Activities are designed to stimulate the perception and enjoyment of dance on a kinesthetic, musical and visual level. The course meets Area I, Fine Arts, General Education requirement.

### DANC 148 Direct Encounter with the Arts ($40)

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 submit journals or response papers about the major events of the course. There will be a course charge in
Students will continue in DANC 220 until advanced to DANC 320 by the instructor. 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, clefs, 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 abstract formal designs. Prerequisite: Dance majors and minors only.

DANC 195 Introduction to Bartenieff Fundamentals
1 hr.
This course introduces Irmgard Bartenieff's theories of functional movement. Through practice students will explore major Fundamentals concepts such as body connections, sequencing, movement initiation, mobility/stability and spatial intent. Students will also learn the "Six Postures," a series of movement sequences which are distillations of Bartenieff's theories.

DANC 196 Conditioning for Dancers
2 hrs.
An introduction to the principles of physical conditioning with a focus on specific application of the information to individual needs and capacities. The course covers methods of building strength, flexibility and cardiorespiratory endurance as a means of enhancing dance performance, including instruction on equipment such as rotator disks, Thera-Bands, and the Current Concepts Reformer utilizing the Dancer Specific®, Pilates-based technique.

DANC 210 Ballet Technique II ($31)
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 ($31)
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 230 Modern Technique II ($31)
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 as used in group choreography. Prerequisite: DANC 180 and DANC 151.

DANC 285 Musical Style and Form for Dancers
2 hrs.
The course surveys composers and musical style from the Renaissance through the twentieth century. There will be an emphasis on the chief stylistic characteristics of the major composers of each period, and discussion of the particular compositions in relation to their suitability for choreographic treatment. Score-reading is an important aspect of the course. Prerequisite: DANC 185.

DANC 290 Dance in the Elementary School
3 hrs.
This course covers the principles, materials, and techniques of teaching creative movement and dance activities to elementary school children as they can be applied in various learning environments. Lecture, observation, and laboratory experiences are provided.

DANC 295 Introduction to Dance Science and Kinesiology
3 hrs.
An introduction to the field of Dance Science for dance majors. Emphasis is placed on anatomical analysis, conditioning principles and injury prevention, with special attention given to application of information to technique class, rehearsal, choreography and individual anomalies.

DANC 296 Introduction to Laban Movement Analysis
2 hrs.
An overview of the theoretical framework and language for describing movement which was developed by Rudolf von Laban. This course includes the history of the development of Laban Movement Analysis, motif writing, and discussion and practice of the theories of Effort, Space, Shape and their relationship to Bartenieff Fundamentals**. Prerequisite: sophomore standing.

DANC 310 Ballet Technique III ($31)
2 hrs.
Ballet technique for the advanced/pre-professional student in the classical idiom. 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 ($31)
2 hrs.
Jazz technique at the advanced/pre-professional level with work on quick study and theatrical skill. Combinations will address a variety of jazz styles and develop the student's own dynamic style. Repeatable for credit. Prerequisite: Placement audition or approval of Jazz Technique II instructor.

DANC 325 Special Studies in Dance Theory
1-6 hrs.
A study of areas of dance theory not included in existing courses. Examples of possible topics include: writing and criticism; costuming; make-up; technology (e.g., audio and video techniques; computer applications for music, lighting design, notation or choreography); and dance for the exceptional student. May be offered with a visiting instructor or artist-in-residence. Repeatable for credit up to 6 hours. Prerequisite: Advisor consent.

DANC 330 Modern Technique III ($31)
2 hrs.
Technique for the advanced/pre-professional student in the modern idiom. Emphasis is placed on the ability to quickly analyze and skilfully reproduce complex movement combinations within the technique. Performance skills are emphasized throughout the course. Repeatable for credit. Prerequisite: Placement audition or approval of Modern Technique II instructor.

DANC 345 Twentieth Century American Dance
3 hrs.
A survey of the purposes, functions, and manifestations of American dance forms beginning of the twentieth century to the present. Relationships are examined between dance and general cultural developments United States in each decade of this century. Topics covered include: the forerunners and pioneers of modern dance, avant-garde and post-modernists, and artists of jazz, tap, Broadway, movies, and the current media. Students will write several short papers and prepare a research paper. Examinations will emphasize essay writing. Dance majors use this course to meet the University Baccalaureate Level Writing Requirement. Prerequisite: DANC 145.

DANC 380 Choreography III
2 hrs.
Concert and musical theatre choreography in the student's area of concentration. Prerequisite: DANC 280.

DANC 385 Introduction to Dance Notation
2 hrs.
A study of dance notation systems which provide practical methods of recording human movement for purposes of analysis and reading. The course includes reading (interpretation), theory, and practice at the introductory level. Prerequisites: DANC 110, DANC 130, and DANC 185.

DANC 389 Lighting and Staging for Dance
2 hrs.
An introduction to dance production from a lighting and staging viewpoint. Course content includes: stage design and terminology, stage management; lighting instruments, distribution, and color; and lighting control via both manual and computer lighting boards; Students will have the 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 Special Studies in Dance Technique
1-6 hrs.
A study of areas in dance technique not included in existing courses. Examples of possible topics include: repertory, African-American dance, pre-classic dance forms, pointe, partnering, contact or advanced improvisation and advanced tap. May be offered with a visiting instructor or artist-in-residence. Repeatable for credit up to 6 hours. Prerequisite: Advisor consent.

DANC 440 Teaching Dance Technique
2 hrs.
This course is designed to develop the skills to teach introductory ballet, jazz and modern dance techniques to children and adults in both academic and private studio environments. The student will serve concurrently as a demonstrator two days per week in a dance technique course, as arranged by the course instructor. Prerequisite: Advisor consent.

DANC 445 Senior Seminar
1 hr.
An exploration of current trends, literature and developments in dance in a seminar format. Students will discuss, compare and analyze ideas generated by assigned readings, as well as their work on capstone projects. Prerequisite: Senior standing.

DANC 460 Performance Variable
An experience in student or faculty choreographed dance works, in fully produced projects not encompassed in specific dance courses. Application with approval of the dance advisor, the faculty evaluator, and the department chair, must be completed and submitted to the dance advisor at least one month prior to performance. Registration occurs after performance has been completed. Repeatable for credit up to 6 hours. Prerequisite: Advisor consent.

DANC 465 Dance Ensemble
1-3 hrs.
An experience in a performing ensemble which provides one or more of the following: master classes, residencies, lecture-demonstrations, and concerts in various dance styles in the region. Members must show proficiency in performance, improvisation, teaching, and public speaking. Members must concurrently enroll in at least one technique course at the 200 or 300 level as specified by the ensemble director. Repeatable for credit. Prerequisite: Sophomore, Junior or Senior standing required and audition or consent of ensemble director.

DANC 480 Graduating Presentation
3 hrs.
The preparation and presentation of an advanced 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 publicity, budget, programming, organization of elements involved in company management, and grantsmanship. Practical application of these principles will be evaluated wherever possible. Prerequisite: Approved application required.

DANC 495 Performance Workshop
2 hrs.
Students will perform a variety of roles and styles from a broad spectrum of music theatre repertoire. Scenes will be performed before a public or invited audience. Performers will be directed and evaluated by a faculty team from Dance, Music and Theatre. Prerequisite: MUS 395.

DANC 498 Readings in Dance
1-4 hrs.
Advanced undergraduate students with good academic standing may elect to independently pursue a program of readings in areas of special interest. Repeatable for credit up to 4 hours. Prerequisite: Approved application required.

DANC 499 Non-Reading Independent Study in Dance
1-4 hrs.
Advanced undergraduate students with good academic standing may elect to independently pursue the study of some area of dance through the creative process. Topics are chosen and arrangements are made to suit the needs of each particular student. Repeatable for credit up to 4 hours. Prerequisite: Approved application required.

DANC 598 Readings in Dance
1-4 hrs.
Advanced students with good academic standing may elect to independently pursue a program of readings in areas of special interest. Repeatable for credit up to 4 hours. Prerequisite: Approved application required.

DANC 599 Non-Reading Independent Study in Dance
1-4 hrs.
Advanced students with good academic standing may elect to independently pursue the study of some area of dance through the creative process. Topics are chosen and arrangements are made to suit the needs of each particular student. Repeatable for credit up to 4 hours. Prerequisite: Approved application required.

MUSIC 251

MUSIC

William Appel
Craig S. Arnold
John Campos
Christine Carton
David Lobeg Code
Curtis Curtis-Smith
Delores Gauthier
Stephen Grugin
Robert Humiston
Stephen Jones
Renata Artman Knific
Thomas Knific
Trent P. Kynaston
David Little
John A. Lychner
James McCarthy
Judy Moonert
Richard O’Hea
Johnny Pherigo
Phyllis Rappeporte
Robert J. Ricci
Silvia Roederer
Wendy Rose
David A. Sheldon
Eric Shumsky
Christina Smith
David S. Smith
Robert Spradling
Matthew Steele
Scott W. Thornburg
Linda Trotter
Bruce Uchimura
Robert L. Whaley
Brian Wilson
Steve M. Wollnibarger
Bradley Wong
Stephen Zegree
Ramon Zupko

The School of Music at Western Michigan University is dedicated to music as an art form that elevates the lives of all who experience it; that embraces and transcends the entire range of human emotion, expression and communication, and that is vital to the cultural enrichment of society. The School of Music regards the music profession and all those associated with it as entrusted with and responsible for the advocacy of this living art form in all aspects. Specifically, the School of Music is committed to excellence in teaching as its foremost priority, believing that there is no more important task than providing a superlative musical education for students, both graduate and undergraduate, whether they be in professional programs in music education, performance, or therapy; liberal arts programs with an emphasis in music; or music courses and experiences for the general university population. In addition, the School of Music strives to preserve established musical traditions and to advance the frontiers of all types of music through scholarly research, creative performance, and innovative composition of the highest quality. As a public institution, the School of Music at Western Michigan University recognizes and accepts its obligation to serve the community, region, state and profession at large with all its resources, and it is committed to the basic principle that participating in the development of a musically enlightened citizenry is the most significant contribution it can make to society.

The School of Music is member of the National Association of Schools of Music. The requirements for entrance and for graduation are in accordance with the published regulations of NASM and the National Council for Accreditation of Teacher Education. The School’s program in music therapy is certified by the National Association for Music Therapy.
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 therapy can earn certification as a Registered Music Therapist upon completion of a six-month internship; the Bachelor of Music with a major in music education carries certification to teach music in the public schools, grades K-12; the Bachelor of Science with a major in music and a minor in elementary education carries certification to teach in the elementary classroom and to teach as a music specialist in the classroom, grades K-8.

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 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 or the final eight hours of music course work which will apply to that minor.

Admission

Admission to Western Michigan University is granted only by the Office of Admission and Orientation for undergraduate students. Application forms may be obtained by writing to the Office of Admission and Orientation.

Enrollment in a music curriculum is contingent upon admission to the University and approval of the School of Music. School approval is obtained through the music audition program. The student may proceed by making application to the University at which time notification will be sent about the audition program in the School of Music, or a request may be made for an opportunity to audition without making application to the University by obtaining an Audition Confirmation Form from the School of Music.

The student is urged to commence application procedures early in the senior year, or 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 the 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 the same general 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 Bachelor of Music in music 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 courses.

The School of Music’s audition and testing program has helped many students make a more intelligent choice regarding their educational interest in music. Information regarding admission to a music curriculum may be obtained by writing the Music Student Advisor in the School of Music. The School welcomes consultations from prospective students, parents, and counselors regarding educational goals and plans.

Transcript Credit

Music credit from another institution is normally acceptable providing course substance is equivalent to a similar course required in the student’s curriculum at Western and the student has earned a grade of “C” or better in that course. No credit hours exceeding the number granted for parallel work at Western will be accepted for transfer from another institution. In order to earn a Bachelor of Music degree from Western Michigan University, a student may not transfer more than 37 semester credit hours in music courses taken at a community college toward music curriculum requirements. If the “Performance Electives” requirement has not been completed at the time of the transfer, at least two of the remaining hours must be completed in major ensembles. Advisors will assist transfer students in lining up ways of applying credit hours, not applicable to music curriculum requirements, toward General Education electives or free electives.

Three areas—applied music, music theory, and piano proficiency for non-pianists—are, by nature, skills courses which require competency at one level before the student is ready for the next or even the second course in a sequence. This competency can only be determined by demonstration and/or examination, which precludes the automatic transfer of credit in these areas.

Presumably, the transfer student will have completed many of the core requirements (see below) before enrolling at Western. In that case, the student must elect a major area of concentration within the music curriculum prior to enrollment. Acceptance in the major will be automatic but certain requirements must be met prior to enrollment in that major. In order to maintain good standing as a major in music performance, composition, jazz studies, music history, or music theory, the student must earn a minimum grade point average of 3.25 in the first two courses that apply to the major area of concentration. The student who elects music education or music therapy as a major must maintain a grade point average of 3.0 in all courses in the major area of concentration in order to be recommended for intern teaching (music education) or music therapy internship. All transfer students must take a Piano Placement Examination before admission in order to project the feasibility of completion of piano proficiency requirements.

For further information regarding the transfer of music credits, contact the Music Advisor in the School of Music.

Advising

Advisor: Margaret J. Hamilton
Appointments: 2146 Dalton Center
(616-387-4672)

The Music Student Advisory 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 those 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 necessary steps for completion of requirements. All music students are urged to take advantage of the advising services in the School of Music for assistance in making educational choices and for interpretation of requirements as they are stated in the Undergraduate Catalog.

Miscellaneous

In addition to required coursework, all students must satisfy additional requirements in recital performance and recital attendance.

The requirement for recital attendance: All music majors are required to attend Music Convocation (MUS 101) each semester they are in residence. Each student is allowed to be absent from one convocation per semester. Without exception, only one absence per semester will be excused. Any absences beyond “one” will be recorded in the student’s file. Absences must be made up by attending other pre-approved School of Music concerts and recitals in which the student is not a participant. Absences in the student’s record which have not been made up will prevent graduation.

The requirement(s) for recital performance are as follows:

1. Bachelor of Music candidates with a major in music performance must present 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 recital (scheduled public recitals, convocations, or area recitals) prior to graduation. Individual students may be required to give additional performance 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 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 history. Examinations may be scheduled in these areas to allow qualified students to demonstrate competency.

In the event that a student demonstrates competency in an area of study that is required in the curriculum, the student may elect two alternatives for fulfilling degree requirements:

1. request a waiver of the
requirement and elect an equivalent number of hours in music courses of the student's choice or (2) receive credit for the course(s) in which competency is demonstrated by paying an examination fee 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 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 meet 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.

Baccalaureate Writing Requirement
Students who have chosen any music major will satisfy the Baccalaureate Writing Requirement by successfully completing MUS 352 Non-Western Music.

Core Requirements—Bachelor of Music Degree

| Hrs. | Music Convocation 101 (7 semesters) | 0 |
| 101 | *Applied Music 200, 300 (see Electives below) | 14 |
| 200 | Basic Music 160, 161, 260, 261 | 12 |
| 160 | Aural Comprehension 162, 163, 259, 265 | 26 |
| 162 | History or Theory Elective (see Electives below) | 2 |
| 163 | *Music History and Literature 170, 270, 271 | 27 |
| 170 | Performance Elective (see Electives below) | 8 |
| 270 | Keyboard Fundamentals 120-121 | 2 |
| 120 | Conducting 215 | 1 |
| 215 | General Education Electives | 35 |
| 212 | Major Area of Concentration | 13-41 |
| 121 | Free Electives to make a minimum of 122 semester credit hours. | 8 |
| 360 | Music Clearance (verification of completion of recital, performance and attendance requirements). | 8 |

EXCEPTIONS TO CORE REQUIREMENTS

Jazz Studies majors may fulfill two of the four semester credit hours in music required by electing MUS 118, 119, 210 or 211.

Music Therapy majors complete only 8 hours of Applied Music 200 (including successful completion of a Sophomore Hearing), only 4 hours of Performance Electives, and are not required to complete a theory/history elective.

Composition majors complete only eight hours of Applied Music 200 (including successful completion of a Sophomore Hearing) and four hours of Applied Music 300, and only four hours of Performance Electives.

Music Education: Choral/General Music majors complete only 7 semesters of Performance Electives. 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 four semesters of Marching Band (for Physical Education credit). 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 certification.

ELECTIVES

Performance electives may be selected from the following:

1. All students are required to elect four semesters of a major ensemble. The major ensembles are: 107, 108, 110, 111, 112, and 113.

   Please note the following:
   - At least two of the required four semesters of major ensemble must be taken during the junior-senior years.
   - The four semesters MUST be taken in an ensemble in the student's applied area.

   Keyboard Fundamentals major 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 an instrumental ensemble.

2. The remaining four semester hours of performance electives may be selected from the following:

   - Please note: All keyboard majors are required to elect one semester of MUS 190 Accompanying (therapy majors excused).
   - The student is expected to complete one performance elective during each term of enrollment.

Music History majors are required to complete two semesters of MUS 517, Collegium Musicum.

Theory electives may be selected from the following:

- MUS 263, 360, 518, 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, 593, 585, 586, 587.

Electing a Major Area of Study—Bachelor of Music Degree

Music majors will elect a major area of concentration in the fourth semester of study. The student will be accepted in the area of choice if he/she qualifies under the following guidelines:

- Music History, Composition, Theory, Therapy

   The student must have a minimum grade point average of 3.25 in "Core" courses which are in the same area as the elected major.

Music Performance and Jazz Studies

The student must have a minimum grade point average of 3.25 in "Core" courses which are in the same area as the elected major, as well as be approved for this major by taking a performance qualifying examination which should be passed 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 2.2 average in those courses, and must complete the formal admission procedure as described in the Music Student Handbook.

Music Therapy and Music Education

Students must earn a minimum grade point average of 3.0 in course work in the area of the major in order to be recommended for an internship (music therapy) or for a intern teaching assignment (music education).

If the student does not qualify according to the guidelines outlined above, the application will be submitted to the faculty committee in the area of the major for approval. In the event that approval is denied and the student does not meet another 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 | 2 |

Select one from the following: Choral Methods (340), Instrumental Methods I (344), String Methods (345)

Teaching and Learning in Music 348 | 2 |

Conducting 330 | 2 |

Instrument elective

Select one from the following: Fundamentals of Guitar (128), Instruments of the Band and Orchestra (279), Instruments of the Choir (280), Fundamentals of Band (290)

Methods Elective II | 2 |

Select from the following: Music for the Special Student (382), Technology in Music Education (386)

Second Instrument: 4 Hrs.

Piano, Keyboard Musicianship 220, 221, 320, 321 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

- 27 Hrs.

- Human Development 250 | 3 |

- Teaching of Reading 301 | 3 |
Music Education: Instrumental Emphasis

Grants certification to teach music at any grade level (K-12) 18 hrs.

Methods Elective I 2

Select from the following: String Methods (345), Instrumental Methods II (347), Choral Methods (340), or General Music Methods (336).

Teaching and Learning in Music (348) 2

Conducting (331) 2

Clarinet (Clarinet) 1

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 one major string instrument, and complete MUS 128 and 129 plus four courses from those listed above for band emphasis.

Note: Those who test out of any of the above must fulfill their class instrument requirements by completing one or more of the following: String Class — Cello, Double Bass (128), String Class — Violin, Viola (129); Vocal Techniques for Music Educators (117), Music 130, 133, 142, 143, 144, 145.

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 27

Human Development (250) 3

Teaching of Reading (301) 3

Teaching and Learning, Secondary (302) 4

School and Society (395) 3

Seminar in Intern Teaching (410) 2

Intern Teaching (475) 10

Physical Education 2

Wind/Perussion students must complete two semesters of Marching Band (109) to fulfill physical education requirements. All other instrumental emphasis majors are also strongly urged to complete this requirement this way.

Before the student will be recommended for intern teaching, he/she must have completed all courses in the major with a minimum grade point of 3.0. The application for intern teaching assignment must be made in the Office of Professional Field Experiences prior to one full semester before the assignment is to begin.

Music Therapy Major

Core (min. exceptions) 22 hrs.

Courses in Music Therapy 281, 289, 290, 360, 381, 383, 472, 473, 479, 480, 481 22

* Keyboard Musicianship 220, 221, 320, 322 4

Fundamentals of Guitar 126 1

Voice Class 117

Instruments of the Band and Orchestra 279 and Instruments of the Music Classroom 260 2

Professional Electives: select from 123, 129, 129, 130, 133, 142, 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. In completing Physical Education requirements the therapy major must complete at least one course in dance which qualifies as a physical education “activity” course.

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) 260 10

Performance Electives (in addition to Core Requirements; see Electives above) 2

Chamber Music 218 2

Composition 262 2

Advanced History/Literature (in addition to Core Requirements) 2

Counterpoint 560 2

Music Electives 5

Senior Recital (required for Music Clearance) 0

Music Performance: Vocal Major

In order to be permitted to major in music performance the student must achieve a minimum grade point average of 3.25 in Applied MUS 200 and pass a performance qualifying examination (see “Electing a Major Area of Study”).

Applied Music (in addition to Core Requirements) 200 4

Applied Music (in addition to Core Requirements) 300 10

Performance Electives (in addition to Core Requirements; see Electives above) 2

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 Distribution courses.

Music Theory

Hrs.

Composition 262-263 4

Musical Acoustics 566 3

Seminar in Music Composition 362 8

Seminar in Electronic Music Composition 564 8

Counterpoint 560-561 4

Orchestration 567-568 4

Professional Electives (choose from Composition 263, Seminar in Electronic Music Composition 564, Seminar in Music Composition 362, Musical Acoustics 566, Style Analysis 560, Improvisation 558, Jazz Arranging 555, Jazz Improvisation 558) 8

All Bachelor of Music: Music Theory candidates must pass a piano proficiency examination as outlined below.

Composition

Hrs.

Composition 262-263 4

Musical Acoustics 566 3

Seminar in Music Composition 362 8

Seminar in Electronic Music Composition 564 8

Counterpoint 560-561 4

Orchestration 567-568 4

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 coursework 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.

Keyboard Requirements for Composition and Theory Majors

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 attempt to achieve a performance level with a few compositions. Sight-reading ability is also expected. Functional skills related to the student's major shall be examined as follows:

Theory/Composition
1. Ability to harmonize at sight.
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, augmented dominant seventh chords, Neapolitan sixth chord, diminished seventh chords, and half-diminished seventh chords.

Music History
<table>
<thead>
<tr>
<th>Course Name</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GER 200-201 and FREN 400 or FREN 200-201 and GER 400</td>
<td>12</td>
</tr>
<tr>
<td>Introduction to Musicology 570-571</td>
<td>6</td>
</tr>
<tr>
<td>Music History Electives (see Electives above)</td>
<td>10</td>
</tr>
<tr>
<td>Counterpoint 560-561</td>
<td>4</td>
</tr>
<tr>
<td>Precussion Electives (choose from Composition 262, Seminar in Music Theory 565, Orchestration 567/568, Improvisation 518, Medieval Music 585, Renaissance Music 586)</td>
<td>4</td>
</tr>
</tbody>
</table>

All Bachelor of Music: Music history candidates must demonstrate a level of proficiency 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
<table>
<thead>
<tr>
<th>Course Name</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>Applied Music (in addition to Core Requirements) 300</td>
<td>2</td>
</tr>
<tr>
<td>Jazz Ensembles 119 or 212</td>
<td>2</td>
</tr>
<tr>
<td>Jazz Combo 218</td>
<td>2</td>
</tr>
<tr>
<td>Jazz Composition 264</td>
<td>2</td>
</tr>
<tr>
<td>Jazz Arranging 555, 556</td>
<td>4</td>
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<tr>
<td>Jazz Improvisation 558, 559</td>
<td>4</td>
</tr>
<tr>
<td>Jazz History and Literature 583</td>
<td>4</td>
</tr>
<tr>
<td>Keyboard Musicianship 220, 221, 320, 322</td>
<td>4</td>
</tr>
<tr>
<td>Counterpoint 560</td>
<td>2</td>
</tr>
<tr>
<td>Electronic Media 594</td>
<td>2</td>
</tr>
<tr>
<td>Professional Electives (choose from Piano 100, Composition 262/263, Conducting 330/331, Technology in Music and Music Education 386, Counterpoint 561, Seminar in Composition 564, Orchestration 567/568, Musical Acoustics 566)</td>
<td>3</td>
</tr>
</tbody>
</table>

All Bachelor of Music: Jazz Studies candidates are required to present a senior recital.

Bachelor of Arts Degree Music Curriculum

124 total hours
1. General Education Electives 35
2. Physical Education (Marching Band 109 substitutes) 2
3. A major in music:
   Music Convocation 101 (6 semesters) 0
   Applied Music 200 (must pass sophomore hearing) 12
   Basic Music 160-161, 260-261 8
   Aural Comprehension 162, 163, 259, 265 4
   Keyboard Fundamentals 120-121 2
   Music History/Literature 170, 270, 271 8
   Performance Electives (major ensemble) 4
   Music Electives 12
4. 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.)
5. 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 a 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 Performer
See "Interdisciplinary Program" in College of Fine Arts.

Bachelor of Science Degree

Elementary Education—Music

See description under the College of Education section of this Undergraduate Catalog.

Music Minor

24 hours
Minors must take the following basic courses:
Fundamentals of Music 159 2
Basic Music 160 3
Aural Comprehension 162 1
Minor must choose one of the following two groups:
* Applied Music 100 2
* Performance Electives 2
(Select from 107, 108, 110, 112, 113)
Music Appreciation: Live Music 150 4
American Music 350 4
* Personal auditions required
Electives (10 to 14 hours) Select from Keyboard MusicianShip 120, 220, 320, 322, 330, 331, Composition 262, 263, 262, 564, Music History and Literature 170, 270, 271, electives; Jazz Studies 264, 555, 556, 558, 559, 560, Applied Music 100, Performance Electives 107, 108, 109, 110, 111, 112, 113, 114, 116, 190, 210, 211, 212, 218, 317, 517; Other electives as approved by the music advisor.

MUSIC 255

Music Courses (MUS)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

Ensembles

MUS 106 Western String Chamber Orchestra 1 hr.
A select string ensemble that explores the finest string orchestra repertoire, from Baroque to the twentieth century. The group maintains an active on- and off-campus performance schedule and will require a strong commitment and desire for musical and technical excellence. Membership by audition only. Pre-requisite: 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. Credit in Marching Band may be substituted for P.E. credit. Membership by audition.

MUS 110 Symphonic Band 1 hr.
The University Symphonic Band is dedicated to the performance of outstanding literature, including original works for band, compositions for wind ensemble and orchestral transcriptions. An emphasis is placed on understanding the pieces performed from an aesthetic and stylistic basis as well as from a technical point of view. This ensemble maintains an active performance schedule on campus and in the community, as well as throughout Michigan and the surrounding states. Membership by audition.

MUS 111 University Orchestra 1 hr.
The orchestra is open to all students who have had a reasonable amount of orchestral experience. Many fine compositions will be studied and played during the year, and the orchestral joint 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
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 quintets, brass quintets, percussion ensembles, piano trios, etc. Credit will be granted only if a sufficient rehearsal/performance schedule warrants.

MUS 317 Opera Workshop 1 hr.
A production experience in the acting, singing, accompanying, and producing of musical theatre. The class is offered each semester and culminates in the performance of an opera or operatic scenes. Open to advanced singers, pianists, and persons interested in production techniques. Admission is by personal interview with the instructor.

MUS 514 Instrumental Chamber Music 1 hr.
Special ensembles formed to perform standard instrumental chamber music works. Ensembles may include a variety of combinations, i.e., string quartets, woodwind quintets, brass quintets, percussion ensembles, piano trios, etc. Credit will be granted only if a sufficient rehearsal/performance schedule warrants.

MUS 516 Music Theatre Practicum 1 hr.
A production experience in music theatre. Each semester culminates in an opera or musical comedy. Open to singers, actors, accompanists, instrumentalists, and persons interested in production techniques. Admission by audition or permission of the instructor. May be repeated for credit.

MUS 517 Collegium Musicum 1 hr.
Performance of early Western music. Open to all students of the University. Additional transcription, arranging, editing and conducting of early music is required of Music History majors. Graduate students may count not more than two hours of this course for graduation. Membership by audition.

Applied Music
Private lessons (applied music) in organ, piano, voice, and all orchestral and band instruments are offered to all University students to the extent that instructor time and practice facilities are available. Priority in applied music study is given first to music majors, second to music minors, and third to students wishing to take the study on an elective basis. All students who take private lessons must register for applied music by reporting to the Music Office. Only students enrolled in other classes at Western are eligible to receive applied music instruction.

An audition or interview is necessary in order to be approved for study.
Students are required to make arrangements for a lesson time with the private instructor in the first days of classes for 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 40-minute lesson; four credit hours, one 60-minute lesson. The more credit a student receives in applied music, the more is expected in practice time and materials.

A $7 fee is required for those enrolled in applied music at the 200, 300, 500, and 600 level in order to bring guest artists/performers to campus for additional musical instruction and enchirment.

MUS 101 Music Convocation No Credit ($45 fee)
A series of special musical events required of music majors. Programs include lectures and recitals by faculty, selected students, and guest artists. (A $45 fee is assessed to all music majors in order to provide funds for travel and instruments used by students throughout the music program.)

MUS 102 Piano Class I 2 hrs. ($5 fee)
This is a beginning course for the development of piano playing skills for non-music majors/minors. The course will cover fundamentals of music reading, keyboard techniques, sight-reading, and harmonization.

MUS 103 Piano Class II 2 hrs. ($5 fee)
A continuation of MUS 102 Piano Class I. Because course goals do not align with other keyboard classes in the School of Music, the student will not be prepared to progress into other piano courses offered 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 with some singing and coaching of easy lyric songs and arias from musical comedy and opera. Application of healthy vocal technique to dialogue will be included. Prerequisite: Audition only.
This class is for the music major or minor who 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 play 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. Prerequisite: 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, rhythm and music, 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 148 Direct Encounter with the Arts ($35 fee) 4 hrs.
A course that uses a direct approach to introduce students to their cultural world by guiding them through first-hand experiences in a number of 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, DANC 148, THEA 148. May be taken only once from College of Fine Arts Departments.

MUS 150 Music Appreciation: Live Music 4 hrs.
An introduction to music and music literature in conjunction with attendance at music concerts and recitals on campus. Classroom discussions and readings will guide the student through a variety of listening experiences that will stimulate perception and enjoyment of music on a visual as well as aural level. This approach will also insure a wide sampling of musical styles and media while encouraging the student to become more aware of his/her musical surroundings. A schedule of the musical events required for the semester will be issued during the first week of the semester. MUS 150 may not be elected by music majors to fulfill General Education requirements.

MUS 151 Music Appreciation: Jazz/Pop 4 hrs.
A study of the development of jazz and its importance as an American art form. The course includes a survey of the beginnings of jazz as a blending of the musical cultures of Africa and Europe. The development of jazz from the late nineteenth century to the present will be traced. Current trends in jazz and rock, as well as electronic influences in contemporary pop music will be emphasized. Studies will include sociological and cultural trends and their influence on the evolution of the various styles and forms of jazz and pop. Implications for the future will be considered. MUS 151 may not be elected by music majors to fulfill General Education requirements.

MUS 152 Rock Music: Genesis and Development 3 hrs.
A study of rock and roll music since its inception in the mid-1950s. The impact of black rhythm and blues, jazz forms, and radio and television upon early rock will be studied as well as further evolutionary developments such as “do-wop”, soul music, folk rock, psychedelic rock, jazz rock, the various English schools, heavy metal, and punk styles, to mention but a few. The course will cover the material of rock music from 1955 to present. It may not be elected by music majors to fulfill General Education requirements.

MUS 158 Jazz/Pop Music Theory 2 hrs.
A course in the theory on which Jazz and Popular musics are based. Topics covered will include chord nomenclature, construction, and voicings together with basic keyboard instrumentation and ear training. The course is open to music majors and non-majors who can read music. Prerequisite: MUS 160 with a “C” or better, or permission of the instructor.

MUS 159 Fundamentals of Music 2 hrs.
A study of fundamentals, including notation, scales, intervals, basic chord construction, and the rhythmic/metric aspect of music. This course is open to all students as an introductory study in music theory.

MUS 160 Basic Music I 3 hrs.
A study of traditional harmony through partwriting and analysis including the inversions of diatonic triads and dominant seventh chords. Prerequisite: Acceptance as a music major or minor and the passing of a qualification examination in music fundamentals.
MUS 161 Basic Music II
3 hrs.
A continuation of MUS 160. Includes the study of secondary dominants, augmented sixth chords, borrowed chords, and modulation to foreign keys. Prerequisite: MUS 160 with a grade of "C" or better.

MUS 162 Aural Comprehension I
1 hr.
Training in the basic skills of music reading and ear-training. Prerequisite: Acceptance into MUS 160.

MUS 163 Aural Comprehension II
1 hr.
A continuation of MUS 162. 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 160 Basic Music III
3 hrs.
A continuation of MUS 161 designed to reinforce the melodic, harmonic and rhythmic concepts of traditional music by means of analysis and composition assignments. The main emphasis will be on the study of 18th and 19th-century techniques, styles, composers and forms. Prerequisite: MUS 160 with a grade of "C" or better.

MUS 161 Basic Music IV
3 hrs.
A continuation of MUS 260 designed to reinforce the melodic, harmonic and rhythmic concepts of traditional music by means of analysis and composition assignments. The main emphasis will be on the study of 20th-century techniques, styles, composers, and forms. Prerequisite: MUS 260 with a grade of "C" or better.

MUS 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. Prerequisite: MUS 160, MUS 162.

MUS 220 Keyboard Musicanship
1 hr.
A course primarily designed for those who need to develop more advanced practical skills at the piano. Emphasis is on further development of piano technique, sight-reading and harmonization skills. Prerequisite: MUS 121 with a grade of "C" or better, or instructor consent.

MUS 221 Keyboard Musicanship
1 hr.
A continuation of MUS 220. Prerequisite: MUS 220 with a grade of "C" or better, or instructor consent.

MUS 233 Italian/English Diction
1 hr.
A phonetic approach to the pronunciation of these languages designed for singers and choral directors. The performance of the language utilizes the vocal literature of major composers in each language.

MUS 234 French/German Diction
1 hr.
A phonetic approach to the pronunciation of these languages designed for singers and choral directors. The performance of the language utilizes the vocal literature of major composers in each language.

MUS 240 Music for the Classroom Teacher
3 hrs. ($10 fee)
Designed for elementary education students without regard to previous musical training. Students are prepared to use music functionally and developmentally in the elementary classroom through singing, through playing the piano and informal instruments, and through responding to music rhythmically. Creative aspects and values of music are emphasized, and materials are studied in relation to their future uses in the classroom.

MUS 259 Aural Comprehension III
1 hr.
Continuation of MUS 163. Prerequisite: MUS 163 with a grade of "C" or better.

MUS 260 Basic Music III
3 hrs.
A continuation of MUS 161 designed to reinforce the melodic, harmonic and rhythmic concepts of traditional music by means of analysis and composition assignments. The main emphasis will be on the study of 18th and 19th-century techniques, styles, composers and forms. Prerequisite: MUS 160 with a grade of "C" or better.

MUS 261 Aural Comprehension II
1 hr.
Continuation of MUS 260. Prerequisite: MUS 260 with the grade of "C" or better.

MUS 262 Composition
2 hrs.
Beginning work in composition, with emphasis on the development of short works utilizing small instrumental combinations. Attention will be paid to the development of melodic, rhythmic and harmonic devices. Prerequisite: MUS 161, or permission of instructor.

MUS 263 Composition
2 hrs.
A continuation of MUS 262. Prerequisite: MUS 262.

MUS 264 Jazz Composition
2 hrs.
The fundamental aspects of composition in the jazz idiom, including harmonic progression, melodic design and rhythmic formulation. Intensive study will be made of well-known standards as well as classic jazz compositions. All periods will be studied so that the student will have a well-grounded familiarity with basic compositional idioms, including the blues, standard AABA song forms, modal forms and more complicated sectional forms. All compositions created in class will be performed by class members or by the appropriate ensemble outside of class. Prerequisite: MUS 158 (or instructor consent), MUS 260 concurrently.

MUS 265 Aural Comprehension IV
1 hr.
Continuation of MUS 259. Prerequisite: MUS 259 with a grade of "C" or better.

MUS 270 Music History II:
Medieval/Renaissance
3 hrs.
An introductory survey of the music of late Antiquity through the early seventeenth century. Prerequisite: MUS 170.

MUS 271 Music History III:
Nineteenth/Twentieth Century
3 hrs.
An introductory survey to the music of the early Romantic era through the twentieth century. Prerequisite: MUS 170.

MUS 279 Instruments of the Band and Orchestra
1 hr.
Students survey the string, woodwind, brass and percussion instruments commonly used in the band and orchestra. The major aim of the course is to make the student aware of the unique sound which characterizes each instrument and how that sound is produced. In developing perception and discrimination in this regard, the student investigates such things as the acoustical properties of the instruments, the construction of the embouchure for the brasses and woodwinds, the techniques of bowing string instruments, and the physical attributes required to perform successfully on certain instruments. All will learn the proper techniques for playing various percussion instruments commonly used in the classroom and will be given the opportunity to explore one or more of the brasses and woodwinds. Prerequisite: Instructor consent.

MUS 280 Instruments of the Music Classroom
1 hr.
Students will survey the instruments commonly used in the music classroom. All will learn the proper techniques for playing and teaching autoharp, ukulele, recorder, dulcimer, and others. Emphasis is placed on inclusion of these instruments in the music classroom. Prerequisite: Acceptance into Music Education curriculum.

MUS 281 Introduction to Music Therapy
1 hr.
An orientation to the discipline of music therapy via classroom lectures, video tape presentations, and clinical observations. This course should be taken following or concurrent with PSY 100.

MUS 289 Music Therapy Activities for Children
2 hrs.
This course will examine labels and categorizations involved in clinical populations. Students will explore the role of social-recreational activities, for a more indepth study of appropriate music materials and activities, and allow for experience in designing and implementing music therapy treatment procedures for individuals and groups. Class time will be primarily used for instruction with some selected help times to allow for more individualized instruction. Exams will be written, playing, and/or presentation format. Prerequisite: MUS 126 and MUS 281, or both may be taken concurrently.

MUS 290 Music Therapy Activities for Adults
2 hrs.
This course will examine labels and categorizations involved in adult populations. Offer instruction in social-recreational instruments, allow for a more indepth study of appropriate music materials and activities and allow for experience in designing and implementing music therapy treatment procedures for individuals and groups. Exams will be written, playing, and/or presentation format. Prerequisite: MUS 126 and MUS 281, or both may be taken concurrently.

MUS 320 Advanced Keyboard Musicanship
1 hr.
Course emphasis is on the development of accompanying and harmonization skills and an introduction to four-part, open-score reading. Prerequisite: MUS 221 with a grade of "C" or better, or instructor consent.

MUS 321 Keyboard Skills for Vocalists
1 hr.
A course designed to concentrate on piano skills necessary for vocal majors. The course will include accompanying techniques, sight-reading, transposition and open score reading, as well as general piano techniques and some functional piano skills. Prerequisite: "C" or better in 320 or instructor consent. Note: Required for Music Education: Choral/General and Applied Voice majors.

MUS 322 Keyboard Harmonization Skills
1 hr.
A course devoted to developing harmonization/improvisation skills necessary for music therapy and elementary education majors. Emphasis will be on the playing of folk and popular music. The coursework will include the use of guitar symbols, playing by ear, some functional keyboard harmony and figured bass, as well as sight-reading and general technique. The course will also be open to piano majors wishing to increase their knowledge of piano techniques.
functional skills on the piano. Prerequisite: "C" or better in MUS 320 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 2 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 classroom. Administration and implementation of the class will be examined. The course is especially 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 2 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 production of musicals and madrigal dinners, and the principles involved with developing show jazz choirs will be examined. Job seeking and professional growth will be discussed. Prerequisite: MUS 339 or MUS 344 with a "C" or better.

MUS 344 Instrumental Methods I 2 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 string instruments 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 2 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 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 2 hrs.
This course is designed to teach students to write outcome statements, to plan and prepare learning activities to teach those outcomes, and to evaluate and assess the process used and outcomes. Classroom management, questioning techniques, conceptual hierarchies, sequencing techniques, program goals, short and long term goals related to program goals, and lesson planning will be discussed. Application will be in the junior high/middle school classroom. Practicum experiences in junior high/middle school general music classroom which provide the student with opportunities to apply principles developed in the class are a part of course requirements. Prerequisites: MUS 336 or MUS 344 with a "C" or better.

MUS 350 American Music 4 hrs.
A survey of 20th-century music in the United States including concert, popular, and jazz styles. Influences of earlier American traditions and of other continents will be traced. The relationships between America's diverse modern music and its complex society will be explored. Ability to read music is not required.

MUS 352 Non-Western Music 2 hrs.
A study of the traditional music of China, Japan, Southeast Asia, India and the Arab countries, as well as of the non-literate cultures around the world, such as American Indian, Australian Aborigine, African, and Micronesian. One or several cultures will be selected for close study. A particular attempt will be made to understand the customs and attitudes of a people through their music.

MUS 360 Style Analysis 2 hrs.
An analytic study of the larger forms from the instrumental and vocal repertoire. Prerequisite: MUS 263 with a grade of "C" or better.
MUS 450 Music Appreciation: The Symphony
3 hrs.
The course in THE SYMPHONY is a general music course which presents music for symphonic orchestra from the listener's point of view. It deals with the materials, structure, texture, sonority, and style of orchestral music since the mid-eighteenth century as well as the cultural milieu which gave rise to and brought about changes in musical style. Music reading ability not required. MUS 450 may not be elected by music majors to fulfill General Education requirements. Not open to graduate music majors.

MUS 472 Clinical Practicum in Music Therapy I
2 hrs.
A lecture/lab course to provide an opportunity for the music therapy student to apply music therapy principles with assigned individual/group clientele in the Music Therapy Clinic or to treat community agencies. Prerequisite: MUS 281, MUS 289, MUS 290, or MUS 383. Reserve time for clinical participation.

MUS 473 Clinical Practicum in Music Therapy II
2 hrs.
A continuation of MUS 472. Prerequisite: MUS 472 Reserve time for clinical participation.

MUS 479 Influence of Music on Behavior
3 hrs.
Justification for the use of music to change human behaviors through analysis of historical evidence, theoretical assumptions, and published research. Description of the therapeutic process with the intervention of music from assessment to community transfer. Prerequisite: MUS 472. Reserve time for clinical participation. Liability insurance required.

MUS 480 Music Therapy Methods and Materials
3 hrs.
Study of phenomenological, cognitive, and behavioral orientation to treatment as applied to the music therapy setting. Review of contemporary issues affecting the clinical practice of music therapy. Prerequisite: MUS 472. Reserve time for clinical participation. Liability insurance required.

MUS 481 Music Therapy Internship
2 hrs.
A six-month internship at an approved facility. Prerequisite: Consent of department.

MUS 490 Undergraduate Workshop in Special Problems
1-3 hrs.
Designed for students interested in some special field of music not formally listed for instruction. All special problems must be approved by the Director of the School of Music, but may be under the direct guidance of any member of the Music faculty. This course may be elected as many as three times.

Open to Underclass and Graduate Students

MUS 530 Advanced Choral Conducting
2 hrs.
Supervised experience in conducting vocal ensembles. The student may be called upon to prepare an ensemble for public performance. Prerequisite: Audition required.

MUS 531 Advanced Instrumental Conducting
2 hrs.
Supervised experience in conducting instrumental groups. The student may be called upon to prepare an ensemble for public performance. Prerequisite: Audition required.

MUS 542 Studies in Music Education: (topic) 2 hrs.
Topic to be announced. Selection will be made from the following or similar topics: Music in the Humanities, Evaluation of Music Education Materials, and Curriculum Planning for Innovation in Music Education. This course may be repeated for an accumulation of not more than 4 credits.

MUS 546 Computer Assisted Instruction in Music
3 hrs.
The primary goal of the course is to teach students who already program some of the specific techniques used in developing original software for CAI in music. The main activity in the course will be programming, and one of the products of the course should be, for example, a program of sufficient sophistication as to at least potentially qualify it for publication. Prerequisite: CS 105 or CS 502 or consent of instructor.

MUS 555 Jazz Arranging
2 hrs.
Jazz Arranging is a study of the art of arranging for the jazz ensemble—both traditional and contemporary. The course will undertake a detailed study of instrument ranges, transpositions and sound potential, and will cover voicings, scoring practices, calligraphy and contemporary trends within the medium. Prerequisite: MUS 158 (or instructor consent) and MUS 161, "C" or better required in each course.

MUS 556 Advanced Jazz Arranging
2 hrs.
A study and application of the art of arranging for the jazz ensemble, studio orchestra and show orchestra. The course will undertake a detailed study of scoring for winds, brass, strings, voices and percussion in relation to traditional and contemporary trends within the medium. Prerequisite: MUS 555 and MUS 264 or concurrently.

MUS 558 Jazz Improvisation I
2 hrs.
A study and directed application of the fundamentals of jazz improvisation including basic chord and scale construction and recognition, harmonic function, chord-scale relationships and basic blues and popular song forms. All students will be required to develop aural and performance skills relative to those theory skills. Prerequisite: MUS 158 (or instructor consent) and 161, "C" or better is needed in each class.

MUS 559 Jazz Improvisation II
2 hrs.
A study and directed application of advanced techniques of jazz improvisation including chord extension, voicing, inversions and substitutions, chord function and progressions and complex scales and their applications. All students will be required to develop aural and performance skills relative to those theory skills. Prerequisite: MUS 558 and MUS 218 Jazz Ensemble or concurrently.

MUS 560 Counterpoint
2 hrs.
A study of the contrapuntal techniques of the eighteenth, nineteenth and twentieth centuries. Written assignments are closely correlated with the contrapuntal styles of significant composers. Prerequisite: MUS 161 with grade of "C" or better.

MUS 561 Counterpoint
2 hrs.
A continuation of MUS 560. Prerequisite: MUS 560.

MUS 564 Seminar in Electronic Music Composition
2 hrs. ($30 fee)
Original music composition with digital and analogue synthesizers and computers. Creation of sound scores for concert performances, film, 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 periodical 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 the following concepts: direct and reflected sound, the operation of sound mixers and multi-track recorders, psychoacoustics, the human ear, and room acoustics.

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 3 hrs.
A survey of choral music (mass, motet, anthem, cantata, oratorio) from the Renaissance through the Romantic period.

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, bebop, mainstream and the more eclectic period of jazz rock and free-form jazz will be explored. Important works will be examined from each period in order to grasp the esssentials 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. Performance practice options will be explored. Prerequisites: MUS 270 and MUS 271.

MUS 587 Contemporary Music 2 hrs.
A survey of trends in European music and music of the Americans from about 1910 to the present day.

MUS 590 Studies in Pedagogy 1-4 hrs.
Topics to be announced. Selection will be made in consultation with: Piano Pedagogy, Vocal Pedagogy, String Pedagogy, Brass Pedagogy, Woodwind Pedagogy, Pedagogy of Teaching Theory, or similar topics. May be repeated for credit. Prerequisite: MUS 300 level applied voice or permission of instructor.

MUS 594 Electronic Media 2 hrs. ($30)
The purpose of this course is to expose the student to the equipment used in various recording situations and its operation, as well as discussing the artistic use of this equipment. Although predominately a techniques course, areas which affect the creative aspects of the final recording will be discussed (such as microphone placement, tasteful vs. inappropriate editing, etc.). In addition to the recording aspects, other electronic instruments used in performances will be surveyed, including synthesizers of various types (both keyboard and non-keyboard) and traditional electronic instruments (guitars, electronic organs, electronic pianos, and various sound modification devices).

MUS 595 Workshops in Music Education 1-4 hrs.
Intensive, short term courses that address the instructional and pedagogical issues found in today's schools, as well as issues of specific concern for current teachers in the field of music. Topics will be from all areas of music education. Prerequisite: Advisor's consent.

MUS 596 Multi-track Recording 2 hrs.
A course in the 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 technical 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 1-4 hrs.
A program of independent study to provide the unusually qualified student with the opportunity to explore a topic or problem of interest, under the guidance of one of the faculty of the School of Music. The initiative for planning the project must come from the student and must be approved by the faculty member proposed to supervise the study. Prerequisite: Application approved by music advisor.

MUS 599 Projects in Recording Technology 1-4 hrs.
An independent study allowing the unusually qualified student the opportunity to explore a topic or problem in recording technology. Prerequisite: MUS 596 and approval by instructor.

THEATRE

D. Terry Williams, Chair
Randy Bernhard
June Cottrill
James Daniels
Vincent Faust
C. J. Granekaris
Mary Godfrey
John Jensen
David Karsten
Matthew A. Kremser
Tom Lowry
Gwen Nagle
Greg D. Roehrick
Lydia Stillwell
Vern Stillwell
Von H. Washington
Maureen Murphy, Administrative Assistant

The Department of Theatre offers programs leading to the Bachelor of Arts degree. 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 development 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 five faculty-directed productions in the mainstage season, and several productions in the Studio Series all in the Irving S. Gilmore Theatre Complex. Additional plays are presented in the Footlights I and II Series and in the directing classes. All regularly enrolled students in good academic standing are eligible to participate in these productions.

The Department of Theatre is fully accredited by the National Association of Schools of Theatre. The requirements for entrance and for graduation are in accordance with the published guidelines of NAST.

Admission as a Major

Admission to Western Michigan University is granted only by the Office of Admission and Orientation for undergraduate students. Application forms may be obtained by writing to the Office of Admissions and Orientation, 2242 Seibert Administration Building.

Enrollment in a 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 in the Department, or a request may be made for an opportunity to audition prior to making application to the University by obtaining an Audition/Interview Application from the Department 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 major is based upon the student’s capabilities in theatre, as demonstrated by the audition or interview, upon academic abilities reflected in grade point average and various scholastic test scores as they are available and upon letters of recommendation.

The Department of Theatre’s audition/interview program has helped many students make intelligent choices regarding their career options. Further information regarding admission to a theatre curriculum.
may be obtained by writing the academic advisor in 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. Vern Stillwell
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 and complete the required major or minor slip as soon as they begin their course work in theatre.

Transfer Credit
It is department policy to accept no more than 18 hours of transferred credit toward a non-teaching major, 12 hours toward a teaching major, and 9 hours toward a minor.

Baccalaureate Writing Requirement
Students who have chosen the Theatre or Theatre Education major will satisfy the Baccalaureate Writing Requirement by successfully completing the following: THEA 370 Theatre History I; THEA 371 Theatre History II; THEA 372 Music Theatre History and Script Analysis II

Programs
The Department of Theatre offers curricula including two majors, and one minor.

Theatre Major
Bachelor of Arts
57 Credit Hours
This program is designed for the students who want to prepare for graduate study in theatre or advanced, specialized professional training. It offers a program combining a broad background in theatre with a concentration in performance or design and technical production.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs</th>
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<tbody>
<tr>
<td>THEA 120 Stagecraft I</td>
<td>3</td>
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<tr>
<td>THEA 141 Improvisation</td>
<td>3</td>
</tr>
<tr>
<td>THEA 142 Acting I</td>
<td>3</td>
</tr>
<tr>
<td>THEA 170 Script Analysis</td>
<td>3</td>
</tr>
<tr>
<td>THEA 232 Scenic Design</td>
<td>3</td>
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<tr>
<td>THEA 290 Theatre Practicum</td>
<td>6</td>
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<tr>
<td>THEA 331 Costume Design</td>
<td>3</td>
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<tr>
<td>THEA 332 Lighting and Sound Design</td>
<td>3</td>
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<tr>
<td>THEA 351 Directing I</td>
<td>3</td>
</tr>
<tr>
<td>THEA 370 Theatre History I</td>
<td>3</td>
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<tr>
<td>THEA 371 Theatre History II</td>
<td>3</td>
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<tr>
<td>THEA 470 Development of Theatre Art</td>
<td>3</td>
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Required Course of Study in Performance (THR)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs</th>
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<tbody>
<tr>
<td>THEA 220 Stagecraft II</td>
<td>3</td>
</tr>
<tr>
<td>THEA 233 Period Styles of Design</td>
<td>3</td>
</tr>
<tr>
<td>THEA 237 Drafting and Color Media</td>
<td>3</td>
</tr>
<tr>
<td>THEA 420 Advanced Technical Problems</td>
<td>3</td>
</tr>
<tr>
<td>THEA 431 Advanced Design</td>
<td>3</td>
</tr>
<tr>
<td>Electives (Art, Engineering, Consumer Resources, English, Theatre)</td>
<td>3</td>
</tr>
</tbody>
</table>

Suggested Course of Study for Performance Majors (THR)
First Year—Fall (These courses may be taken either semester)
THEA 120, 170, 290
First Year—Winter (These courses may be taken either semester)
THEA 141, 142, 290
Second Year—Fall
THEA 241, 331, 290
Second Year—Winter
THEA 243, 232, ENG 252 (General Education; prerequisite to THEA 370), THEA 290
Third Year—Fall
THEA 341, 351, 370, 290
Third Year—Winter
THEA 332, 342, 352, 371
Fourth Year—Fall
THEA 441, Direct Lab Show (Elective), THEA 290
Fourth Year—Winter
THEA 470, 443
All Performance students following this course of study are reviewed by the Performance faculty. Satisfactory review is necessary for the student to elect upper-level courses in THEA 243, 341, 342, 441, 443

Suggested Course of Study for Design and Technical Production Majors (THD)
First Year—Fall (These courses may be taken either semester)
THEA 120, 170, 290
First Year—Winter (These courses may be taken either semester)
THEA 141, 142, ENG 252, (General Education; prerequisite to THEA 370), THEA 290
Second Year—Fall
THEA 220, 233, 231, 370, 290
Second Year—Winter
THEA 232, 371
All students following this course of study are reviewed by the Design and Technical Production faculty/staff at the end of the second year. Satisfactory review is necessary for the student to elect upper-level courses.
Third Year—Fall
THEA 331, 351, 290
Third Year—Winter
THEA 332, 290, Electives (see list below)
All students following this course of study are reviewed by the Design and Technical Production faculty/staff at the end of the third year to assess progress toward completion of the major and to discuss fourth-year projects and post-graduate planning.
Fourth Year—Fall
THEA 431, Electives, (see list below)
Fourth Year—Winter
THEA 420, 470

Electives: Design and Technical Production students must elect three hours from the following list. The remainder of these courses are strongly recommended as elective to complement your major.

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>ART 140 Studio Experience (2D)</td>
<td>3</td>
</tr>
<tr>
<td>ART 201 Drawing</td>
<td>3</td>
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<tr>
<td>ART 202 Acrylic Painting</td>
<td>3</td>
</tr>
<tr>
<td>ART 208 Watercolor</td>
<td>3</td>
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<tr>
<td>ART 220 History of Art</td>
<td>3</td>
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<tr>
<td>ART 221 History of Art II</td>
<td>3</td>
</tr>
<tr>
<td>CRT 124 Clothing Construction</td>
<td>3</td>
</tr>
</tbody>
</table>

A grade of "C" or better is required in all courses.

Baccalaureate Writing Requirement

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<tr>
<td>THEA 141 Improvisation</td>
<td>3</td>
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<td>THEA 142 Acting I</td>
<td>3</td>
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<td>3</td>
</tr>
<tr>
<td>THEA 351 Directing I</td>
<td>3</td>
</tr>
<tr>
<td>THEA 400 Special Topics (mime, puppetry, story telling)</td>
<td>2</td>
</tr>
<tr>
<td>THEA 471 Methods of Teaching Theatre in High School</td>
<td>3</td>
</tr>
<tr>
<td>THEA 564 Creative Drama</td>
<td>4</td>
</tr>
</tbody>
</table>

A grade of "C" or better is required in all courses.

Theatre Education Major
Bachelor of Arts
39 credit hours
K-12 EMPHASIS
This program is designed for students planning to teach and direct theatre programs in the elementary or secondary schools.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>THEA 120 Stagecraft I</td>
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<td>THEA 141 Improvisation</td>
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<tr>
<td>THEA 142 Acting I</td>
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<tr>
<td>THEA 143 Children's Theatre Tour</td>
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<tr>
<td>THEA 170 Script Analysis</td>
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<tr>
<td>THEA 232 Scenic Design</td>
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<td>THEA 290 Theatre Practicum</td>
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<tr>
<td>THEA 331 Costume Design</td>
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<tr>
<td>THEA 332 Lighting and Sound Design</td>
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<tr>
<td>THEA 351 Directing I</td>
<td>3</td>
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<tr>
<td>THEA 400 Special Topics (mime, puppetry, story telling)</td>
<td>2</td>
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</tbody>
</table>

SECONDARY EDUCATION EMPHASIS
This program is designed for students planning to teach and direct theatre programs in secondary schools.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>THEA 120 Stagecraft I</td>
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<tr>
<td>THEA 141 Improvisation</td>
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<tr>
<td>THEA 142 Acting I</td>
<td>3</td>
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<tr>
<td>THEA 170 Script Analysis</td>
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<td>THEA 232 Scenic Design</td>
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<td>THEA 331 Costume Design</td>
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<td>THEA 332 Lighting and Sound Design</td>
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<tr>
<td>THEA 341 Acting II</td>
<td>3</td>
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<tr>
<td>THEA 351 Directing I</td>
<td>3</td>
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<tr>
<td>THEA 352 Directing II</td>
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</tbody>
</table>
THEA 471 Methods of Teaching Theatre in High School 3

A grade of "C" or better is required in all courses.

Students electing this major are strongly urged to choose a second major to enhance their prospects for employment. Although Theatre Education is a bona fide major, Michigan Secondary Certification does not apply to this program. All teachers seeking certification must meet the requirements of the University, College of Education, and the State Board of Education.

SUGGESTED COURSE OF STUDY FOR THEATRE EDUCATION MAJORS (THN)

First Year—Fall (These courses may be taken either semester)
THEA 120, 170

First Year—Winter
THEA 121

Second Year—Fall
THEA 141, 142

Second Year—Spring
THEA 141, 142

Second Year—Winter
THEA 232, ENGL 252 (General Education; prerequisite to THEA 370)

Third Year—Fall
THEA 351, 370

Third Year—Winter
THEA 332, 352, 371, 471

Fourth Year—Fall
Student Teaching

Fourth Year—Winter
THEA 470

Music Theatre Performer

See "Interdisciplinary Program" in the College of Fine Arts.

Theatre Courses (THEA)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

THEA 100 Introduction to Theatre 3 hrs.
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 an African-American perspective examining the activities and developments of black 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 141 Improvisation 3 hrs.
Techniques of improvisational performing. This course includes spontaneous and planned exercises to evoke and inspire the actor's capacity for inventive imagination and sense of ensemble.

THEA 142 Acting I 3 hrs.
Study and practice of the basic principles of acting.

THEA 143 Children's Theatre Tour 3 hrs.
Development of scripts for K-8 grades through improvisational techniques. Class will tour production second half of course. Prerequisites: THEA 141, THEA 142

THEA 148 Direct Encounter with the Arts 4 hrs.
A course that uses a direct approach to introduce students to their cultural world by guiding them through first-hand experiences in a number of arts: 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 lectures, books, and other required materials. (Lab fee required)

THEA 170 Script Analysis 3 hrs.
The study of selected plays from the standpoint of the theatre artist. Emphasis on thorough examination of the play script preparatory to production.

THEA 220 Stagecraft II 3 hrs.
A course in technical production including the planning and construction of complex stage scenery, costumes and properties, scenery painting, lighting technology, and laboratory work on University Theatre productions. Prerequisite: THEA 120. (Lab fee required for materials.)

THEA 223 Period Styles of Design 3 hrs.
A survey of historical periods and design styles as they are applied to the theatre. The study will include an examination of architecture, costumes, furniture, interiors, lighting, ornament and stage scenery.

THEA 230 Stage Makeup 3 hrs.
Study and practice of the basic principles and techniques of stage makeup.

THEA 231 Drafting and Color Media 3 hrs.
A methods course for beginning students in 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. Prerequisite: THEA 120.

THEA 232 Scenic Design 3 hrs.
A course in scenography covering the design of stage settings and properties expressed through color renderings and/or the scenic model, including further development of skills in drafting for the theatre. Prerequisite: THEA 120.

THEA 241 Voice and Movement 3 hrs.
Development and training of the actor's vocal and physical instrument for theatrical performance. Prerequisites: THEA 141 and THEA 142.

THEA 243 Period Styles of Acting 3 hrs.
Study and practice of acting in plays from selected major periods of theatre activity prior to the twentieth century. Topics may include Greek, commedia dell' arte, Shakespeare, Moliere, Restoration, and examples from eighteenth and nineteenth century drama. Prerequisite: THEA 241.

THEA 260 Arts Management 3 hrs.
A survey of procedures for Arts Management, including ticket office accounting, promotion, marketing, funding and audience development. Prerequisite: Consent of instructor.

THEA 272 Musical Theatre History and Script Analysis I 3 hrs.
An historical overview of the development of musical theatre from its earliest beginnings to 1943. Respective scripts will be analyzed within their historical context.

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. Prerequisite: THEA 120 (THEA 231 recommended).

THEA 332 Lighting and Sound Design 3 hrs.
A course in the design of theatrical lighting and sound and in the practical application of those designs to the stage, including laboratory work on University Theatre productions. Prerequisites: THEA 120, 232, 331.

THEA 341 Acting II 3 hrs.
This course integrates theories and practices of improvisation, Acting I, and Voice and Movement I and II in the process of role study and development. Prerequisite: THEA 243.

THEA 342 Acting III 3 hrs.
The application of role study and analysis to character development in the preparation and performance of scenes from full-length plays. Prerequisite: THEA 341.

THEA 351 Directing I 3 hrs.
Functions of the play director as teacher, interpreter, coordinator, and collaborator. Focus is upon principles and problems of directing on the proscenium stage. Prerequisites: THEA 141, THEA 142, THEA 170, THEA 232.

THEA 352 Directing II 3 hrs.
A continuation of THEA 351. Focus is upon the principles and problems of directing for the non-proscenium stage and expansion of directoral approaches to production. Students prepare and direct scenes and one short play using non-proscenium staging. Prerequisite: THEA 351.

THEA 370 Theatre History I 3 hrs.
Survey of theatre history from the beginnings to 1642. Playwrights, acting styles, theatre production, theatre architecture, and audience taste are studied. Prerequisite: ENGL 252.

THEA 371 Theatre History II 3 hrs.
Survey of theatre history from 1642 to the twentieth century. Playwrights, acting styles, theatre production, theatre architecture and
audience taste are studied. Prerequisite: THEA 370.

THEA 372 Musical Theatre History and Script Analysis II
3 hrs.
A historical overview of the development of musical theatre from 1943 to the present. Representative scripts will be analyzed within their historical context. Prerequisite: THEA 272.

THEA 390 Professional Theatre Internship
3 or 6 hrs.
Advanced theatre majors may receive credit for participating in the Professional Theatre Internship Program with major professional theatres. Students must arrange an internship application and number of credits with the department's Internship Coordinator. A maximum of six credit hours may be accumulated. 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 420 Advanced Technical Problems
3 hrs.
An investigation of the application of modern materials and techniques to the problems of the technical production of scenery, costumes, properties, lighting and/or sound in the theatre. Prerequisites: THEA 220, or 232, or 331, or 332.

THEA 431 Advanced Design
3 hrs.
A course for advanced students in the design of scenery, costumes, properties, and/or lighting; the professional drafting of those designs for technical production, and the preparation of the designer's resume and portfolio. Prerequisites: THEA 232, or THEA 331 or THEA 332.

THEA 441 Acting Studio
3 hrs.
An advanced course in the art of acting with emphasis on the individual needs of the student actor. May be repeated for a maximum of 6 credit hours, only 3 of which are applicable toward major. Prerequisite: THEA 342.

THEA 443 Acting for the Camera
3 hrs.
The study and practice of principles of acting as applied to film and television. Prerequisites: THEA 441.

THEA 470 Development of Theater Art
3 hrs.
A survey of the development of theatre art and its relationship to the concurrent development in other arts. Recommended for students considering graduate work in the fine arts. Prerequisite: THEA 371.

THEA 471 Methods of Teaching Theatre in High School
3 hrs.
Approaches to teaching theatre in secondary schools. Emphasis on curriculum planning, syllabi, lesson plans, texts, relationship between theatre classes and co-curricular productions. Prerequisite: THEA 352 and ED 301 and ED 302.

THEA 490 Individualized Study in Theatre
Variable
Designed to enable upper division theatre majors, or students in special programs, to initiate, plan and execute projects in particular aspects of theatre. Must be planned in collaboration with a member of the theatre faculty who will act as supervising teacher. Not designed to replace other theatre courses. A maximum of six semester hours may be accumulated, though the student may register for a maximum of three credits each time. Projects may involve study and research in an area of special interest, special performances or other creative activities. Prerequisite: Consent of performance or tech/design area, departmental advisor, and departmental chair.

THEA 564 Creative Drama for Children
4 hrs.
Study of the principles, materials and techniques of using informal drama as a classroom activity in elementary grades. Emphasizes theoretical and practical application through the planning and teaching of drama experiences. $15 fee. Prerequisites: EED admission; ART, DANC, MUS, or THEA 148; ART 200; ED 230; DANC 290; MUS 140; consent of instructor.
The College of Health and Human Services provides education, research, and community assistance through its programs. Students receive training and education in direct service roles as well as in policy development, planning, and administration. Students may earn the degrees of Bachelor of Science in occupational therapy, nursing, or employee assistance, Bachelor of Arts or Science in speech pathology and audiology, and Bachelor of Medical Science for physician assistant, Master of Arts in blind rehabilitation and speech pathology and audiology, Master of Science in occupational therapy, and Bachelor and Master of Social Work through their studies.

The School of Community Health Services in the College of Health and Human Services also provides programs in Holistic Health Care, Alcohol and Drug Abuse (both at the graduate level), Gerontology (at the undergraduate and graduate levels), and a concentration in Health Care Administration (graduate level).

Mission
The mission of the College of Health and Human Services at Western Michigan University is to contribute to the improvement of the quality of health and human services in the west Michigan area, the State of Michigan, and the nation as a whole through degree and non-degree instructional programs, research, and community service activities. The mission includes a commitment to foster the development of a comprehensive health and human service care system responsive to the citizens of the state and the nation and which contributes to enhancement of the overall quality of life in general.

Through the qualitative and innovative educational and professional service programs of the College a commitment is being made to the integration of education—within the College, between the College and other colleges of the University, and between the College and its communities, both professional and geographic. The College is further committed to ensuring that its teaching, learning, and discovery processes will focus on preparing people who understand their professional tasks in the context of a concept of quality that embraces the wholeness, challenge, and beauty of life and who will be prepared for leadership in a moral and professional sense, as well as in an organizational sense.

Advising
Students admitted to Western Michigan University must also be admitted formally to the College’s programs through the individual departments, schools, or units. Interested candidates should contact the departments or program directors for further information.

Financial Aid
Scholarships and other forms of financial assistance are available for most programs in the College. Please refer to the section on Scholarships and Financial Aid.
BLIND REHABILITATION

William R. Wiener, Chair
Robert O. LaDuke
David Guth
Paul Ponzichia
Susan Ponzichia
James Leja
Marvin Weessies

The Department of Blind Rehabilitation offers professional education programs in orientation and mobility, and rehabilitation teaching. 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. Through a federal grant the department is able to offer assistance with tuition and provide stipends to qualified students who enter graduate study in either of the specialties. Part of the department’s function is to conduct workshops for professionals working in the field, provide consulting services, and initiate pertinent research.

Blind Rehabilitation Courses (BLRH)

BLRH 301 Visual Impairment and Blindness: An Overview
2 hrs.
The purpose of this course is to provide basic information to students and workers in the health and human service professions so that they will be able to work more effectively with blind individuals. It is also intended for students who may be interested in entering a career in blind rehabilitation and would like to further explore their interest. An overview of visual impairment will be provided with both theoretical and practical components.

Open to Upperclass Students

BLRH 584 Computer Technology in Rehabilitation
3 hrs.
This course is designed to introduce the student to computer technology as it is related to disabled persons. Students will learn the uses, parts, and operating commands of common adaptive computers, as well as the software used with them. In addition, the major adaptive forms of input and output will be investigated.

BLRH 588 Psycho-Social Aspects of Disability
3 hrs.
This course presents an overview of the vocational rehabilitation process and its service delivery systems. Included are the origins of rehabilitation, historical development, legislative history, and philosophy. The social, psychological, educational, recreational, and vocational affects on disabled adults are emphasized.

BlRH 589 Medical and Functional Aspects of Disability
2 hr.
This course presents an interdisciplinary approach to the study of multi-handicapping conditions in rehabilitation. It includes information on the major disabling conditions such as traumatic brain injury, orthopedic, neuromuscular, visual, learning, speech and hearing, cardiovascular, mental and emotional disabilities, and other select disabilities. Emphasis is placed upon cumulative effects of concomitant disabilities with additional emphasis on visual impairment.

BLRH 590 Physiology and Function of the Eye
2 hrs.
The anatomy, structure, and function of the eye. Various eye diseases and malfunctions are studied. The student is given an opportunity to observe all types of eye conditions and eye prostheses.

BLRH 591 Braille and Other Tactual Communication Systems
2 hrs.
Provides students with a basic knowledge of the braille 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
2-3 hrs.
An examination and application of the fundamental principles underlying the acquisition of sensory information by severely visually impaired individuals.

BLRH 596 Introduction to Electronic Travel Aids
1 hrs.
Systematic instruction in use of Fundamental Electronic Travel Aid and Overview of Major Electronic Devices. Prerequisite: BLRH 595.

BLRH 597 Principles and Practices of Low Vision
3 hrs.
This course deals with assessment and training of individuals with functional vision problems. Emphasis is placed on optical, non-optical, and electronic devices which increase visual functioning. This course combines lecture and laboratory experience to present principles of visual rehabilitation along with practice in the application of those principles.

BLRH 599 Gerontology
2 hrs.
The course offers an overview of the characteristics, circumstances, and needs of the aging population of the United States and explores the types of services available to meet their needs. The course will focus upon the demography of the aged, the physiological changes and chronic diseases of aging, the social and economic aspects of aging, the psychological changes which come with age, and a review of the community resources which serve the aged.

BLRH 590 Medical and Functional Aspects of Disability
2 hr.
This course presents an interdisciplinary approach to the study of multi-handicapping conditions in rehabilitation. It includes information on the major disabling conditions such as traumatic brain injury, orthopedic, neuromuscular, visual, learning, speech and hearing, cardiovascular, mental and emotional disabilities, and other select disabilities. Emphasis is placed upon cumulative effects of concomitant disabilities with additional emphasis on visual impairment.

COMMUNITY HEALTH SERVICES

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 at the significant unmet health and human service needs of our 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 and specialty 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.

Community Health Services Courses (CHS)

CHS 530 Seminar in Community Health Services
1-4 hrs.
This course focuses on emerging issues relevant to the certificate programs in the School of Community Health Services.

CHS 598 Readings in Community Health Services
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.

Health and Human Services Courses (HHS)

HHS 110 Introduction to Health and Human Services
3 hrs.
This course provides an overview of the issues, philosophies, political ideologies, economic theories, and American values which have an impact on health and human service delivery. In addition, students will be introduced to the historical development, areas of services, and models of service delivery which are part of health and human services. The course will also provide students with the opportunity of learning about potential careers in the various professions within the field.

HHS 461 Information Systems for Health Care Professionals: Medical Informatics
3 hrs.
This course is intended to assist the health care professional become a more effective care provider and manager through training in the appropriate uses of Medical Informatics. Some of the topics that will be covered include: finding medical information, bibliographic and full-text databases, “expert systems” national networks; acquiring and using office practice systems; patient teaching and decision making; evaluating the usability of new technologies, and telemedicine.
This course provides a descriptive analysis of the organization of the health system. The student who participates can expect to gain an understanding of the structure of health services, as well as the processes of operation of the service system and the ways in which consumers make use of the system. The analysis focuses on the interplay of forces within the system as well as behind the system and its environment.

HHS 512 Principles of Health Finance 3 hrs.
This course is an examination of the principles of finance as applied to health care management. The course will provide a basis for understanding the financial management function in a health care administration environment and on the use of financial information in health care management and decision making. Prerequisite: ECON 517 or equivalent.

HHS 513 Special Studies in Health Care Organization and Delivery 1-4 hrs.
Variable credit course for students to become proficient in specific skills and development course which helps students to become proficient in specific skills and further develop and refine his/her professional skills with the guidance and assistance of those professionals currently working in a particular service area. Credit/no credit only. By permission of instructor.

HHS 514 Basic Principles and Organization of Health Planning 3 hrs.
This course is an introduction to the principles and methods of planning in the health system. It includes a descriptive analysis of the significance of planning effective health care services, alternative planning frameworks, and technical approaches to the planning process. In addition, the course surveys the history of planning in the health systems as well as the current structure arrangements for carrying out planning in the health arena both at the macro and micro levels.

HHS 515 Administrative Functions in the Health Care Setting 3 hrs.
This course focuses on the knowledge and skills necessary for the major administrative functions in health organizations. These include goal setting, decision making, personnel management, data processing, service design, and general principles of financial management.

HHS 530 Clinical Theory for Health and Human Services 1-4 hrs.
This course covers selected theories which form the foundation for health and human service practice in specialized areas. Students are expected to master the content as a basis for building foundation knowledge for clinical practice. Theory of environmental health systems theory for the health setting theories of substance abuse for nursing and medical practice, and community health theory are among the possible areas of study. The specific topics are announced each semester.

HHS 560 Clinical Practice in Selected Health and Human Service Areas 1-4 hrs.
This course covers variable topics in clinical health and human service practice. It is a skills 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: Natural History of an Epidemic 3 hrs.
This course is intended to provide a historical perspective and introduction to the social, psychological, biological, political, economic, ethical, and medical implications of HIV infection and the Acquired Immune Deficiency Syndrome (AIDS). The course will be team 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 care service area. Credit/no credit only. By permission of instructor.

HOL 100 Choices in Living 3 hrs.
The course will focus on the relationship between individual choices, 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 503 Holistic Approaches to Relationships 3 hrs.
The primary purpose of this course is to provide an introduction to the philosophies, theories, and concepts involved in holistic health care. It is meant to serve both as a general education experience for persons wishing to become familiar with holism and essential basic instruction for persons wishing to apply for admission to the graduate specialty program in Holistic Health Care. Prerequisite: Senior or graduate status.

HOL 532 Holistic Approaches to Relationships 3 hrs.
The purpose of this course is to provide an understanding of relationship development. In order to do this, students will acquire knowledge in self-concept formation, social systems theory, values development, and communication models. A major emphasis in the course will be on how to assist people in establishing and maintaining healthy relationships.

HOL 533 Holism and Community 3 hrs.
A course designed to help students better understand the dynamics of community and the potential for holistic growth and health through the investment of self in a common and purposeful experience with others.

HOL 534 Holistic Health and Spirituality 3 hrs.
This course helps students better understand the spiritual dimensions of each individual and the relationship of spirituality to the meaning of health. Various spiritual traditions, philosophies and practices will be explored with the primary emphasis on the implications of these teachings for the course. The course will address the role of spirituality in the therapeutic process for health care professionals and resources available for practitioners and educators. The format for the course will include lecture, discussion, experiential activities and audio/video presentations.

HOL 535 Holistic Approaches to Stress 3 hrs.
This course will focus on the nature, sources and symptoms of stress, and provide a holistic approach for the management of stress. The relationship between stress and personality, lifestyle, health and illness will be explored. In addition, the reasons for management of professional and organizational "burn-out" will be presented.

HOL 536 Counseling Skills for Health Professionals 3 hrs.
This course is an introduction to basic counseling theory and practice for students and professionals working in the health and human services fields such as: nursing, occupational therapy, social work, counseling and other allied health professions. Course participants will receive information on and training in both the content and process of counseling along with training in the various stages of counseling.

HOL 570 Field Education in Holistic Health 1-6 hrs.
This registration is designed to give the student a total learning experience during which the student can apply some of the knowledge and information obtained in the health and human services academic setting and further develop and refine his/her professional skills with the guidance and assistance of those professionals currently working in the health and human service area. Credit/no credit only. Prerequisite: Consent of instructor.

HOL 598 Readings in Holistic Health 1-4 hrs.
This course provides individualized, independent study and 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.
This program is not currently accepting applications.

The Employee Assistance Academic Program is a professional program that prepares the student to implement employee assistance programs in either private or public businesses or institutions. The curriculum is designed to meet the needs of both traditional and non-traditional students, with courses offered both on campus and through the Office of Distance Education. This multi-disciplinary education focuses on community health services, psychology, social work, management, education, and counselor education and counseling psychology, as these areas apply to employee assistance programming. The major consists of 36 credit hours, including 12 hours of field placement. The six substance abuse services courses comprising the curriculum's minor are designed to prepare employee assistance professionals to recognize and treat workplace substance abuse issues and concerns and other counseling techniques.

**ADMISSION**

Students who desire to major in Employee Assistance Programs (EAP) are admitted into the pre-EAP curriculum at the time of admission to the University. Upon successful (2.0 average) completion of PSY 100 General Psychology, PSY 250 Abnormal Psychology, and EAP 220 Introduction to EAPs, EAP Structure and Process in the Worksetting, the student will be admitted into the major. Prior to taking any of the other EAP courses, students must complete the major's prerequisite course, EAP 220 Introduction to EAPs: EAP Structure and Process in the Work Setting.

**FIELD WORK**

In addition to the required course work, students must complete a total of 720 clock hours of Field Placement. The 720 clock hours are broken into two 3 credit hour courses. The first course (EAP 470) is a field based learning experience, assuming responsibility and accountability in work organization and human resource management and EAP administration. The second three credit hour course (EAP 471) assumes responsibilities in EAP direct service, substance abuse and addiction, and personnel psychology and problems. Through these courses, students will be able to actively apply the foundation of their knowledge and skill. There will be no waiver of field experience. To be eligible for field work, students must complete all major and minor courses and have maintained a cumulative grade point average of 2.00 or above, with no grades less than 2.00 in required and prerequisite courses.

Field work is graded on a scale similar to academic coursework. Students are evaluated by a field supervisor who assesses areas of performance and judgment. Each area must be passed at minimum competency to receive academic credit.

**REMEDICATION AND CONTINUANCY 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 will complete at least one required departmental course, and that course only once, to attain a grade of "C" or better.
3. Students who fail to attain a grade of "C" or better in a professional course will be 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. The department may refuse to permit a student to continue in the curriculum if at any time in its discretion 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 Employee Assistance Programs major will satisfy the Baccalaureate Writing Requirement by successfully completing EAP 420 EAP Consultation (3 credits).

**PROGRAM LEADING TO THE BACHELOR OF SCIENCE DEGREE**

Minimum hours required for this curriculum — 122 credit hours

**Course Requirements**

<table>
<thead>
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<th>General Education</th>
<th>Intellectual Skills (if necessary)</th>
<th>Computer Literacy Requirement</th>
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**Electives**

21

Recommended electives include courses from the departments of Education, Psychology, Management, Sociology, Social Work.

**Required Psychology coursework**

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<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>PSY 100 General Psychology</td>
<td>3</td>
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<tr>
<td>PSY 250 Abnormal Psychology</td>
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**Professional Major Curriculum**

36

EAP 220 Introduction to EAPs: EAP Structure and Process in the Work Setting

**Professional Minor Curriculum (Substance Abuse Services)**

18

EAP 225 Legal and Illegal Drugs | 3 |
EAP 325 Substance Abuse Diagnosis and Treatment Planning | 3 |
EAP 326 Substance Abuse Treatment Processes | 3 |
PSY 462 Individual, Group and Family Treatment | 3 |
SWRK 420 Ethical Issues in Employee Assistance | 3 |
CECP 483 Treating Diverse Clients in EAPs | 3 |

**Employee Assistance Programs Courses (EAP)**

EAP 220 Introduction to EAPs: EAP Structure and Process in the Work Setting

3 hrs.

This course serves as the introductory and prerequisite for all courses in the major and is offered on a self-instructional basis. Content focuses on the organization of business and industry (both public and private), the organization of labor and labor unions, variations in labor-management relations across organizational types, discipline in union and non-union settings, grievances and arbitration; collective bargaining; historical overview of health and human services at the workplace, laws/regulations governing workers' compensation, EEO, health and safety, and affirmative action; employee benefits and health financing; career counseling, retirement counseling, and other human services in the workplace structure, and EAP.

EAP 318 EAP Assessment Interviewing

3 hrs.

This course focuses on the theories and methods of assessment interviewing for EAP services. Course content addresses client readiness, relationships, rationality and resources and drug training. Prerequisite: EAP 220.

EAP 319 EAP Administration

3 hrs.

This course is designed to provide an overview of the operational responsibilities within the various program 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 and business trends in EAP profession. An examination of policies, procedures and actual practices are highlighted in this class. Prerequisite: EAP 220.

EAP 420 EAP Consultation

3 hrs.

This course is designed to provide a classroom contained group and individual experience, where the student can learn about the role of the consultant, while using basic skills that the profession demands. Students participate in small and large group experiences, as well as individually tailored exercises, that are aimed at giving them a flavor of the consultant's practice. Major emphasis is placed on written and oral communication skills. This course fulfills the University's Baccalaureate Writing Requirement. Prerequisite: SCH 220.

EAP 470 EAP Field Placement I

6 hrs.

In addition to the required course work, students must complete this 360 clock hour field placement. The field placement is the culmination of the degree and is undertaken only after the completion of all other program courses and permission is granted by the program. The placement is a field based learning experience in assuming responsibilities in Work Organization and Human Resource Management and EAP Administration. Through the field placement, the student will actively apply the foundations of their knowledge and skill. There will be no waiver of field hours. Prerequisite: Successful completion of all EAP course work.

EAP 471 EAP Field Placement II

6 hrs.

This course is a continuation of EAP 470 EAP Field Placement I. In addition to the required course work and EAP 470, students must complete this additional 360 clock hour field placement. The field placement is the culmination of the degree and is undertaken only after the completion of all other program courses and the successful completion of EAP Field Placement I and permission is granted by the program. The placement is a field based learning experience in assuming responsibilities in EAP Direct Services and Substance Abuse and Addictions and Personal Psychology and Problems. Through the field placement the students will actively
Gerontology Courses (GRN)

GRN 490 Field Education in Gerontology 1-4 hrs.
This course is designed to give the student a learning experience during which the student can apply some of the knowledge and information acquired in the gerontology academic setting and further develop and refine his/her professional skills with the guidance and assistance of those professionals currently working in gerontology. The course is repeatable for credit with permission only. Prerequisite: Consent of instructor.

GRN 521 Women and Aging 3 hrs.
An examination of the impact of aging on women, with special emphasis on the diverse experiences, challenges and social and economic conditions of older women. The course will explore the statuses and roles of women in an aging society. Topics to be covered include the views, roles and attitudes toward the aging process and older people held by the world's major religions. The course is cross-listed with FCL 521.

GRN 525 Religion and Aging 3 hrs.
A survey of the views of and attitudes toward the aging process and older people held by the world’s major religions. This course will be taught by faculty from the School of Theology.

GRN 530 Special Topics in Gerontology 1-4 hrs.
Variable topic, variable credit course for students in the gerontology minor. Course topics may include the areas of medical problems, long-term care, nursing, rehabilitation, and the social considerations of aging, health status of women, women as caregivers and retirees. The eligibility rules for this course are determined by the campus gerontology minor advisor. Prerequisite: Consent of advisor.

GRN 534 Survey of Geriatric Medicine 3 hrs.
This course provides an overview and survey of the care of the elderly patient from a medical perspective. The course will be broadly discussed. In addition, the interaction of all of the issues of elderly care will be analyzed.

GRN 544 Aging and Mental Health 3 hrs.
Survey of mental health and mental health treatment problems of older adults. Topics include the psychology of aging and dementia. Consideration will be given to etiologies, current therapies and treatments as well as barriers to treatment in this profession.

GRN 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 ADA 545.

GRN 547 Alzheimer's Disease and Other Dementias 3 hrs.
Dementia is a complex issue compounded by stereotypical views of aging and the aged. This course focuses on the interaction of social, psychological, etiological and epidemiological issues related to dementia together with the problems of diagnosis and treatment. Alzheimer’s Disease, probably the most common cause of dementia, will receive specific attention. The purpose of this course is to help students gain an understanding of dementia as both a social and medical problem.

GRN 598 Readings in Gerontology 1-4 hrs.
Individualized, independent study and reading under guidance of a faculty member. The course addresses topics for investigation and selects the appropriate faculty member to direct the study from the student, with consultation from the advisor. Prerequisite: Consent of instructor and program advisor.

Specialty Program in Alcohol and Drug Abuse

Advisor: Jan Dekker
Room B329, Ellsworth Hall

Western Michigan University offers a program for the professional education of substance abuse specialists through the Graduate Certificate Program in Alcohol and Drug Abuse (SPADA). The department of biological science, counselor education and counseling psychology, sociology, the school of social work, the center for public administration programs, and occupational therapy provide a multidisciplinary and interdisciplinary basis to the certificate program. Courses are planned and taught by faculty from the contributing disciplines.

Students receive preparation for dealing with various aspects of substance abuse, including prevention, community education, treatment and rehabilitation, program management, and evaluation. Program graduates are employed by many public and private organizations, including social agencies, psychological clinics, family counseling services, alcohol and drug councils, hospitals, schools, and industries. Students receive their graduate degrees in their respective disciplines and, upon completion of the eighteen-hour SPADA program requirements, receive a Graduate Certificate in Alcohol and Drug Abuse.

Further details regarding the program are available in the Graduate College Catalog.

Specialty Program in Alcohol and Drug Abuse Courses: ADA

ADA 225 Legal and Illegal Drugs 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 drug use and abuse. An overview of prevention, case finding and treatment strategies are provided. Open only to Employee Assistance Programs majors.

ADA 325 Substance Abuse Diagnosis and Treatment Planning 3 hrs.
This course addresses the diagnostic categories for abuse and dependence across the spectrum of drugs of abuse. Emphasis is placed on individual-specific diagnosis and individual-specific treatment plans. Open only to Employee Assistance Programs majors.

Gerontology Minor

Ellen K. Page-Robin, Director

Gerontology, the study of the aging process and of old age, is offered as a multidisciplinary minor at Western Michigan University. Gerontology includes the study of aging through a disciplinary perspective, as well as the medical specialty known as geriatrics.

Interest in gerontology has burgeoned in the United States with 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 increase an understanding of the older portion of our population and to provide trained personnel to work with older persons.

The minor in gerontology is well designed to complement 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 gerontology are supplemented by departmental readings courses, may be required courses. Courses must be selected not only to vocationally interests in services to others but can also be used for other purposes through field experience. Study of gerontology can lead not only to vocational interests in services to older persons but can also be used for teacher certification. Knowledge and understanding gained from formal courses in gerontology are supplemented by field experience. Study of gerontology can lead not only to vocational interests in services to older persons but can also be used for teacher certification. Knowledge and understanding gained from formal courses in gerontology are supplemented by field experience. Study of gerontology can lead not only to vocational interests in services to older persons but can also be used for teacher certification. Knowledge and understanding gained from formal courses in gerontology are supplemented by field experience. Study of gerontology can lead not only to vocational interests in services to older persons but can also be used for teacher certification. Knowledge and understanding gained from formal courses in gerontology are supplemented by field experience. Study of gerontology can lead not only to vocational interests in services to older persons but can also be used for teacher certification.

The minor consists of twenty or more hours from the courses listed, of which four are required courses. Courses must be selected in consultation with one of the advisors. Exceptions to the program specified, such as the inclusion of independent studies through departmental readings courses, may be made with the approval of the advisor.

Required Courses

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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>SOC 352</td>
<td>Introduction to Social Gerontology</td>
<td>3</td>
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<tr>
<td>FCL 326</td>
<td>Investment Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ECO 313</td>
<td>Poverty and Economic Security</td>
<td>3</td>
</tr>
<tr>
<td>ECO 318</td>
<td>Economics of Medical Care</td>
<td>3</td>
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<tr>
<td>ED 504</td>
<td>Adult Development and Learning</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 434</td>
<td>Biomedical Ethics</td>
<td>4</td>
</tr>
<tr>
<td>CRT 260</td>
<td>Nutrition</td>
<td>3</td>
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<tr>
<td>CRT 266</td>
<td>Food for Man</td>
<td>3</td>
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<tr>
<td>CRT 413</td>
<td>Marriage and Family in Ministry</td>
<td>3</td>
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<tr>
<td>HPER 572</td>
<td>Recreation for the Aged</td>
<td>3</td>
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<tr>
<td>SWRK 540</td>
<td>Field Education in Gerontology</td>
<td>3</td>
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<tr>
<td>OR</td>
<td>A practicum in a participating department</td>
<td>3 or 4</td>
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Electives

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</thead>
<tbody>
<tr>
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<td>Introduction to Social Gerontology</td>
<td>3</td>
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<tr>
<td>ECON 313</td>
<td>Poverty and Economic Security</td>
<td>3</td>
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<tr>
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<td>SWRK 540</td>
<td>Field Education in Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td>A practicum in a participating department</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>
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 to Employee Assistance Programs majors.

ADA 520 Family and Addiction 
3 hrs. 
This course provides students with knowledge on the effects of substance abuse on the family. Included is theory and practice regarding dysfunctional relationships, children of substance abusers, and resulting disorders.

ADA 525 Women and Substance Abuse Treatment 
3 hrs. 
This course provides knowledge on gender specific treatment of substance abusers. This includes physiological aspects of women, as well as cultural aspects and methods to enhance the treatment of women substance abusers.

ADA 530 Clinical Theory in Substance Abuse Services 
1-4 hrs. 
This course covers selected theories which form the foundation for Substance Abuse Services practice in specific areas. Students are expected to master the content as a basis for building foundation knowledge for applied practice. The specific topics are announced with each semester offering.

ADA 535 Drug Testing 
3 hrs. 
This course explores the theory and practice of drug testing and its applications in both clinical practice and employment settings. The spectrum of testing ranges from field detection to gas chromatography. Federal requirements are reviewed for application in both clinical and work settings.

ADA 537 Constructive Confrontation and Referral in Substance Abuse Services 
3 hrs. 
This course 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 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 required to client service. The specific areas are announced with each semester.

ADA 565 Alcohol, Drug Abuse, and Violence 
3 hrs. 
This course provides the student with knowledge of the multiple relationships of substance abuse and violence. Specific foci are the relationships of substance abuse and domestic violence, child abuse, and other assaultive behaviors.

ADA 567 Legal Offenders and Substance Abuse 
3 hrs. 
This course provides the student with knowledge on the theories associating substance abuse with criminal and civil offenses. Specific focus is the treatment strategies and techniques related to the offending population and long-term outcomes of decreased recidivism.

ADA 570 Field Education: Substance Abuse 
1-6 hrs. 
A clinical, prevention, research, or administrative field experience meeting practice requirements in certification of substance abuse services. The field experience involves direct supervision by faculty and clinical supervisors. Graded on a credit/no credit basis.

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 drug prevention 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 599 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.

ADA 566 Criminal Offenders and Substance Abuse 
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 to Employee Assistance Programs majors.

The Professional Curriculum

The Western Michigan University School of Nursing seeks to prepare thoughtful, professional nurses who possess the skills, knowledge, and the 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 the liberal arts, the sciences, and the discipline of nursing. The program emphasizes the development of skills, knowledge, and competencies essential for the scope of clinical judgement that distinguishes the practice of a professional nurse. Concepts of patterning, holism, caring, service to vulnerable groups, and partnership are emphasized.

The Undergraduate Professional Program

This program 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 with 52 credits in nursing and 12 credits in an area of concentration which enables the student to pursue a personal area of interest that augments the professional studies.

A second 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 Registered Nurse track program of studies includes 50-57 articulated credits (29 nursing credits).

Prelicensure Track

ADMISSION

Students interested in the nursing major may be admitted to the prenursing curriculum at two different points. 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 School of Nursing. A final selection will be made by the 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.

The winter semester admission is reserved for current WMU students and transfer students. To be considered, students must hold a cumulative college grade point average of 2.5 or above and have completed specified courses. These courses are indicated by an asterisk in the following section.
CURRICULUM (PRELICENSURE)

Schools of nursing accredited by the National League for Nursing. Students who wish to continue in the program must appeal the Nursing policy in effect at that time. Students who wish to appeal decisions rendered by the School of Nursing Admission and Advancement Committee can do so following the University's General Academic Procedure.

ADVANCEMENT—PRENURSING

To be considered for admission to the Professional Nursing curriculum students must complete the following courses or their equivalent. Students should consult with the nursing advisor to determine the equivalencies.

Bios 191 Introduction to Human Anatomy and Biology 4 hrs.
*Chem 155 Chemistry for Health Professionals I 4 hrs.
Chem 156 Chemistry for Health Professionals II 4 hrs.
NUR 102 Introduction to the Profession of Nursing 2 hrs.
Psy 100 General Psychology 3 hrs.
Soc 200 Principles of Sociology 3 hrs.
*Humanities/Fine Arts (Area I General Education) 3 hrs.
*College-level writing/general education elective 3 hrs.
Non Western World (Area IV General Education) 3 hrs.
*Mathematics or general education elective 3 hrs.

Prenursing students must complete the above courses with a grade of C or above, achieving 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.) The application deadline will be the last Friday in February of each year for students beginning the Prenursing sequence of courses in the fall semester and the last Friday in October for students beginning the Prenursing sequence of courses in the winter semester. Students who fail to achieve a grade of C or higher in any of these courses may only repeat the course 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. Students who wish to appeal this policy or any others in the nursing curriculum must follow the University's General Academic Appeals Procedure.

ADMISSION—PROFESSIONAL NURSING CURRICULUM (PRELICENSURE)

Selection criteria for admission will include individual grades, cumulative grade point average, completion and professional appearance of the application form, and availability of space in nursing courses.

ADVANCEMENT—PROFESSIONAL NURSING CURRICULUM (PRELICENSURE AND RN PROGRESSION TRACKS)

The sequencing of the Professional Nursing curriculum is critical. Students must complete designated 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 Admission and Advancement Committee. Further, students may only repeat such courses once following the initial enrollment. Should a student fail to satisfactorily pass a nursing or nursing support 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 Admission and Advancement 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 Admission and Advancement Committee. Following approval to 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 School of Nursing Admission and Advancement Committee can do so following the University's General Academic Procedure.

CURRICULUM OUTLINE—PRE-LICENSED

127 credit hours

SUPPORTING COURSES — 54 hours

Bios 191 Introduction to Human Anatomy and Biology 4 hrs.
Bios 232 Microbiology and Infectious Diseases 4 hrs.
Bios 240 Human Physiology 4 hrs.
Chem 155 Chemistry for Health Professionals I 4 hrs.
Chem 156 Chemistry for Health Professionals II 4 hrs.
Approved computer usage course or approved elective 3 hrs.
College-level writing course or approved elective 3 hrs.
General Education Area I (Humanities/Fine Arts) 3 hrs.
General Education Area IV (Non-Western World) 3 hrs.
Hist 461 Informatics 3 hrs.
Math 366 Introduction to Statistics 4 hrs.
Psyc 225 Growth, Development, and Aging 3 hrs.
Phil 434 Biomedical Ethics and Society 4 hrs.
Psyc 100 General Psychology 3 hrs.
Soc 200 Principles of Sociology 3 hrs.
Soc 320 Introduction to Social Psychology 3 hrs.
Soc 390 Marriage and Family Relations 3 hrs.
Soc 479 Female/Male Interaction 3 hrs.

OTHER — 9 hours

General Education Area I (Humanities/Fine Arts) 3 hrs.
Math or General Education elective 3 hrs.
General Physical Education elective 2 hrs.

CONCENTRATIONS — 12 hours

Nursing — 52 hours

Nur 102 Introduction to the Profession of Nursing 2 hrs.
Nur 202 Nurses' Role in Primary Health Care I 6 hrs.
Nur 203 Nurses' Role in Primary Health Care II 6 hrs.
Nur 306 Nurses' Role in Facilitating Health and Self-Care 9 hrs.
Nur 307 Nurses' Role in Facilitating Health and Self-Care II 9 hrs.
Nur 410 Nurses' Role in Prevention, Treatment, and Control of Health Problems I 10 hrs.
Nur 411 Nurses' Role in Prevention, Treatment, and Control of Health Problems II 10 hrs.

RN PROGRESSION TRACK

ADMISSION

To be considered for the RN Progression track, applicants must have achieved a 2.5 cumulative grade point average (on a four-point scale) from the associate or diploma degree program from which they graduated, and hold a current Michigan Registered Nurse license.

REQUIREMENTS FOR ENTERING THE PROFESSIONAL NURSING CURRICULUM

Prior to entering the nursing sequence of courses, Registered Nurses must complete the following 18 credit hours of general education/support course work:

Soc 320 Introduction to Social Psychology 3 hrs.
Soc 390 Marriage and Family Relations 3 hrs.
Soc 479 Female/Male Interaction 3 hrs.

APPLICATION TO THE PROFESSIONAL NURSING CURRICULUM

While enrolled in the last six credit hours of the eighteen hours of the "first semester" course work, students must schedule an appointment with a nursing advisor responsible for working with Registered Nurse students. 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 the 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

ACADEMIC CREDIT FROM ASSOCIATE DEGREE OR DIPLOMA PROGRAMS

Registered Nurse students who are admitted to the Prenursing curriculum will be awarded 21-29 credits of social science, natural science, and general education credit. The remaining twenty-nine credits, comprised of nursing course work, will be held in “escrow” until the first nursing course in the RN Progression program of study has been completed with a grade of C or above. These credits will be awarded as follows:

1. Graduates of Michigan community college associate degree programs will be awarded 57 credit hours of articulated credit for prior general education, science, electives, nursing study and clinical experience.
2. Graduates of Michigan diploma programs will be awarded 50 credit hours of articulated credit for prior general education, science, electives, nursing study, and clinical experience.

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1. Graduates of Michigan community college associate degree programs will be awarded 57 credit hours of articulated credit for prior general education, science, electives, nursing study and clinical experience.
2. Graduates of Michigan diploma programs will be awarded 50 credit hours of articulated credit for prior general education, science, electives, nursing study, and clinical experience.
3. Graduates of out-of-state nursing associate degree or diploma programs will be awarded 29 credit hours of credit for prior nursing study and clinical experience. All other non-nursing course work must be evaluated on a course-by-course basis for transfer credit in accordance with University policies.

GRADUATES OF NON-NATIONAL LEAGUE OF NURSING ACCREDITED DIPLOMA AND ASSOCIATE DEGREE PROGRAMS

While not part of the selection criteria, Registered Nurses who have graduated from non-NLN accredited diploma and associate degree programs must complete the NLN Nursing Mobility Profile II prior to the completion of the first nursing course in the RN Progression track.

PROGRESSION—PROFESSIONAL NURSING CURRICULUM (RN PROGRESSION TRACK)

The requirements for advancing to the next nursing course are the same for all students in the Professional Nursing Curriculum. These requirements can be found under the Prelicensure track.

NURSING CURRICULUM OUTLINE—RN PROGRESSION

ASSOCIATE DEGREE GRADUATES AND DIPLOMA DEGREE GRADUATES*

SUPPORTING COURSES — 23 hours

Approved computer usage course or elective

General Education Area IV (Non-Western World) 3

General Education Area IV (Non-Western World) 3

HRS 461 Informatics 3

MATH 366 Introduction to Statistics 4

PHIL 434 Biomedical Ethics and Society 4

SOC 320 Introduction to Social Psychology or

SOC 390 Marriage and Family Relations OR

SOC 479 Female/Male Interaction 3

OTHER — 12 hours

Math or General Education elective 3

Elective

General Education Area I (Humanities/Fine Arts) 3

General Education Area II (Humanities/Fine Arts) 3

CONCENTRATION — 12 hours

NURSING — 23 hours

NUR 204 Nurses’ Role in Primary Health Care (RN) 6

NUR 306 Nurses’ Role in Facilitating Health and Self-Care (RN) 8

NUR 412 Nurses’ Role in Prevention, Treatment, and Control of Health Problems (RN) 8

NUR 530 Special Topics in Nursing 1

*In addition to the courses listed above, diploma degree graduates must also complete the following course work:

College-level writing course or elective 4

SOC 200 Principles of Sociology 3

Concentrations/Academic Minors

The faculty believe that it is important that students be offered the opportunity to explore personal areas of interest which complement their career in nursing. This may be achieved in one of two ways. The first exploratory option for nursing students is an academic minor. Since minors are more credit-hour intensive than areas of concentration, students will be allowed to count required courses in the curriculum toward a minor. Whether students elect to complete an area of concentration or a minor, it must be done with the approval of the nursing advisor. Examples of academic minors that students might pursue include: women’s studies, philosophy, biological sciences, and sociology.

The second option, an area of concentration, has been built into the curriculum. With the approval of a nursing faculty advisor, students will select four courses (12 credit hours) from a specific area of concentration. Nursing students may also choose to design an area of concentration.

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; it is also listed as a prerequisite to all undergraduate sociology courses. Students will not be allowed to count this course as part of the concentration.

Baccalaureate Level Writing Requirement

Students enrolled in the Prelicensure track of the nursing curriculum will satisfy the Baccalaureate Level Writing Requirement by successfully completing NUR 307: Nurses’ Role in Facilitating Self-Care I. Students enrolled in the Registered Nurse 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 Prenursing 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 nursing process, health assessment, healthy communication, and caring. Nursing practice will involve groups and individuals across the life span who are experiencing common health problems. Prerequisite: Admission to the Professional Nursing curriculum.

NUR 203 Nurses’ Role in Primary Health Care II 6 hrs.

A continuation of NUR 202, concepts of partnership, data sources, holistic, and common illnesses/health issues will be introduced. Nursing practice will focus on clients who are experiencing developmental transitions and the related role status. Prerequisite: Completion of NUR 202 with a grade of “C” or better.

NUR 204 Nurses’ Role in Primary Health Care (RN) 6 hrs.

The major focus 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, care, holism, and health and illness will be introduced. The laboratory component will include health assessment and interviewing techniques. Prerequisite: RN licensure and approval of School of Nursing.

NUR 306 Nurses’ Role in Facilitating Health and Self-Care I 9 hrs.

In the first semester of this two-semester sequence, students will focus on concepts of teaching and learning, self-care, wellness, multi-culturalism, and family 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 this second semester of a two-semester sequence, students will focus on the concepts of health care systems, nursing as a profession, nursing case management, collaboration, and negotiation and research. Nursing practice will be provided in settings such as Housing Urban Development (HUD) housing units, group homes and half-way houses, and senior centers. Prerequisites: Completion of NUR 306 with a grade of “C” or better.

NUR 308 Nurses’ Role in Facilitating Health and Self-Care (RN) 8 hrs.

This course places major emphasis on the concept of forming partnerships that facilitate health in families, populations, and communities. The laboratory component of this course will include comprehensive physical assessment of children and adults, information technology, group dynamics, and counseling techniques. Prerequisite: RN licensure and completion of NUR 204 with a grade of “C” or better.

NUR 410 Nurses’ Role in Prevention, Treatment, and Control of Health Problems I 10 hrs.

This first course in a two-course sequence places major emphasis on the concepts of chronicity, nursing research, and at-risk populations. In the first semester the specific content will include: crisis interventions and mental health concepts with adolescents and young adults; the investigation of relationships between socioeconomic status and the health of a community; and the use of automated data bases for epidemiologic and outcome assessment purposes. Prerequisite: Completion of NUR 308 with a grade of “C” or better.

NUR 411 Nurses’ Role in Prevention, Treatment, and Control of Health Problems II 10 hrs.

This is the second course in a sequence of courses. The course content will focus on the etiology and control of major health problems, conflict resolution; organization, leadership and management, and nursing research. Nursing practice will be designed to continue the development of case management skills with groups and individuals in community and institutional settings. Prerequisite: Completion of NUR 410 with a grade of “C” or better.
OCCUPATIONAL THERAPY

Mary Ann Bush
Richard Cooper
Sandra Edwards
Debra L. Hazel
Barbara Hemphill
Shirley Lukens
Susan Meyers
Cindee Peterson
Joye Williams
Dean Tyndall

The Undergraduate Professional Program

Bachelor of Science

SPECIAL NOTE: The Department will be submitting a proposal to change the admission requirements and criteria effective for the Fall 1997 admission. Applicants are advised to contact the College of Health and Human Services advisor for updated information on the admission process.

The undergraduate professional curriculum of occupational therapy is designed to prepare the student to treat clients with various disabilities and to be eligible for certification as an occupational therapist, following the successful completion of a Bachelor of Science degree.

Successful applicants are admitted at junior status or above. The program can be completed in four semesters, plus the required six months of fieldwork. The Baccalaureate degree in occupational therapy requires 128 semester hours with 51 semester hours of professional coursework in the occupational therapy curriculum.

Accreditation

The Occupational Therapy program is accredited by the Accreditation Council for Occupational Therapy Education. Accreditation Department, The American Occupational Therapy Association, Inc., 4720 Montgomery Lane, P.O. Box 31220, Bethesda, Maryland 20824-1220. Graduates of the program will be eligible to sit for the national certification examination for the occupational therapist administered by the American Occupational Therapy Certification Board. 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 AOTCB Certification Examination.

The Professional Curriculum

The professional curriculum uses a holistic and integrated approach in developing those characteristics identified for the graduated student. Key to the educational philosophy of the department is the developmental sequencing of content and learning experiences related to professionalism, personal environment, and the occupational therapy process. The implementation of the philosophy into course design results in the inclusion of most learning objectives into several courses in a simple to complex pattern. This design maximizes the development of clinical reasoning skills.

Admission Requirements

The Occupational Therapy Department has established a maximum enrollment number for each admission period. Consequently, this department has established an admission selection procedure. Students interested in admission are encouraged to contact the College of Health and Human Services advisor well in advance of expected admission. Imposed deadlines are strictly enforced. The Pre-Occupational Therapy Curriculum is designed for students considering Occupational Therapy as a professional choice.

Minimum criteria for admission consideration to the professional program includes:

1. Admission to the Western Michigan University Pre-Occupational Therapy Curriculum.
2. Junior status (at least 56 semester hours at the time of enrollment in the professional occupational therapy curriculum).
3. Completion of all Intellectual Skills Requirements.
4. Satisfactory completion of all prerequisite course work:
   - General or Introductory Psychology ... 3 hrs.
   - Behavior Sciences (Psychology, Sociology, or Anthropology) ... 6 hrs.
   - Basic Course in Biological Science ... 3 hrs.
   - Normal Growth and Development Covering the Life Span ... 3 hrs.
   - English Composition ... 3 hrs.
   - Human Anatomy with Lab ... 3-4 hrs.
   - Human Physiology with Lab ... 3-4 hrs.
   - Abnormal Psychology ... 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. The courses required for Pre-Occupational Therapy students will meet department admission criteria, and/or university general education requirements and/or elective credit towards graduation by students who are not admitted into the professional program.
6. 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.
7. Documentation of a minimum of 3 hours of contact with one or more occupational therapists. Extra credit towards admission will be granted for contact hours, beyond the 3 hour minimum, with occupational therapists working in a variety of treatment settings.
8. 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 for application information.

Every department shall provide systematic procedures to express their views on matters of program curriculum.

Program leading to the Bachelor of Science Degree

Minimum hours required for this curriculum .................................................. 128

General Education Requirements .................................................. 35

Computer Literacy

Physical Education Requirements .............................................. 2

Courses Required for Admission Consideration:

1. Behavioral Sciences (Psychology, Sociology or Anthropology) .................. 9
   (General Psychology required)
2. Basic course in Biological Sciences (BIOS 150 or BIOS 112 or equivalent) 3-4
3. Nutrition and Development (covering the life span, OT 225 or equivalent) .... 3
4. English Composition .................................................. 3
5. Satisfactory completion of all Intellectual Skills Requirements

Pre-Professional Courses: (Prerequisite to related courses in Occupational Therapy theory and techniques)

1. Human Anatomy with lab (BIOS 211 or equivalent) .............................. 3-4
2. Human Physiology with lab (BIOS 240 or equivalent) .............................. 3-4
3. Abnormal Psychology (PSY 250 or equivalent) ......................................... 3

Professional Curriculum .................................................. 51

OT 202 Orientation to Occupational Therapy .............................................. 2
OT 303 Professional Language and Interaction ........................................... 3
OT 312 Adapted Activities .................................................. 4
OT 321 Integrated Medical Sciences .................................................. 6
OT 335 Assessment Principles and Instruments .......................................... 3
OT 344 Disabling Conditions .................................................. 4
OT 351 Introduction to Theory and Treatment Process I ................................. 3
OT 352 Introduction to Theory and Treatment Processes II ............................. 2
OT 355 Life Skills and Personal/Environmental Adaptations ............................. 4
OT 443 Occupational Therapy Practice I ............................................... 3
OT 451 Applied Theory and Treatment Process ........................................... 2
OT 453 Occupational Therapy Practice II .................................................. 3
OT 460 Research Methodology .................................................. 3
OT 480 Administration-Supervision-Consultation ......................................... 3
OT 490 OT Fieldwork I .......................................................... 3
OT 491 OT Fieldwork II .......................................................... 3

SEQUENCING OF COURSES

Courses in the professional program are completed in a sequential pattern toward developing complex clinical problem solving skills. The courses are not designed to stand alone, but to build upon the knowledge base from previous semesters.

The prerequisite courses build a solid knowledge base of biological and behavioral sciences. The first semester in the professional program centers on human function, pathology, dysfunction and basic problem solving. Students also learn the history of the profession and current practice roles of therapists.

The second semester centers on developing skill in activity analysis, the role of activity in occupational therapy treatment, formal assessments used by therapists, introduction to treatment theories and techniques, and constructing appropriate treatment plans.

The third semester centers on additional treatment techniques used in therapy administration of clinical programs, and a clinical treatment experience with clients in the on-campus occupational therapy clinic.

The fourth semester of the professional program centers on a clinical treatment experience with clients in clinical programs in the Kalamazoo area and developing an appreciation for the role of research in validating occupational therapy treatment and theory.

The fifth semester centers entirely on the completion of six months, full-time, fieldwork experience as a student therapist in two clinical practice sites (one being a medical model site and one being a community model site). The University utilizes fieldwork sites primarily in Michigan and the Midwest states with some sites throughout the United States.

PROFESSIONAL PROGRAM COURSE TRACKS

The Occupational Therapy Department has in operation a course tracking system designed to assure each student of a seat in appropriate professional OT courses. Any variation from this plan must be approved by the department.

First Semester

OT 202, OT 303, OT 321, OT 344

Second Semester

OT 312, OT 335, OT 351, OT 355

Third Semester

OT 352, OT 443, OT 451, OT 480

Fourth Semester

OT 453, OT 460

FIELD WORK

Students are required to successfully complete two three-month fieldwork experiences. One is scheduled in a medical environment (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 national AOTA certification examination, students should avoid selecting 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 coursework. Students 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 shall be completed within 24 months following completion of academic preparation.

An optional third fieldwork experience of variable duration, may be scheduled pending availability of clinical opportunities. This experience is highly recommended. It usually does not interfere with graduation dates or eligibility for the AOTA examination.

REMEDIAITON AND CONTINUANCE 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. 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.

FIELDWORK REMEDIATION AND CONTINUANCE POLICY

1. Successful completion of OT 443 is a prerequisite for OT 453.
2. Students who receive a failing grade in fieldwork level I (OT 443, OT 453) or level II (OT 490, OT 491) are subject to the academic policy for remediation and continuance, and will repeat the experience in a similar setting.
3. Students who fail to attain a grade of “C” or better in all prerequisite professional coursework is required for OT 491.
4. Successful completion of all undergraduate coursework for graduation is required for OT 491.
5. Students who fail fieldwork, or who are asked to withdraw, are subject to review in accordance with the departmental remediation and continuance policy.

MISCELLANEOUS

The following course is offered on a credit/no credit basis only. OT 356. Materials fees are required for some courses.

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Occupational Therapy major will satisfy the Baccalaureate Writing Requirement by successfully completing the following courses:

OT 303 Professional Language and Interaction ........................................... 3
OT 312 Adapted Activities .................................................. 4
OT 355 Life Skills and Personal/Environmental Adaptations ............................. 4
OT 443 Practicum I .......................................................... 3

The Combined Bachelor of Science and Master of Science Program (BS/MS)

This combined BS/MS program is designed to facilitate movement of exceptional undergraduate students into the Graduate Program. Outstanding undergraduates, who were admitted to the undergraduate professional program through the established admission process, are eligible to apply.

This program is designed to prepare the student to treat clients with various disabilities, and to be eligible for certification by the AOTA as an occupational therapist after successfully completing both the Bachelor of Science and Master of Science Degrees. Under University regulation, both degrees are awarded simultaneously. This program can be completed in twenty-four to
twenty-eight months, depending on the admission date and includes at least one Spring and Summer session. This program is accredited by the Accreditation Council for Occupational Therapy Education. Graduates are qualified to take the American Occupational Therapy Certification Board Examination and are eligible to apply for licensure or registration in those states regulating occupational therapy practice.

The Professional Curriculum

The professional curriculum uses a holistic and integrated approach in developing those characteristics identified for the graduated student. Key to the educational philosophy of the department is the developmental sequencing of content and learning experiences related to professionalism, personal environment, and the occupational therapy process. The implementation of this philosophy into course design results in the inclusion of most learning objectives into several courses in a simple to complex pattern. This design maximizes the development of clinical reasoning skills.

Admission Requirements

Students are encouraged to make a declaration of intent before formal application. Formal application is due during the second semester in the undergraduate professional curriculum. Students will be admitted in the first semester of their senior year as space is available.

To be eligible for regular admission to this program, each applicant must present evidence of the following criteria:
1. Completion of one year in the undergraduate professional curriculum
2. A grade point average of 3.0 or better
3. Scores on the Graduate Record Examination General (Aptitude) Test
4. Positive Faculty recommendation
5. Completion of the Graduate College Application.

Because admission is competitive, the academic criteria listed above should be considered as minimum standards. Selection is based upon an equal weighting combination of cumulative grade point average and Graduate Record Examination scores and available space in the graduate program.

Program Requirements

Completion of 122 semester hours of undergraduate courses including the following 45 semester hours of professional occupational therapy education which includes six months of full-time fieldwork.

OT 202 Orientation to Occupational Therapy 2 hrs.
OT 303 Professional Language and Interaction 3 hrs.
OT 312 Adapted Activities 4 hrs.
OT 321 Integrated Medical Sciences 6 hrs.
OT 335 Assessment Principles and Instruments 3 hrs.
OT 344 Disabling Conditions 4 hrs.
OT 351 Introduction to Theory and Treatment Process 2 hrs.
OT 352 Introduction to Theory and Treatment Process 2 hrs.
OT 355 Life Skills and Personal/Environmental Adaptations 4 hrs.
OT 443 Occupational Therapy Practicum I 3 hrs.

OT 451 Applied Theory and Treatment Process 2 hrs.
OT 453 Occupational Therapy Practicum II 3 hrs.
OT 490 Field Work Level I 3 hrs.
OT 491 Field Work Level II 3 hrs.

The forty-five semester hour sequence of undergraduate professional education is designed to prepare the student to treat clients with various disabilities, and to be eligible for certification.

The graduate component includes the completion of 30 semester hours of graduate courses which include the following:

OT 610 Professional Issues 3 hrs.
OT 633 Administration of Occupational Therapy 3 hrs.
OT 640 Theory in Occupational Therapy 3 hrs.
OT 660 Research in Occupational Therapy 3 hrs.
OT 686 Graduate Seminar 3 hrs.
Electives 6 hrs.
OT 700 Thesis 3 hrs.
OR
OT 710 Independent Research 6 hrs.

This thirty-hour graduate component is designed to enhance growth in professional leadership potential by developing skills in administration, program development, theories of practice, professional issue resolution and research.

Please read the WMU Graduate College Bulletin for information on other requirements for completion of a masters degree.

SEQUENCE OF COURSES

Courses in the professional program are completed in a sequential pattern toward developing complex clinical problem solving skills. The courses are not designed to stand alone, but to build upon the knowledge base from previous semesters.

The prerequisite courses build a solid knowledge base in the biological and behavioral sciences. The first semester centers on human function, pathology, dysfunction and basic problem solving. Students also learn the history of the profession and current practice roles of therapists. The second semester centers on developing skills in activity analysis, the role of activity in occupational therapy, treatment, formal assessments used by therapists, an introduction to treatment theory and techniques used, and constructing appropriate treatment plans. The third semester centers on additional treatment techniques used in therapy, administration of clinical programs, and a clinical treatment experience with clients in the on-campus occupational therapy clinic. The fourth semester of the professional program centers on a clinical treatment experience with clients in a similar setting.

The second semester centers on developing skills in activity analysis, the role of activity in occupational therapy, treatment, formal assessments used by therapists, an introduction to treatment theory and techniques used, and constructing appropriate treatment plans. The third semester centers on additional treatment techniques used in therapy, administration of clinical programs, and a clinical treatment experience with clients in the on-campus occupational therapy clinic. The fourth semester of the professional program centers on a clinical treatment experience with clients in a similar setting.

The summer session, the student enrolls in OT 490 and 491 for the required six months of full-time fieldwork experience as a student therapist in two clinical practice sites (one being a medical model site and one being a community model site). Western Michigan University utilizes fieldwork sites primarily in Michigan and the Midwest states with some sites throughout the United States.

A summary of the course sequence for the BS/MS student may be obtained from the department advisor.

An overall grade point average of at least 3.0 (A=4.0) is required in the graduate program. No undergraduate credit is computed into the graduate grade point average. Honor point deficiencies acquired in credits earned at Western Michigan University cannot be made up by credits earned at another university.

REMEDICATION AND CONTINUANCE POLICY

1. Students will complete all required departmental courses and 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. 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.

FIELDWORK REMEDIATION AND CONTINUANCE POLICY

1. Successful completion of OT 443 is a prerequisite for OT 453.
2. Students who receive a failing grade in fieldwork level I (OT 443, OT 453) or level II (OT 490, OT 491) are subject to the academic policy for remediation and continuance, and will repeat the experience in a similar setting.
3. Successful completion of OT 453 and all prerequisite professional and coursework is required for OT 490.
4. Successful completion of all undergraduate coursework for graduation is required for OT 491.
5. Students who fail fieldwork, or who are asked to withdraw, are subject to review in accordance with the departmental remediation and continuance policy.
6. To ensure continuity of application of academic concepts, all fieldwork shall be completed within 24 months following completion of academic preparation.

Occupational Therapy Courses (OT)

OT 202 Orientation to Occupational Therapy 2 hrs.
Orientation to the profession of occupational therapy. Will include the history of the profession, current professional roles, issues and trends in the field.
OT 225 Growth, Development, and Aging
3 hrs. Fall, Winter
A study of physical, mental, emotional, and social patterns of growth, development, and aging. Aspects to be given special emphasis for the occupational therapy student will be motor development, physiology of aging, growth patterns, and functional development in any of the above aspects. Prerequisite: Pre-OT or nursing.

OT 303 Professional Language and Interaction
3 hrs.
A basic course which includes medical terminology, techniques of information gathering, and professional interpersonal communications. Prerequisite: OT Major.

OT 312 Adapted Activities
4 hrs.
Includes basic tool use, instruction in core craft and group activities including leather, ceramics, copper tooling, recreation, games and music. Emphasis placed on activity analysis and performance processes. Class demonstration and the application of selected activities to community groups is required. Prerequisite: OT major.

OT 321 Integrated Medical Sciences
6 hrs.
An integrated study of human systems as they relate to normal and abnormal functional performance. Emphasis will be placed on the musculo-skeletal, neurological, and neuro-muscular systems. Prerequisite: Anatomy, Physiology, and OT major.

OT 335 Assessment Principles and Instruments
3 hrs.
This course will cover core components of assessment including process and procedures and testing situations. An integrated approach to psychological and physiological assessments throughout the life span is included. Students will learn the evaluative process, how to critique instruments and the research methodology used to develop assessments. Selected assessments are covered including their administration and interpretation. Prerequisite: OT 321.

OT 336 Independent Practicum
2 hrs.
Participation in a health service or agency to provide experience with hospital procedure and an orientation to patient groups. A daily log is required. Student must submit a proposal for the course for departmental approval prior to registration. Prerequisite: OT major.

OT 344 Disabling Conditions
4 hours
This course will introduce pathogenic processes and their impact upon the total individual. Prerequisite: OT 321 or concurrent; PSY 250.

OT 351 Introduction to Theory and Treatment Process I
3 hrs.
This course is designed to introduce the student to the development of a theory and demonstrate the relationships of theory to current professional practice. Students will learn and apply occupational therapy theory, assessments, and techniques to treatment programs for clients with physical dysfunction accompanied by psychosocial problems. Emphasis is on an integrative approach and holistic intervention. Prerequisite: OT 344, OT 335, or concurrent.

OT 352 Introduction to Theory and Treatment Process II
2 hrs.
Companion course to Introduction to Theory and Treatment Process I. Application of occupational therapy theory, assessment, and treatment programs for clients with psychosocial problems accompanied by physical dysfunction. Emphasis is on the integrative and holistic approach to client intervention. Prerequisite: OT 351 or concurrent.

OT 355 Life Skills and Personal/Environmental Adaptations
4 hrs.
Examination of the role of occupational therapists regarding life skills. Students will learn to design or adapt the physical environment to assist self-care, work, and play/leisure performance by using orthotics, prosthetics, and assistive/adaptive devices. Prerequisite: OT 312, OT 335, OT 351, or concurrent.

OT 436 Independent Study in Occupational Therapy
2-4 hrs.
Designed to allow outstanding students to work independently under faculty supervision. Consent of department chair.

OT 443 Occupational Therapy Practicum I
3 hrs.
This course is designed to provide clinical experience in client assessment, the development of treatment plans, the implementation of treatment, and the evaluation of the client's progress related to the treatment plan. Emphasis is directly related to the content in OT 351 and OT 352. Prerequisite: OT OT 335, OT 351, OT 355; OT 352 or concurrent.

OT 451 Applied Theory and Treatment Process
2 hrs.
This course is designed to provide the student with occupational therapy theory and principles related to community practice. The content will include group dynamics, social and work adjustment, and pre-vocational assessment. Prerequisite: OT 335.

OT 453 Occupational Therapy Practicum II
3 hrs.
This course is designed to provide clinical experience in community agencies in order to develop skill in the utilization of assessments, the development of treatment plans, the implementation of treatment plans, and the evaluation of the patient's growth related to the treatment plan. Emphasis is directly related to the content of OT 451. Prerequisite: OT 353, OT 451.

OT 460 Research Methodology
3 hrs.
A course designed to utilize methodologies of research and apply them to occupational therapy practice. Students will critically analyze research literature and will write a research proposal. Prerequisite: Senior status, and OT 303.

OT 470 Functioning of the Older Adult
3 hrs. Fall, Winter
The objective of this course is to provide understanding of the basic psychological and physiological changes characteristic of human aging and pathological conditions which have consequences for function and behavior.

OT 480 Administration-Supervision-Consultation
3 hrs.
This course will cover the basic principles of administration in Occupational Therapy including planning, organizing, staffing, directing, and controlling. Administrative skills including leadership, decision-making and professional writing; health care delivery systems, and the consulting process and its relationship to the delivery of OT services will be covered. Prerequisite: Senior status and OT major.

OT 490 Field Work Level II
3 hrs.
A three-month affiliation in hospitals or community agencies providing the student experience in designated areas of occupational therapy. Departmental consent only. Prerequisite: Completion of all basic professional course work and prerequisite courses.

OT 491 Field Work Level III
3 hrs.
A three-month affiliation in hospitals or community agencies providing the student experience in designated areas of occupational therapy. Prerequisite: Graduate Students—completion of all basic professional course work and prerequisite courses; undergraduate students—completion of all academic work.

OT 492 Field Work Level IV
2-3 hrs.
An optional three-month affiliation in hospitals or agencies providing the student experience in designated area of occupational therapy. Prerequisites: OT 490, OT 491.

OT 530 Sensory Integration and The Child
3 hrs.
Study of theoretical principles and their application to evaluation and treatment of the child with sensory integration dysfunction. Students will observe and participate in screening and evaluation of children, and they will design treatment plans for selected clients. Prerequisites: OT 335, OT 351; OT 353 or concurrent; or OTR, RPT, or consent.

OT 597 Studies in Occupational Therapy
3 hrs.
Topics considered will vary from semester to semester. Maybe repeated for credit. Prerequisites: Advanced OT major or departmental permission.
PHYSICIAN ASSISTANT

William H. Fenn, Chair
James B. Hammond
Aileen Lawton-Wendy
Stephen Bartholomew
Samuel G. Shorter

admission requirements. If approved, these requirements will be published in the Physician Assistant Program newsletter for Fall 1996 entering class. Applicants are informed to contact the department for updated information.

The Physician Assistant Program in the Physician Assistant Department is a professional program which educates physicians assistants to primary care physicians (PA). PAs perform many of the tasks required in a medical practice and free the physician to spend more time on more difficult and complex matters of medicine. Through the appropriate use of a physician/physician assistant team, patients receive more individualized quality care.

Graduates of the program are awarded the Bachelor of Science in Medicine degree and are eligible to sit for the National Certifying Examination for Physician Assistants administered by the National Commission on Certification of Physician Assistants (NCCPA). Western's Physician Assistant Program has been fully accredited by the Committee on Allied Health Education and Accreditation (CAHEA) since its inception. A major goal of the Program is to increase the availability of health care services to underserved areas. As a member of the health care team, the physician assistant works with the supervision and direction of a licensed physician. Together they form a team to better meet the time constraints and needs of the patients. To accomplish this, students are provided a wide variety of opportunities and learn to (1) obtain comprehensive health histories; (2) perform complete physical examinations; (3) record data; (4) perform diagnostic tests; (5) interpret data received from diagnostic laboratory tests; (6) prepare diagnosis and treatment plans; (7) perform certain treatment procedures and (8) make appropriate clinical responses to commonly encountered emergency care situations.

ADMISSION REQUIREMENTS

The PA Program has the following requirements for application to the professional curriculum. No applicant missing any of these requirements will be considered for admission.

1. A minimum of 1,000 hours (six months) of health care experience (with direct patient contact). Many types of experiences are acceptable. The program staff will answer questions about applicability of health care experiences.
2. A minimum of sixty (60) semester hours of college credits, including CHEM 101 and CHEM 120 or either CHEM 365 or CHEM 363-361 or equivalents.
3. University requirements for admission.

RECOMMENDED

1. Life science credits in the range of 15-20 semester hours, including the Chemistry requirements.
2. Humanities, social and behavioral sciences and the arts are positive selection factors.

APPLICATION PROCEDURE

Admission to the professional curriculum of the PA Program requires a separate application. Application forms may be obtained from the PA Office in A311 Ellsworth Hall.

SELECTION PROCESS

The selection committee has established the following policies for selection to begin in the junior year. The three-step process consists of:

1. Review of application data: each application is reviewed by at least three members of the selection committee; candidates are selected for interviews.
2. Interviews: selected candidates are scheduled for separate required interviews. No applicant is admitted without an interview.
3. Final selection: the selection committee reviews all the data including the results of the interviews and recommends candidates for admission.

Students are admitted to the program at the beginning of the junior (Pre-Clinical) academic year each fall semester. Because of the keen competition for class positions, priority is given to those candidates who present the best overall profile. Selection is based on all aspects of the academic record, assessment of previous health care experience, evidence of good character, and the possession of those attitudes and aptitudes required for the effective health care professional.

THE CURRICULUM

This upper-division curriculum is divided into two parts. The first year is devoted to the basic and applied medical sciences upon which the theoretical concepts of disease can be built. Subjects covered in this portion include anatomy, biochemistry, pharmacology, microbiology, and pathophysiology. During this time, the student will be trained in the clinical areas such as interviewing, history-taking and physical diagnosis, as well as specific areas of medicine.

During the senior or clinical year, each senior PA student enrolls in seven required clinical rotations including: community and mental health, family medicine, internal medicine, surgery, obstetrics and gynecology, pediatrics, and an elective clerkship.

BACCALAUREATE WRITING REQUIREMENT

Students who have chosen the Physician Assistant Program will satisfy the Baccalaureate Writing Requirement by successfully completing the following courses:

**FALL SEMESTER**

- MDSC 301 Medical Terminology 1 hr.
- MDSC 302 General Medicine 3
- MDSC 303 Pathogen Microbiology 2
- MDSC 350 Medical Terminology 1 hr.
- MDSC 304 Patient Evaluation I 3
- MDSC 305 Patient Evaluation II 1
- MDSC 334 Patient Evaluation IV 1
- MDSC 311 Gross Human Anatomy 5
- MDSC 312 Community and Mental Health 1
- MDSC 409 Allergy 1
- MDSC 413 Dermatology 1
- MDSC 415 Emergency Medicine Lectures 3
- MDSC 334 Patient Evaluation IV 1
- MDSC 312 Community and Mental Health 1
- MDSC 415 Emergency Medicine Lectures 3

**WINTER SEMESTER**

- MDSC 303 PA History and Legislation Seminar 1
- MDSC 314 Patient Evaluation II 3
- MDSC 317 Internal Medicine I 4
- MDSC 306 Pathophysiology 3
- DSC 410 Pharmacology I for P.A.'s 4
- MDSC 409 Allergy 1
- MDSC 413 Dermatology 1

**SPRING SESSION**

- MDSC 324 Patient Evaluation IV 1
- MDSC 337 Pediatrics 3
- MDSC 302 General Surgery 2
- MDSC 327 Internal Medicine II 3
- MDSC 312 Community and Mental Health 1
- MDSC 412 Pharmacology II for P.A.'s 3
- MDSC 415 Emergency Medicine Lectures 3

**SENIOR (CLINICAL) YEAR**

**FALL SEMESTER, WINTER SEMESTER, AND SPRING SESSION**

- MDSC 307 Technology of Patient Counseling 1
- MDSC 422 Pediatrics Clerkship 4
- MDSC 432 Pediatrics Seminar 2
- MDSC 423 Obstetrics and Gynecology Clerkship 1
- MDSC 433 Obstetrics and Gynecology Seminar 2
- MDSC 424 Internal Medicine Clerkship 4
- MDSC 434 Internal Medicine Seminar 2
- MDSC 425 Surgery Clerkship 4
- MDSC 435 Surgery Seminar 2
- MDSC 426 Community and Mental Health Clerkship 4
- MDSC 436 Community and Mental Health Seminar 2
- MDSC 428 Elective Clerkship 4
- MDSC 438 Elective Seminar 2

**SUMMER SESSION**

- MDSC 427 Family Medicine Preceptorship 6
- MDSC 437 Family Medicine Seminar 2

**PHYSICIAN ASSISTANT 277**

**WINTER SEMESTER**

- MDSC 303 PA History and Legislation Seminar 1
- MDSC 314 Patient Evaluation II 3
- MDSC 317 Internal Medicine I 4
- MDSC 306 Pathophysiology 3
- DSC 410 Pharmacology I for P.A.'s 4
- MDSC 409 Allergy 1
- MDSC 413 Dermatology 1

**SPRING SESSION**

- MDSC 324 Patient Evaluation IV 1
- MDSC 337 Pediatrics 3
- MDSC 302 General Surgery 2
- MDSC 327 Internal Medicine II 3
- MDSC 312 Community and Mental Health 1
- MDSC 412 Pharmacology II for P.A.'s 3
- MDSC 415 Emergency Medicine Lectures 3

**SENIOR (CLINICAL) YEAR**

**FALL SEMESTER, WINTER SEMESTER, AND SPRING SESSION**

- MDSC 307 Technology of Patient Counseling 1
- MDSC 422 Pediatrics Clerkship 4
- MDSC 432 Pediatrics Seminar 2
- MDSC 423 Obstetrics and Gynecology Clerkship 1
- MDSC 433 Obstetrics and Gynecology Seminar 2
- MDSC 424 Internal Medicine Clerkship 4
- MDSC 434 Internal Medicine Seminar 2
- MDSC 425 Surgery Clerkship 4
- MDSC 435 Surgery Seminar 2
- MDSC 426 Community and Mental Health Clerkship 4
- MDSC 436 Community and Mental Health Seminar 2
- MDSC 428 Elective Clerkship 4
- MDSC 438 Elective Seminar 2

**SUMMER SESSION**

- MDSC 427 Family Medicine Preceptorship 6
- MDSC 437 Family Medicine Seminar 2

**SPECIAL NOTE**

Fall 1996 entering class. Potential applicants are informed to contact the department for updated information.

**APPLYING TO THE PROGRAM**

Application forms may be obtained from the PA Office in A311 Ellsworth Hall.
MDSC 304 Patient Evaluation I
3 hrs.
This is the first in a series of four courses presented sequentially through the pre-clinical year. It provides instruction in the systematic evaluation of patient problems through history taking and physical examination. Lectures, demonstrations, student examination of patients, and critique of those examinations are included among the instructional techniques. Emphasis is placed upon techniques of interviewing and physical examination that insure the acquisition of an accurate data base that is essential for diagnosis and the preparation of the treatment plan. The student learns how to record the data and orally present a complete data base efficiently and professionally. Both the traditional and problem-oriented medical records are studied.

MDSC 307 Techniques of Patient Counseling
1 hr.
An introduction to patient counseling with emphasis upon interviewing techniques, current theories of personality and psychopathology and includes such specialized techniques as methods of crisis intervention, and counseling patients with substance abuse, coping, and sexual dysfunction problems. In addition, psychotherapeutics counseling is discussed.

MDSC 311 Gross Human Anatomy
5 hrs.
This course is designed to help the Physician Assistant student achieve a sound understanding of the structure of the human body through lectures, discussions and study of laboratory cadaver proton. Topographical and regional anatomy as applied to clinical medicine is stressed.

MDSC 312 Community and Mental Health Lecture
1 hr.
This course introduces topics in community and mental health that range from descriptions of community resources to diagnostic categories and terms in the field of psychiatry. Emphasis will be placed on acquiring students with a wide range of clinical presentations, referral options, and therapeutic guidelines related to the role of the Physician Assistant in the health care system. Prerequisite: MDSC 317 and PA curriculum.

MDSC 314 Patient Evaluation II
3 hrs. Second in a series of courses beginning with 304.

MDSC 317 Internal Medicine I
6 hrs.
This course has two principle elements. The first is to introduce the student to the broad concepts of medical service emphasizing the psychosocial aspects of care. The second is to begin surveying the etiology, pathophysiology, diagnosis and treatment of common diseases and disorders by body systems. This survey will be completed in MDSC 327.

MDSC 324 Patient Evaluation III
1 hr. Third in a series of courses beginning with 304.

MDSC 327 Internal Medicine II
3 hrs.
This course surveys the etiology, pathophysiology, diagnosis and treatment of common diseases and disorders by major body systems. It is a continuation of MDSC 317 Internal Medicine I.

MDSC 334 Patient Evaluation IV
4 hrs.
Fourth in a series of courses beginning with 304.

MDSC 337 Pediatric Medicine Lecture
3 hrs.
This course deals with a systematic developmental approach to the etiology, clinical presentation of signs and symptoms, diagnosis and treatment of common medical disorders in pediatrics, and topic areas such as human growth and development, neonatal problems, infectious diseases of childhood, and selected disorders of each body system. Prerequisite: MDSC 317 and PA curriculum.

MDSC 347 Obstetrics/Gynecology Lecture
3 hrs.
This course introduces the student to women's health care through inquiry into the fields of obstetrics and gynecology, knowledge of normal processes and abnormal conditions, and increased awareness of the unique needs of women seeking health care. Prerequisite: MDSC 317 and PA curriculum.

MDSC 409 Allergy
1 hr.
This course covers basic theoretical and proven concepts of allergy and immunology. Emphasis is placed on clinical recognition of allergic symptoms, importance of accurate etiologic diagnosis, and the relationship between pathophysiologic changes and their correction by proper therapy.

MDSC 410 Pharmacology I for PAs
4 hrs.
This course emphasizes the general principles of pharmacology as a basis for the rational clinical use of drugs. The course is comprehensive but pragmatic. Factors affecting drug action, such as rates of absorption, metabolism, and excretion are discussed. Mechanism of action is covered. The principle thrust is to acquaint the student with drugs commonly used in therapy, their side affects, and toxic manifestations.

MDSC 412 Pharmacology II for PAs
3 hrs.
This course deals with the practical aspects of pharmacology as they relate to the primary-care physician Assistant. This is a continuation of Pharmacology I.

MDSC 413 Dermatology
1 hr.
This course provides an introduction to the general field of dermatology including normal structure and function of the skin, techniques of history-taking and examination, recognition of common skin diseases, and basic concepts of treatment.

MDSC 415 Emergency Medicine Lectures
3 hrs.
This course presents the etiology, evaluation and initial treatment of common medical and surgical emergencies. It also presents practices on basic skills needed in the practice of emergency medicine such as suturing, casting, and CPR.

MDSC 422 Pediatric Rotation
4 hrs.
During this six-week rotation, emphasis is placed on normal variations of growth and development and childhood illnesses. Emphasis is placed on well-child care, immunizations, nutrition, and general patient and parent education. The student is exposed to treatment of the acutely ill in the office and hospital, and assessment of normal growth and development through physical examination.

MDSC 423 Obstetrics and Gynecology Rotation
4 hrs.
This six-week rotation is designed to provide an opportunity for the PA Student to develop proficiency in the special history-taking and examination of the Ob/Gyn patient. While on the obstetric service, the management principles of pregnancy, labor and delivery, including prenatal and postpartum care, and complications are taught. The gynecology emphasis is placed on exposing the students to the methods and programs relating to cancer detection, venereal disease, wound control. Emphasis is on those obstetric and gynecologic disorders most commonly encountered by the primary care physician assistant.

MDSC 424 Internal Medicine Rotation
4 hrs.
A six-week rotation during which the indications, limitations, and methods of performing the necessary diagnostic procedures and therapeutic measures used in the treatment of general medical disorders are reviewed. Patient problems and conditions as experienced in the outpatient clinic, emergency room, and the hospital are covered in this course. The student, through the collection and review of historical, physical and laboratory data, develops an understanding of patient evaluation and treatment.

MDSC 425 General Surgery Rotation
4 hrs.
This six-week surgical rotation is designed to prepare the student to function as an assistant to the generalist. The student's time is divided between outpatient and inpatient surgical services. The student learns to perform admission histories and physicals and participate in discussions regarding diagnostic tests necessary for proper patient care. The student then follows through pre-operative preparations, assists in surgery, and helps in post-operative care. In this way, the student learns to assist not only in the management of routine surgical cases, but also in the treatment of more complicated conditions.

MDSC 426 Community and Mental Health Rotation
4 hrs.
This is a six-week rotation which emphasizes common problems found in primary care settings which involve mental stresses and mental illness. The objectives center around proper data collection, problem recognition, basic counseling techniques and referral mechanisms. There is also emphasis on patients' legal rights and common treatment modalities. Experience is gained with both pediatric and adult patients and with both outpatient and inpatient situations. The student becomes acquainted with the community and mental health framework including major types of programs encountered by patients in the community and the services provided by agencies which care for clients needs.

MDSC 427 Family Medicine Preceptorship
6 hrs.
Family Medicine is an eight-week rotation during the last two months of the program prior to graduation. It provides an opportunity for students to bring the knowledge gained on the previous rotations to bear on primary care. Emphasis is on proper data collection through history and physical examination, formulation of accurate diagnosis, and accurate investigation, and treatment plans. Students are evaluated on their professional manner. Specific objectives include
recognition and treatment of problems encountered in family medicine. Emphasis is placed on acquaintance with available community resources such as child welfare, mental health, public health, welfare, drug and alcohol abuse, crisis centers, etc. Students assist physicians in medical and surgical procedures. Emphasis is also placed on counseling patients and family members about medical problems and health problems. This includes areas of preventive medicine in health education.

MDSC 426 Elective Rotation: Variable Title 2-6 hrs.
This six-week rotation is intended to cover the many sub-specialties of medicine, including emergency medicine, dermatology, otolaryngology, ophthalmology, urology, orthopedics, cardiology, and oncology. The student may elect to take any combination of these specialties to fill the six-week period. In addition to the specialties, the student may elect to seek further experience in one of the other main specialties such as community and mental health, surgery, internal medicine, obstetrics and gynecology, pediatrics, or family practice.

MDSC 432 Pediatrics Seminar 2 hrs.
During the six-week clinical rotation in pediatrics, the student reviews selected readings which include major areas of pediatrics: newborn care, disorders of the newborn, infectious diseases of the newborn, musculoskeletal system, neurologic system, infectious diseases, poisonings, child neglect, psychological aspects of childhood, digestive system disorders. Within these topics, emphasis is placed on etiology, signs and symptoms, clinical presentation, diagnosis and management, common pediatric problems. Emphasis is also placed on preventive medicine, care and assessment of well children, immunizations, patient and parent education.

MDSC 433 Obstetrics and Gynecology Seminar 2 hrs.
This is a self-directed seminar in obstetrics and gynecology which accompanies the obstetrics and gynecology rotation. The student must complete reading assignments in obstetrics and gynecology. Here again, the emphasis is on common problems in obstetrics and gynecology with which a physician assistant would be involved including preventive medicine and patient education.

MDSC 434 Internal Medicine Seminar 2 hrs.
This is a self-directed seminar which accompanies the internal medicine clinical rotation. The reading list centers on etiology, clinical presentation, diagnosis and management of common problems in adult medicine.

MDSC 435 Surgery Seminar 2 hrs.
This is a self-directed seminar in surgery which accompanies the clinical rotation in surgery, and deals with the etiology, clinical presentation, diagnosis, and management of common problems of surgery.

MDSC 436 Community and Mental Health Seminar 2 hrs.
This is a directed, self-study seminar which accompanies the community and mental health clinical experience and which centers on common problems frequently encountered by patients and emphasizes their recognition and proper treatment. It also emphasizes referral mechanisms and utilization of community resources. The problems include such things as marriage and family counseling, alcohol and drug abuse, anxiety problems, learning disabilities, personality disorders in addition to depression and schizophrenia.

MDSC 437 Family Medicine Seminar 2 hrs.
This is a self-directed seminar in family medicine which accompanies the clinical experience in family medicine. The student is provided with a required reading list which focuses on problems commonly found in primary care in family medicine. These include knowledge of the family structure and function, family dynamics, preventive medicine, periodic health screening, utilization of community resources and common medical problems in dermatology, ophthalmology, internal medicine, nutrition, allergy, immunology, urology, neoplastic disorders, emergency problems, surgery, pediatrics, obstetrics, and gynecology.

MDSC 438 Elective Seminar: Variable Title 2 hrs.
This independent study seminar takes place during the elective rotation. Through readings and discussion with the precepting physician, emphasis is placed on academic knowledge of the elected area of medicine. Prerequisite: PA curriculum.

SOCIAL WORK

Philipp Poppie, Director
Thomas Blakely
Donald Cooney
Linwood Cousins
Judy Halseth
Thomas Holmes
Peter Judd
Raymond Lish
Tracey Matrey
Frederick MacDonald
Gary Mathews
Edward Pawlak
Deloris J. Phillips
Linda Reeser
Kenneth E. Reid
Danny H. Thompson
Susan Weinger
Robert Wertkin
Marion Winberg

The School of Social Work offers both undergraduate and graduate professional programs leading to a B.S.W. and M.S.W., respectively. Both programs are accredited by the Council on Social Work Education. The undergraduate professional program is designed to 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. The graduate/professional program is designed to educate students for social treatment and policy, planning, and administration positions in the field of social welfare.

Students enrolled in the undergraduate social work curriculum are required to complete a major consisting of 32 hours and complete a total of 122 hours to graduate. A minor consisting of a minimum of 15 hours is offered for students in other curricula. In addition, the School of Social Work participates in a University gerontology minor. Social work students should consult their curriculum advisor for program planning for the gerontology minor.

Admission
Students who desire to major in social work will be admitted into the pre-social work curriculum at the time of admission to the University. This status, however, does not assure admission to the social work major. The selection of students to be admitted to the social work major occurs after review of all applicants by the admissions and student services committee composed of social work faculty. A competitive process.

On completion of 45 semester hours (midway through the sophomore year) and SWRK 210 Social Work Services and Professional Roles, students submit an Application for Admission to Undergraduate Social Work Major to the Director of Admissions of the School of Social Work. SWRK 210 should be taken in the first semester of the sophomore year. Deadlines for submitting applications are January 15, May 15, and October 1 of each year.

Applicants are encouraged to apply as early as possible because there are limited seats available for the major each year. This admission process is competitive.

Social Work Curriculum
Offerings in the social work major cover four substantive components. The first component provides knowledge about social welfare systems and policies. The second deals with psychological and sociological theories concerned with individual, family, group, organization, and social systems. The third component focuses on social work practice
content. The fourth component provides an introduction to social research. A guided interdisciplinary minor of 22-23 hours is required to fulfill the program requirements. In addition, a student may choose to select a second regular curriculum minor from another department. If so, the student should consult the undergraduate social work advisor for approval. Further questions concerning the Social Work major or minor may be directed to the School of Social Work.

The graduate-professional program focus is on contemporary social problems and problem-solving processes. It provides a two-year or three-year curriculum leading to a master's degree in social work. Further information about this program can be found in the Graduate Bulletin.

Baccalaureate Writing Requirement

Students who have chosen the Social Work major will satisfy the Baccalaureate Writing Requirement by successfully completing ENGL 305 Practical Writing.

Program

MINIMUM HOURS REQUIRED FOR GRADUATION 122 hrs.

General Education Requirements 35 hrs.

Requirements for the undergraduate Social Work major 32 hrs.

SWRK 210 Social Work Services and Professional Roles 3

SWRK 300 Social Welfare as a Social Institution 3

SWRK 350 Social Work Concepts in Individual and Family Behavior 3

SWRK 351 Social Work Concepts in Group, Community and Organization Behavior 3

SWRK 400 Social Work Practice: The Problem Solving Process 3

SWRK 401 Social Work Practice: Intervention and Evaluation 3

SWRK 402 Social Work Practice: Policy Analysis and Organizational Context 3

SWRK 410 Field Experience and Seminar I 3

SWRK 411 Field Experience and Seminar II 3

SWRK 433 Dynamics of Race and Culture for Social Work Practice 3

Any one of the following:

PSCI 202 State and Local Government 4

PSCI 300 Urban Politics 3

Any one of the following:

PSY 100 General Psychology 3

PSY 180 Health Psychology 3

PSY 250 Abnormal Psychology 3

Any one of the following:

SOC 210 Modern Social Problems 3

SOC 300 Sociological Theory 3

SOC 352 Introduction to Social Gerontology 3

Physical Education 2 hrs.

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 undergraduate students.

SWRK 100 Introduction to Social Services 3

SWRK 464 Problem Solving in Gerontology 3

SWRK 512 Social Policy and Service Delivery in Selected Problem Areas 3

SWRK 562 Community Organization in Urban Areas 3

SWRK 564 Special Studies in Social Welfare Practice 1-4

SWRK 566 Social Service in the Schools 3

SWRK 572 Community Agency Relations 2

SWRK 597 Teaching Apprenticeship in Selected Social Work Curriculum Areas 1-4

SWRK 598 Readings in Social Work 1-4

The student must satisfy the requirements for the B.S.W. degree.

Any student who fails to meet the following criteria will be notified in writing by the School of Social Work undergraduate advisor that he/she will be in jeopardy of being dropped from the social work major.

1. The student must receive a "C" or higher in each required social work course to remain in the major. You may repeat one required social work course to raise your grade. The exceptions to this minimum grade of "C" requirement are the research methods courses (SOC 382-383) where a "D" is acceptable.

2. The student must maintain an overall average of 2.0 in the interdisciplinary minor. Transfer students note that courses transferring into the minor can be used to balance a lower grade in a course here.

The school may refuse to permit a student to continue in the curriculum if at any time it is 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.

Social Work Minor

15 credit hours

SWRK 210 Social Work Services and Professional Roles 3

SWRK 300 Social Welfare as a Social Institution 3

Three of the following social work courses: 350, 351, 433, 464, any 500 level social work course (Excluding SWRK 572)

Social Work Courses (SWRK)

A list of approved General Education courses can be found in "Academic Policies and Procedures" earlier in this catalog.

SWRK 100 An Introduction to Social Services 3 hrs.

A descriptive course covering knowledge content relating to operation of social service programs. It is a study of the philosophy and value base for these services. Observation visits to field agencies, films, guest lectures and other lab and volunteer experiences may be arranged with the instructor to promote appreciation of knowledge content.

SWRK 210 Social Work Services and Professional Roles 3 hrs.

This course introduces students to the social work profession: its code of ethics, value base, commitment to social justice, and historical development. The course examines the evolution of social work as a profession, acquaints students with contemporary social work roles and fields of practice, and examines the 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 3 hrs.

This course analyzes social welfare as a response to social problems and human needs. It examines the social, economic, political, and philosophical forces that have led to the historic development and institutionalization of social welfare. It encourages students to develop a critical perspective on social welfare policies and programs and stresses an understanding of the impact of age, race, gender, sexual orientation, and social class upon social policy and service delivery. Prerequisites: SWRK 210.


This course provides the student with a basic understanding of human behavior, related to human developmental processes, ego psychology, learning theory, and family, social and cultural dynamics. The course examines socialization and its influence on human behavior and identifies significant physical, mental, emotional, social, and cultural factors which affect the development of the personality, biological, and family systems. The social and cultural factors examined include social class, race, gender, age, sexual orientation, etc. Prerequisite: SWRK 210 and junior status.

SWRK 351 Social Work Concepts in Group, Community and Organizational Behavior 3 hrs.

This course provides the student with an understanding of human behavior related to small group process, formal organization and community dynamics. Students are
introduced to selected systems concepts. The interplay of various forces which affect the development of social groups, communities, and organizations, and the effects of these interdependent systems on the client system are examined. The impact of race, sex, and age is considered in relation to groups, organizations, and communities. Prerequisites: SWRK 210, SWRK 350, and junior status.

SWRK 400 Social Work Practice: The Problem Solving Process 3 hrs.
This is the first of a sequence of three courses in social work practice for social work majors. It focuses on the problem solving process as a conceptual framework for social work. It also examines issues related to professionalism, social work values, and the impact of race, gender, and other differences on practice. The student will learn to identify problems at various system levels, including individual, small group, organization, and community. The course presents all phases of the problem solving process, with particular emphasis on problem identification, assessment, and data collection. Role plays, simulations, and other classroom activities provide practice in basic skills necessary for engaging, helping, intervening, and conducting assessments. Prerequisites: SWRK 300, SWRK 350, majors only.

SWRK 401 Social Work Practice: Intervention and Evaluation 3 hrs.
This is the second in a sequence of three social work practice courses. It presents the application of the problem solving process through specific interventions and roles at various system levels (individual, group, organization, and community). These interventions and roles will include, but not be limited to, field work, agency-based, short-term, case management, and role plays. Students will learn to implement and appraise interventions in reported and simulated situations and to evaluate the effectiveness of their intervention skills. Prerequisites: Senior status, SWRK 400, concurrent enrollment in SWRK 410, majors only.

This course combines conceptual analysis and training in practice skills. It focuses on the effects of social policy and organizational context on 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 delivery. Prerequisite: Senior status, SWRK 401, concurrent enrollment in SWRK 411.

SWRK 410 Field Experience and Seminar I 4 hrs.
Two hundred (200) clock hours in the field and fourteen (14) hours in a campus-based seminar. In a social work or allied service agency, students develop a working knowledge of the agency's functions, structure, and processes and its service provider role within a total community. Students apply knowledge and develop skills in problem identification, data collection, problem assessment, and goal formulation with clients in the context of social values. Prerequisites: Senior status, Social Work Major status, consent of Director of Field Education, and concurrent enrollment in SWRK 401. Completed application is due at least 15 weeks prior to the semester field work is to be taken. Credit/No Credit only.

SWRK 411 Field Experience and Seminar II 4 hrs.
This is continuation of SWRK 410. Two hundred (200) clock hours in the field and fourteen (14) hours in a campus-based seminar. Students engage in social work interventions and practice interventional behaviors in solving problems with individuals, groups, organizations and/or a community. Prerequisites: Senior status, Social Work Major status, completion of SWRK 401 and 410, consent of Director of Field Education, and concurrent enrollment in SWRK 402. Credit/No Credit only.

SWRK 420 Ethical Issues in Employee Assistance 3 hrs.
Human service professionals have a responsibility to engage in ethical behavior. They are involved in situations which are increasingly more complex with fluctuating and diverse values. The purpose of this course is to help students become more effective in dealing as professional persons with ethical questions in social policy and practice situations. The course focuses on ethical issues and laws impacting employee assistance programs. It is structured to facilitate development of a greater awareness of one's personal values and the values and ethics of the profession. It is presented from a social work perspective. Ethical dilemmas are presented at different levels — client, colleague, agency, community, and society. Students are introduced to moral and philosophical analysis of ethical problems and a model for ethical decision-making. Open only to Employee Assistance Academic Program majors.

SWRK 421 Case Management in Industry 3 hrs.
Case Management in Industry is that body of knowledge, skills, and behaviors that provides for the personal well being of workers towards the end that job performance is enhanced and work satisfaction is increased. This course introduces the employee assistance student to (1) generic care management functions, (2) knowledge and skills to carry out these functions, and (3) knowledge about social support networks and community resources that the employee assistance counselor will expect from the case manager at the work site will be explored. Open only to Employee Assistance Academic Program majors.

SWRK 433 Dynamics of Race and Culture for Social Work Practice 3 hrs.
This course focuses upon ethnic/racial groups who are among social welfare consumers and social work practitioners. 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 and research. Consent of instructor.

SWRK 464 Problems in Forensiology 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 problems solving techniques utilized by professional social workers in working with minority and majority aged population. Open to social work students and students from related professional disciplines with consent of instructor.

SWRK 512 Social Policy and Service Delivery in Selected Problem Areas 3 hrs.
Intensive study in selected field of service specialization and social problem areas. Attention is focused on learning about the major social policy issues associated with the service or problem area. Specific topics will be announced each semester. Prerequisite: Open only to senior undergraduates and graduate students.

SWRK 562 Community Organization in Urban Areas 3 hrs.
Social welfare planning and social action methods are studied as approaches for preventing and resolving aspects of social problems. Emphasis is placed on the organizing of neighborhood and consumer groups in order to increase social interaction and improve social conditions. Prerequisite: Consent of instructor.

SWRK 564 Special Studies in Social Welfare Practice 1-4 hrs.
Study of selected topics related to the theory and practice of social welfare activities and endeavors. Focus will be on roles of human service workers and methods 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 special contributions of a school social worker as a helping person to the pupils, the school staff and the homes by various intermediate means are explored. Prerequisite: Consent of instructor.

SWRK 569 Juvenile Justice 3 hrs.
This course deals with the processing of offenders through the juvenile justice system with special emphasis on the philosophy and practice of social welfare activities and organizing of neighborhood and consumer groups in order to increase social interaction and functioning of juvenile courts. Personal and organizational factors that are associated with or that determine offenders’ passage through the juvenile court are examined. Prerequisite: Consent of instructor.

SWRK 572 Community Agency Resources 2 hrs.
A study of community agencies and resources for those concerned with family and personal problems. Emphasis is placed upon the availability of these resources and their effective use by business and industry, social agencies, and families. Special emphasis is placed on the roles of teachers, etc. Not recommended for social work majors or minors.

SWRK 597 Teaching Apprenticeship in Selected Social Work Curriculum Areas 1-4 hrs.
The course focuses on the development of educational skills for social workers through faculty-directed participation in teaching activities in a selected social work course. Specific learning objectives and expectations for apprentices are arranged with participating faculty. This course may be taken a second time (1-4 credits, 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
Robert L. Erickson
Sandra Glista
James M. Hillenbrand
Gary D. Lawson
Nickola W. Nelson
Donna B. Oas
Karen S. Seelig
Candis Warner

Adjunct Faculty
Cindy Beachler
William L. Locke
Neil Shepard
John Tecca

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.

Admission

Students who desire to major in speech pathology and audiology will be admitted into the Pre-Speech Pathology and Audiology curriculum at the time of admission to the University. This status, however, does not assure admission to the departmental major. The selection of students to be admitted to a speech pathology and audiology major occurs after review of all applicants by a departmental faculty committee.

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.

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 arrange to complete a minor in elementary education which is required for the Elementary Provisional Teaching Certificate. Requirements and approval for this minor are obtained from the Education Advising and Admissions Office, 2504 Sangren Hall. Students must obtain an approved minor slip signed by an approved elementary education advisor.

Completion of the foregoing requirements, together with completion of the curricular requirements described below, and completion of a master's degree program in speech pathology and audiology (with major emphasis in speech pathology, and including a graduate level speech and language therapy practicum in the schools), will result in recommendation of the student for Elementary 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 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 linguistics, social work, computer science, physics, psychology, gerontology or other related discipline. Assistance in selecting an appropriate minor is available through the department's 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 Pathology and Audiology Curriculum

A major in speech pathology and audiology consists of a minimum of 35 to 37 hours in speech pathology and audiology plus additional coursework specified by the department. These additional requirements include coursework in general education, physical education, supporting courses outside the department, and an academic minor. Each student is responsible for obtaining information on degree requirements and for taking the steps necessary to meet those requirements.

Students interested in a major in speech pathology and audiology should contact the department office in the Speech and Hearing Center on the East Campus for an appointment with an undergraduate advisor.
Because the sequencing of courses included in this major is critically important, students must seek academic advising from the department on an early and regular basis. Students who fail to do so may be dropped from enrollment in departmental courses.

**Baccalaureate Writing Requirement**

Students who have chosen the Speech Pathology and Audiology major will satisfy the Baccalaureate Writing Requirement by successfully completing SPPA 459 Special Studies in Communication Disorders.

**Speech and Hearing Processes Minor**

The departmental minor in speech and hearing processes requires a minimum of fifteen hours of credit in speech pathology and audiology coursework. In consultation with a departmental advisor, students may design a minor option in areas such as speech-language-hearing science, audiology, speech-language-hearing disorders, or other individually tailored sequences complementary to the student’s educational and vocational objectives. The only undergraduate courses specifically excluded from consideration in a minor sequence are SPPA 400 and SPPA 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 “Academic Policies and Procedures” earlier in this catalog.

**SPPA 200 Introduction to Communication Disorders**

3 hrs.

This course provides a broad view of the nature of language and the primary means of human communication, its normal acquisition, the common disorders of speech, language and hearing, and the social and emotional consequences of these disorders, and individual and societal ways of dealing with communication disorders.

**SPPA 203 Normal Language Acquisition**

3 hrs.

A study of normal language acquisition as a basis for investigating disordered language. The course involves a survey of the stages of language acquisition and a consideration of mechanisms of language acquisition. Prerequisite: Consent of instructor or LANG 105 and PSY 100. Majors must take concurrently with SPPA 204 and SPPA 207.

**SPPA 204 Phonetics**

3 hrs.

A study of human speech sounds as a basis for understanding speech production and speech perception. Means of symbolizing speech sounds are provided to prepare the student for accurate transcription of speech behavior. Prerequisite: Consent of instructor or LANG 105 and BIOS 112. Majors must take concurrently with SPPA 203 and SPPA 207.

**SPPA 205 Speech Anatomy and Physiology**

3 hrs.

A study of respiration and phonation, with emphasis on their function in speech production and speech perception. The course includes a detailed study of the structures involved, including neurology. Prerequisite: Consent of instructor or SPPA 203, SPPA 204, PHYS 107/108, MATH 110 or MATH 116. Majors must take concurrently with SPPA 206.

**SPPA 206 Hearing Science**

3 hrs.

A study of the structure and function of the hearing system as related to communicative processes. The course includes a consideration of theories of speech perception. Prerequisite: SPPA 203, SPPA 204, PHYS 107 and PHYS 108, MATH 110 or MATH 116; or by consent of instructor. Majors must take concurrently with SPPA 205.

**SPPA 207 Clinical Laboratory**

2 hrs.

This course introduces the student to various academic, clinical, and personal aspects of the professions of speech and language pathology and audiology, and it requires participation in structured observation of clinical activities. Must be concurrently taken with SPPA 203 and 204.

**SPPA 260 Linguistic Development of the Child**

2 hrs.

This course focuses on the communication development of the child, birth through 12 years. The acquisition of language and other communication modes are viewed from a psycholinguistic orientation. Application to the teaching of the language arts is emphasized. Must be taken concurrently with ILAM/ED 260. Required for the Integrated Language Arts Minor.

**SPPA 351 Phonemic Disorders**

2 hrs.

A detailed study of the nature of phonemic disorders, orientation to clinical management. Prerequisite: SPPA 204.

**SPPA 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. 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 555 Speech and Hearing Therapy in the Schools**

2 hrs.

Study of clinical work with speech, language, and hearing disorder children in the school setting.

**SPPA 556 Rehabilitative Audiology**

3 hrs.

Orientation to the clinical management of communication problems associated with auditory impairment.

**SPPA 565 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 575 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 audiometry, computer applications to speech pathology and audiology, augmentative communication, and contemporary professional issues.
The Graduate College offers a wide variety of programs leading to the master’s, specialist, and doctoral degree. The University has sixty master’s degree programs. Master of Arts degrees are awarded in numerous programs in the following general categories within the College of Education: Counselor Education and Counseling Psychology, Early Childhood Education, Educational Leadership, Physical Education, Reading, Special Education, Teaching in the Elementary School, and Teaching in the Middle School.

A number of other programs at Western also lead to the Master of Arts degree: Anthropology, Art, Career and Technical Education, Chemistry, Communication, Comparative Religion, Economics, English, Geography, History, Home Economics, Mathematics, Mathematics Education, Medieval Studies, Orientation and Mobility, Philosophy, Physics, Political Science, Psychology, Rehabilitation Teaching, Sociology, Spanish, Speech Pathology and Audiology, Teaching of Geography, and Teaching of Music.


In 1960 programs leading to the Specialist in Education degree were introduced. This degree is offered in Educational Leadership and in School Psychology. Doctoral programs were initiated in 1966 and were fully accredited by the North Central Association in 1971. Eighteen of these programs—those in Applied Economics, Biological Sciences, Comparative Religion, Computer Science, Educational Leadership (Educational Evaluation, Measurement, and Research Design), English, Geology, History, Industrial Engineering, Mathematics, Mathematics Education, Mechanical Engineering, Physics, Political Science, Psychology, Science Education, Sociology, and Statistics—lead to the Doctor of Philosophy degree. The Doctor of Education degree is offered in Counselor Education and Counseling Psychology, Educational Leadership, and Special Education. The Doctor of Public Administration is also offered.

Please refer to The Graduate College Catalog for further information on these programs. Inquiries about financial assistance should be directed to The Graduate College; inquiries about research opportunities should be directed to the Office of Research and Sponsored Programs.
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 satellite, 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.

Weekend College and Special Programs
Weekend College and Special Programs provides undergraduate and graduate courses in a weekend format. Courses may be applied to degrees or certificates or can be taken for personal or professional development. Support services, including an on-site coordinator and a weekend librarian, are provided.

The office also coordinates special workshops for health professionals and teachers, provides pre-admission information to returning students and coordinates academic advising for students in the General University Studies curriculum.

Distance Education
The Department of Distance Education offers an increasingly broad spectrum of courses and programs via multiple distance learning methods and techniques. This includes self-instruction, satellite, and video taped programs. This department is also developing new programming for delivery via compressed video, cable television, and computer-based teleconferencing.

Self-Instructional Courses
Self-Instructional courses are available when students cannot participate in on-campus or off-campus courses. The Office of Self-Instructional Programs offers over 112 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 Institutes
The Office of Conferences and Institutes develops and manages conferences and non-credit seminars in cooperation with university departments, professional groups, and community organizations.

Regional Centers
The Division's administrative offices are located in Ellsworth Hall on Western's main campus in Kalamazoo. Five regional centers are located as follows:

- Grand Rapids Regional Center
  2333 East Beltline, S.E.
  Grand Rapids, MI 49546-5936

- Battle Creek (Kendall) Regional Center
  50 W. Jackson
  Battle Creek, MI 49017

- Lansing Regional Center
  300 N. Washington Square, Suite 200
  Lansing, MI 48933-1204

- Muskegon Regional Center
  Muskegon Center for Higher Education
  221 S. Quarterline Road
  Muskegon, MI 49442-2532

- Southwest Regional Center
  2510 Lakeview Avenue
  St. Joseph, MI 49085

General University Studies
The Division has developed a baccalaureate program which especially serves those with a community college background or its equivalent. This undergraduate degree program is known as the General University Studies curriculum, which leads to either the Bachelor of Arts or the Bachelor of Science degree, depending upon the subject matter content of the program. Specific course...
requirements vary with the selected area of concentration. All programs must be planned with an academic advisor for the area of concentration. Arrangements for consultation with an advisor will be provided at the student's convenience. Inquiries about the General University Studies programs may be directed to any of the Division's offices.

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 those residency requirements.

2. Completion of a planned area of concentration, involving a minimum of 45 semester hours of credit. Some work may be undertaken in another area of interest.

3. Completion of the General Education requirement of 35 semester hours of credit. This work does not have to be exclusive of work included in the area of concentration.

4. Completion of the University's Computer Literacy, Intellectual Skills, and Baccalaureate Writing requirements.

Areas of Concentration

American Studies

Lewis H. Carlson, Advisor

This bachelor's 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 the program to their liking. Although the program is primarily nonvocational, it provides a useful background for a number of professional degree programs, such as business administration, public administration, social work, and the law.

The requirements for this 45-hour concentration are as follows:

1. A minimum of 25 credit hours, with at least two courses in each of 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. A 3-hour course, GENL 333, An Introduction to American Studies, or HIST 212 American Culture, or advisor-approved substitutes.

4. An independent study project (3-8 hrs.) on some aspect of the American experience, designed to encourage imaginative and innovative application of previous study. This project may draw on local resources, as in the case of regional history or community arts, or it may deal with more general aspects of the American experience. Students may arrange for credit in a variety of ways, such as community workshops, independent study involving directed research, travel projects, and community service. This requirement can be waived with advisor permission.

Applied Liberal Studies

David A. Ede, Advisor

This program, which leads to the Bachelor of Arts degree, is available to those who have completed two years of undergraduate study. This program will be of particular interest to those adults who, through previous formal study and practical experience, are eligible for promotion to positions of supervisory, managerial, or executive responsibility, but who lack the formal education qualifications necessary for such advancement.

The requirements for this 45-hour concentration are as follows:

1. A minimum of 27 credit hours, with at least 9 hours (a minimum of 3 courses (3-4 credit hour)) selected from three of the following topical areas:
   - A. Community concerns
   - B. Community Skills
   - C. Environmental concerns
   - D. Human relations
   - E. International concerns
   - F. Technical skills

2. An additional 18 hours in the six areas chosen above.

3. Up to 15 hours of work taken previously may be applied toward this concentration. Coursework from other universities may be applied toward this concentration. Acceptance of this credit does not imply transferability to other degree programs at Western.

Applied Professional Studies

Michele M. Moe, Advisor

This concentration, which leads to a Bachelor of Arts degree, may lead to opportunities in supervision, administration or group leadership in the public and private sectors. This program is designed for students who have a transferable associate's degree or junior standing (56 hours), who are in good standing. Exceptions will be considered under special circumstances. The admission process is as follows:

1. To apply for admission, the student must complete the regular [long form] admission steps at least two months prior to the start of classes.

2. To apply for admission, the student must complete the following core courses (15 hours):
   - FCL 320 Business Finance
   - MGMT 300 Fundamentals of Management
   - MKTG 250 Marketing

3. A minimum of a "C" grade is required in each of the core courses.

2. 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 topical areas:
   - 1. Quantitative Studies
   - 2. Communication Skills
   - 3. Analytical Skills
   - 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.

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 courses in this bloc help to develop flexibility in approaching problems, and skill in analysis.

CS 111 Computer Science I

ECON 100 Contemporary Economic Problems

ED 230 The Nature of Creativity

GSCI 130 Social Issues in Physical Science

GSCI 134 Problems Solving and Decision Making

IME 305 Work Analysis

PHIL 100 Critical Thinking and Writing

PHIL 310 Moral Philosophy

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. Business enterprises 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.

ANTH 370 Culture and Communication

BIS 340 Introduction to Business Communications

COM 104 Public Speaking

COM 170 Interpersonal Communication

COM 200 Introduction to Communication Theory

COM 331 Persuasive Speaking

COM 482 Communication Processes in the Organization

ENG 105 Thought and Writing

ENG 305 Practical Writing

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 bloc are designed to improve the leader's knowledge of these environmental issues.

BIOS 105 Environmental Biology

BAS 320 Economics and The Black Community

ECON 319 Environmental Economics

EVNS 350 Environmental Problem Solving

FCL 380 Legal Environment
ENHANCE THOSE SKILLS NECESSARY FOR EFFECTIVE
OF TODAY'S LEADER. COURSES IN THIS BLOC ARE
— ECONOMIC, SOCIAL, AND POLITICAL

SOC 375 Sociology of Work 3
COM 432 Group Communication

INTENDED TO DEVELOP A SENSITIVITY TO THE
IMPORTANT OF GOOD HUMAN RELATIONS AND
INDIVIDUALS AND GROUPS IS AN IMPORTANT ACTIVITY

PSCI 306 Environmental Politics 3

INTERNATIONAL CONCERNS
THOSE IN POSITIONS OF AUTHORITY IN PUBLIC AND
PRIVATE ORGANIZATIONS ARE BECOMING
INCREASINGLY CONCERNED WITH THE "GLOBAL VILLAGE" —
ECONOMIC, SOCIAL, AND POLITICAL
INTERDEPENDENCE OF NATIONS. IT IS VITALLY
IMPORTANT, THEREFORE, TO BECOME MORE
KNOWLEDGEABLE OF SOME OF THE PRINCIPAL
FEATURES IN THE GLOBAL MARKET. COURSES IN THIS
BLOC WILL SHARPEN ONE'S ABILITY TO THINK CRITICALLY
ABOUT INTERNATIONAL AFFAIRS.

ANTH 102 Peoples of the World 3
ANTH 220 Cultural Anthropology 3
ANTH 332 Topics in World Culture 3
ECON 380 International Economics 3
EGEO 361 Population: The Concerning World 3
EGEO 383 Western and Southern Europe 3
EGEO 386 Sub-Saharan Africa: Man, Environment, Resources 3
EGEO 389 Monsoon Asia 3
HIST 280 Emerging Nations 3
PSCI 250 International Relations 3
PSCI 350 American Foreign Policy 4
TRNS 310 Introduction to Translation 3

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 BLOC 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
ECO 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

CRIMINAL JUSTICE
MICHELLE VOLKMER, ADVISOR

THE GENERAL UNIVERSITY STUDIES BACHELOR'S DEGREE IN CRIMINAL JUSTICE IS DESIGNED FOR PERSONS WHO HAVE COMPLETED AN ASSOCIATE'S DEGREE IN LAW ENFORCEMENT, CORRECTIONS, OR POLICE ADMINISTRATION AND WISH TO COMPLETE A BACHELOR'S DEGREE THROUGH PART-TIME STUDY. SIXTY HOURS OF UPPER DIVISION STUDY BEYOND THE ASSOCIATE'S DEGREE IS REQUIRED TO COMPLETE THE BACHELOR'S DEGREE IN CRIMINAL JUSTICE. THE DEGREE PROGRAM IS INTERDISCIPLINARY WITH CORE COURSES IN LAW ENFORCEMENT, COURTS, AND CORRECTIONS. IN ADDITION, EACH STUDENT HAS AN OPPORTUNITY TO TAKE ADVANCED COURSES IN ONE OF THESE AREAS. THE REQUIREMENTS ARE AS FOLLOWS:

REQUIRED PREREQUISITES
THE FOLLOWING COURSES ARE REQUIRED BEFORE TAKING ANY OF THE CORE COURSES.

SOC 200 Principles of Sociology 3
SOC 210 Modern Social Problems 3
SOC 260 Introduction to Criminal Justice 3
SOC 262 Criminology 3

THOSE COURSES ARE PREREQUISITES TO THE CRIMINAL JUSTICE CURRICULUM AND DO NOT COUNT AS A PART OF THE 45 HOURS REQUIRED IN THE AREA OF CONCENTRATION.

WRITING EXPECTATION
STUDENTS ARE EXPECTED TO WRITE AT THE COLLEGE LEVEL BEFORE ENROLLING IN THE FOLLOWING ADVANCED COURSES. STUDENTS SHOULD HAVE COMPLETED ENGL 105 OR EQUIVALENT. YOU ARE ENCOURAGED TO TAKE SOC 261 WRITING/RESEARCH IN CRIMINAL JUSTICE.

CORE COURSES
ALL OF THE FOLLOWING COURSES (19 HOURS) ARE REQUIRED. IT IS IMPORTANT TO CHECK WITH THE ADVISOR SO THAT COURSES ARE TAKEN IN PROPER SEQUENCE.

SOC 462 Criminal Justice Process 3
SOC 484 Sociology of Law Enforcement 3
SWRK 465 Correctional Process and Techniques 3
SOC 564 Juvenile Delinquency and The Community 3
FCL 360 Criminal Law and Procedure 4
SOC 566 Advanced Criminology 3

RESEARCH METHODS REQUIREMENT
ONE OF THE FOLLOWING COURSES IS REQUIRED.

SOC 382 /383 METHODS OF SOCIOLOGICAL INQUIRY 6
PSCI 590 Research Methodology 3

SPECIAL AREA OF CONCENTRATION
COMPLETION OF ONE OF THE FOLLOWING AREAS IS REQUIRED.

CORRECTIONS: (6 HOURS)

SOC 565 Community Corrections 3
SWRK 567 Advanced Institutional Treatment of Offenders 3
SWRK 568 Non-Institutional Treatment of Offenders 3

COURTS (6 HOURS)

PHIL 313 Philosophy of Law 4
PSCI 311 American Judicial Process 3
PSCI 325 Criminal Justice Policy 3
PSCI 330 Introduction to Public Administration 3
PSCI 522 Civil Rights and Civil Liberties 3

JUVENILE JUSTICE: (6 HOURS)

SOC 521 Juvenile Socialization 3
SOC 522 Adolescent Socialization 3
SWRK 568 Non-Institutional Treatment of Offenders 3

SWRK 569 ORGANIZATIONAL PERSPECTIVES ON JUVENILE JUSTICE 3

LAW ENFORCEMENT ADMINISTRATION: (6 HOURS)
SOC 467 Police and Community Dynamics 3
SOC 468 Police and Crime Prevention 3

LAW ENFORCEMENT CERTIFICATION:
STUDENTS ATTEND THE POLICE ACADEMY AT KALAMAZOO VALLEY COMMUNITY COLLEGE (KVCC). PRELIMINARY SCREENING IS REQUIRED. STUDENTS ARE ADVISED/REQUIRED TO TAKE THESE COURSES DURING THE LAST TWO SEMESTERS AT WMU (MLEOTC RULING). SEE THE ADVISOR FOR FURTHER INFORMATION.

PER 112 First Aid 3
LEN 201 Criminal Investigation 4
LEN 202 Traffic 4
LEN 206 Precision Driving 2
LEN 241 Police Physical Skills 4
LEN 242 Firearms 3
LEN 243 Patrol Procedures 4
LEN 252 MLEOTC OBJECTIVE REVIEW 1

ELECTIVES
TO COMPLETE THE REQUIRED TOTAL OF 36 HOURS, STUDENTS MAY INCLUDE ANY COURSES LISTED IN ANOTHER SPECIAL AREA OF CONCENTRATION (WITH THE EXCEPTION OF THE LAW ENFORCEMENT CERTIFICATION), OR THE FOLLOWING:

ACTY 210 Principles of Accounting 3
BAS 300 Black Experience 3
PSCI 320 Introduction to Social Psychology 3
PSCI 486 SPECIAL TOPICS IN CRIMINOLOGY 3
SOC 497 Student Intervention Program (with permission) 3
SOC 498 Criminal Justice Internship (with permission) 3
PSCI 512 Child Abuse 3
SOC 566 Social Stratification 3
SOC 560 Corporate and White Collar Crime 3
SOC 561 Violence and the Violent Offender 3
SOC 562 Victimization 3
SOC 563 Organized Crime 3
SOC 598 Directed Independent Study (with permission) 3

HEALTH STUDIES
NANCY CRETINGER, JANE KRAMER, NATALIE MORTON, AND CHARLES SPANIOLIO, ADVISORS

THIS PROGRAM IS INTENDED FOR ALL HEALTH PROFESSIONALS INCLUDING REGISTERED NURSES (R.N.), REGISTERED DENTAL ASSISTANTS (R.D.A.), DENTAL HYGIENISTS, RADIOLOGIC TECHNICIANS, RESPIRATORY THERAPISTS, HISTOTECHNOLOGISTS, CYTOLOGISTS, AND MEDICAL LABORATORY TECHNICIANS WHO HAVE ACHIEVED LICENSURE OR REGISTRY IN THEIR HEALTH PROFESSION AND WHO WISH TO EARN A BACHELOR'S DEGREE.

AREAS OF CONCENTRATION IN HEALTH STUDIES REQUIRE A MINIMUM OF 45 SEMESTER HOURS. THIS TOTAL CONSISTS OF:

1. 15 SEMESTER HOURS FROM THE CREDITS TRANSFERRED FOR REGISTRY OR LICENSURE.
2. 15 SEMESTER HOURS IN THE FOLLOWING CORE REQUIREMENTS: HEALTH SCIENCE, 3 HOURS,
Human Behavior and Interaction, 9 hours, and Planning, Organization and Leadership Skills, 3 hours; and
3. 15 semester hours of course work in the student's specialized interest area. The area of concentration represents the student's opportunity to further develop individual objectives. Although requirements in the area of concentration are uniform for all students, there is an opportunity to accommodate individual interests and objectives.

Social Science Studies
Jane Kramer, Advisor

This program was designed to provide career-related preparation for students interested or employed in public service occupations, such as community development, social services (not certified), firefighting, state and local government. The program will appeal to those with an interest in the social sciences and who are considering a related vocational field, as well as those interested in the study of public issues, politics, and social questions. A bachelor's degree is conferred upon those completing the program requirements. The requirements for this 45-hour social science concentration are as follows:
1. A minimum of 12 semester hours of credit selected from the following: ANTH 220, Cultural Anthropology, or ANTH 240, Principles of Cultural Anthropology; ECON 201, Principles of Economics; HIST 210, American History to 1890, or HIST 211, American History since 1890; GEOG 205, Our Human World; PSCI 100, Introduction to Political Science; PSY 150, Introduction to Human Behavior; SWRK 210, Social Work Services and Professional Roles; 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—drawn from a number of departments, disciplinary—drawn from a single social science discipline, or applied—identified with the needs of a particular area of study, such as public administration, sociology of education, social science research techniques, or applied social service.

Technical-Scientific Studies
Sandra F. Blanchard, Advisor

This program was designed for those interested in technical studies, including the study of aviation, automotive technology, engineering graphics, manufacturing, supervision, and technical vocational education. A student who has completed a two-year vocational-technical study program at a community college, or one who has achieved a comparable level of preparation through a combination of study and work experience, will find this program of interest. A career oriented program, particularly for those in manufacturing and industrial education, it leads to the Bachelor of Science degree. The requirements for this 45-hour concentration are as follows:
1. A minimum of 45 semester hours of credit from such areas as graphics, materials and processing, technical analysis, transportation technology, and manufacturing management. Students interested in technical vocational education, such as teachers in skills centers, may substitute such areas as industrial arts, drawing, graphic arts, metal working, woodworking, and auto mechanics.
2. Up to 15 hours taken previously may be applied towards this concentration. Some of these credits may be earned through examination, evaluation of previous experience, and non-accredited training.
3. At least 15 hours must be earned through courses at Western. Students desiring certification as teachers in vocational-technical areas must take additional professional courses in methods course construction and evaluation.
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Adams, Ethel G., M.A., Professor of Music, 1949-1981
Agin, Gurgur, B.E., Professor of Electrical Engineering, 1977-1990
Albert, Elaine, M.A., Assistant Professor of English, 1964-1979
Alvarez, Elsa, Ph.D., Associate Professor of Modern Languages, 1949-1960
Anderson, Robert H., Ph.D., Professor of Chemistry, 1957-1989
Aslett, Ann O., Ed.D., Director and Professor, Rural Education, 1949-1974
Archer, Hugh G., M.A., Associate Professor of Vocational Education, 1938-1972
Armstrong, J. William, M.A., Associate Professor of Industrial Education, 1949-1980
Brown, Alvin, M.A., Associate Professor of English, 1959-1995
Brown, Allen, Ph.D., Professor of History, 1955-1991
Brown, Charles, Ph.D., Distinguished University Professor, 1948-1981
Brown, Donald, Ph.D., Professor of Chemistry, 1940-1977
Brown, Helen, M.A., Associate Professor of Dance, 1949-1981
Brown, Russell, M.Mus.Ed., Associate Professor of Music, 1951-1986
Bruce, Philip, Ed.D., Professor of Engineering Technology, 1975-1990
Bruner, Elmer, M.A., Associate Professor of Industrial Engineering, 1956-1979
Bruner, Walter J., Ph.D., Professor of History, 1957-1988
Bryan, Roy, Ph.D., Professor of School Services, 1972-1997
Buie, John H., Ed.D., Professor of Teacher Education, 1949-1974
Burke, John, C.P.A., Professor of Accountancy, 1962-1990
Burke, Richard T., Ph.D., Vice President for Regional Economic Development and Associate Professor of History, 1964-1995
Burns, Mary, Ph.D., Professor of Social Work, 1949-1979
Buthal, Darwin, Ph.D., Professor of Biology and Biomedical Sciences, 1970-1988
Cain, Mary, Ph.D., Professor of Education and Professional Development, 1962-1991
Callan, Claire E., Ph.D., Assistant Professor of Occupational Therapy, 1972-1992
Callan, Edward T., D.Litt. et Phil., Distinguished University Professor, 1967-1993
Cardenas, Mercedes, Ph.D., Professor of Modern and Classical Languages, 1964-1980
Carson, Bernadine, Ed.D., Professor of English, 1953-1986
Carroll, Hardy, Ph.D., Professor of Music, 1951-1997
Cartel, Albert, Ph.D., Professor of History, 1960-1991
Chambers, M., M.A., Associate Professor of Health, Physical Education and Recreation, 1960-1985
Chang, Do Young, Ph.D., Professor of Political Science, 1971-1993
Chaplin, David, Ph.D., Professor of Sociology, 1972-1997
Christensen, Arthur, M.A., Associate Professor of Education and Professional Development, 1969-1994
Clark, Samuel L., Ph.D., Director of Honors and Professor of Political Science, 1948-1986
Clarke, A. Bruce, Ph.D., Provost and Vice President for Academic Affairs and Professor of Mathematics and Statistics, 1967-1991
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Coates, Sue, Ed.D., Professor of Consumer Resources and Technology, 1975-1990
Cohen, Martin, M.A., Assistant Professor of Librarianship, 1960-1990
Cole, Roger, Ph.D., Professor of Foreign Languages and Literatures, 1969-1996
Coleman-Caughill, Edith, Ed.D., Associate Professor, Counseling Center, 1971-1993
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Condie, Joseph M., M.A., Assistant Professor of Humanities, 1965-1994
Copp, John, Ph.D., Professor of Economics, 1959-1986
Corliss, M., Ed.S., Associate Professor of Education and Professional Development, 1967-1990
Cordier, Chee, Ph.D., Professor of History, 1956-1990
Cramer, Isabel, M.A., Assistant Professor of Counseling, 1963-1990
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Curt, David, Ed.D., Professor of Education and Professional Development, 1966-1984
Cuzchina, Paul E., M.A., Assistant Professor of Speech Pathology and Audiology, 1957-1986
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Dannenberg, Raymond A., Ph.D., Professor of Marketing, 1956-1989
David, Beverly R., Ph.D., Professor of Humanities and Literature, 1984-1991
Davidson, Audrey, Ph.D., Professor of Music, 1966-1992
Davidson, Robert, Assistant Professor of Music, 1966-1983
Davis Jr., Charles, Ph.D., Professor of Electrical Engineering, 1967-1994
Davis, Ruth, Ph.D., Professor of Health, Physical Education and Recreation, 1961-1986
Deanfield, Philip, Ph.D., Professor of Business Administration, 1981-1995
Derby, Stanley, Ph.D., Professor of Physics, 1955-1984
Deets, Beatrice, M.S.W., Associate Professor of Social Work, 1974-1986
Dickle, Kenneth, Ed.D., Professor of Educational Leadership, 1969-1989
Doolittle, William F., M.A., Associate Professor of Medical Health, Physical Education and Recreation, 1964-1989
Douglas, Eleanor, M.A., Associate Professor of Health, Physical Education and Recreation, 1961-1986
Driscoll, Jacqueline, Ph.D., Associate Professor, University Libraries, 1960-1991
Dzick, Kathleen, M.A., Associate Professor of English, 1965-1990
Dykstra, Sidney, Ph.D., Professor of Educational Leadership and Associate Dean, 1961-1988
Ebert, Frances P., M.A., Associate Professor of Health, Physical Education and Recreation, 1963-1990
Ebling, Benjamin, Ph.D., Professor of Languages and Literature, 1967-1994
Ebling, Moyra, M.A., Assistant Professor, Counseling Center, 1966-1990
Egliand, George O., M.A., Associate Professor of Speech Pathology and Audiology, 1954-1972
Eichenlaub, Val, Ph.D., Professor of Geography, 1962-1992
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Ellinger, Herbert, M.A., Associate Professor of Transportation Technology, 1944-1983
Elssasser, Edward, Ph.D., Professor of History, 1952-1983
Emberson, Richard, M.A., Associate Professor of Marketing, 1956-1984
Emba, Archid, M.S.L., Assistant Professor of Librarianship, 1966-1983
Engels, Hans, Ph.D., Professor of Digital and Consumer Dean, University Libraries, 1961-1993
Engels, Carl, M.A., Associate Professor of Science, 1943-1985
Engstrom, Robert, M.A., Professor of Art, 1959-1984
Eriksen, Gordon, Ph.D., Associate Professor, University Libraries, 1976-1990
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Everett, Frederick, M.A., Professor of Accounting, 1960-1982
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Farrow, Lindsey D., M.S., Associate Professor of Industrial Education, 1948-1979
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Feather, Margaret E., B.A., Financial Aid Adviser, 1925-1974
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Fenton, Mary Frances, M.A., Associate Professor of Education and Professional Development, 1966-1991
Fidler, Wendall B., Ed.D., Associate Professor of Distributive Education, 1951-1971
Fillingham, Wallace, M.A., Associate Professor of Engineering Technology, 1964-1994
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Stromata, Courtney, Ph.D., Professor of Speech Pathology and Audiology, 1968-1987
Street, Sarah J., Ph.D. Professor of Teacher Education, 1956-1976
Suddendorf, Richard, M.S. Professor of Music, 1947-1950
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Tiedt, Robert, Ed.D., Professor of Marketing, 1951-1986
Travers, Robert M., Ph.D., Distinguished University Professor, 1965-1983
Tydeman, James, M.A. Associate Professor, University Libraries, 1958-1983
Tycott, Dean, M.A. Professor of Occupational Therapy, 1955-1995
Urbick, Thelma, Ph.D., Professor of Counselor Education and Counseling Psychology, 1966-1980
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Vander Beek, Leo C., Ph.D. Professor of Philosophy. 1962-1992
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Walker, Jess M., Ph.D., Assistant Professor of Education and Professional Development, 1965-1989
Wallace, Roger L., Ph.D., Professor of Management, 1966-1986
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Watson, Archie, M.A. Assistant Professor of Education and Professional Development, 1970-1995
Weaver, Donald, Ed.D., Professor of Educational Leadership, 1961-1983
Weber, Ernest, M.A., Assistant Professor, Campus School, 1923-1960
Weeda, William R., M.A. Associate Professor of Mechanical Engineering, 1953-1981
Wend, Jared, Ph.D. Associate Professor of Economics, 1955-1990
Westley, Robert J., M.A. Associate Professor of Special Education, 1964-1989
Westphal, Dale, M.S., Associate Professor of Philosophy, 1962-1992
Wetnight, Robert B., M.B.A., Vice President for Finance and Professor of Accountancy, 1951-1985
White, Beverlee, Ed.D., Associate Professor, Counseling Center, 1966-1991
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Wood, Jack, Ph.D., Professor of Biological Sciences, 1963-1991
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Woodill, Charles M., Ed. Ph.D., Professor and Director, Academic Services, 1967-1989
Wyman, Robert, M.Ed., Associate Professor of Health, Physical Education and Recreation, 1964-1990
York, Zack L., Ph.D., Chairman and Professor of Theatre, 1940-1978
Yost, Lewis M., M.A., Associate Professor of Mechanical Engineering, 1968-1978
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Baker, Lisa E., 1991, Assistant Professor of Psychology.
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Baldner, Kent, 1990, Associate Professor of Philosophy.
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Baldwin, Robert J., 1985, Associate Professor of Finance and Commercial Law.
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Barley, Zoe A., 1983, Assistant Professor of Educational Leadership.
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Barone, David A., 1986, Associate Professor of Geology.
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Barrett, Nancy S., 1991, Professor of Economics, Provost and Vice President for Academic Affairs.
B.A., Goucher; M.A., Harvard; M.D., Detroit.

Bartholomew, Stephen, 1994, Associate Professor of Physician Assistant.
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Bartley, Kennedy H., 1963, Associate Professor of Communication.
B.S., Eastern Michigan; M.A., Western Michigan.

Bat-Ari, Miriam, 1989, Associate Professor of English.
B.A., Hebrew (Jerusalem); M.A., California State; Ph.D., Pittsburg.

Batich, C. Nicholas, 1972, Associate Professor of Finance and Commercial Law.
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Batke, Harold L., 1964, Professor of Speech Pathology and Audiology.
B.A., Butler; M.A., Florida; Ph.D., Wisconsin.

Beachler, Cindy R., 1990, Adjunct Instructor of Speech Pathology and Audiology.
B.S., M.S., Purdue.

Beam, Henry J., 1975, Professor of Management.
B.S.E., Princeton; M.S.E.E., M.B.A., Ph.D., Michigan.

B.A., Wells College; M.A., Michigan.

Bedrosian, Jan L., 1994, Associate Professor of Speech Pathology and Audiology.
B.A., M.A., California (Santa Barbara); Ph.D., Wisconsin (Madison).

Beech, Beatrice, 1967, Professor, University Libraries.
B.S., Michigan State; M.S.L.S., Western Michigan.

Belong, Joseph J., 1978, Professor of Marketing.
B.S., Piscataway; M.S.E.E.; M.B.A., Ph.D., Nebraska.

Benne, Max E., 1961, Associate Professor of Industrial Engineering.
B.A., Southern Illinois; M.S., Ph.D., Illinois.

Bergelson, Lwana S., 1991, Assistant Professor of Industrial and Manufacturing Engineering.
B.S., Kearney State; M.S., Purdue; Ph.D., Michigan.

Brinkman, Robert D., 1970, Professor of Educational Leadership.

Brinkley, Ellen, 1987, Assistant Professor of English.
B.A., Missouri; M.A., Western Michigan; Ph.D., Michigan.

Brognowicz, John H., 1979, Professor and Chair, Department of Marketing.
B.S.B.A., M.B.A., Wayne State; Ph.D., Michigan State.

Brooks, Gene S., 1994, Adjunct Professor of Blind Rehabilitation.
B.S., Ohio State; M.S., Western Michigan.

Broten, Patricia J., 1994, Assistant Professor of Nursing.
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Browning, Christine A., 1988, Associate Professor of Mathematics and Statistics.
B.S., M.A., Ph.D., Ohio State.

Bryk, Jody A., 1991, Associate Professor of Health, Physical Education and Recreation.
B.S., M.Ed., Slippery Rock; Ph.D., Minnesota.

Buckley, Joseph T., 1970, Professor of Mathematics and Statistics.
B.S., Boston College; Ph.D., Indiana.

Buckner, Morris A., 1968, Associate Professor University Libraries.
B.S., M.S., Michigan State; M.S., Western Michigan.

 Bundu, Mary Anne, 1973, Professor of Educational Leadership.
B.S., M.Ed., Loyola (Chicago); Ph.D., Illinois (Urbana-Champaign).

Burba, MAJ Gerald S., 1994, Assistant Professor of Military Science.
B.A., Northern Illinois.

Burke, Darlene, 1983, Instructor of Management.

Burnie, David A., 1987, Associate Professor of Finance and Commercial Law.
B.A., Guernsey; M.B.A., Windsor; Ph.D., Syracuse.

Burns, Clement, 1993, Assistant Professor of Physics.
B.A., Princet; M.S., California (San Diego).

Burns, James W., 1969, Professor of Education and Professional Development.

Bush, Joann, 1990, Adjunct Clinical Assistant Professor of Occupational Therapy.
B.S., Western Michigan.

Bush, Mary Ann, 1978, Professor of Occupational Therapy.

Butterfield, James M., 1968, Associate Professor of Political Science.
B.A., Indiana; M.A., Ph.D., Notre Dame.

Byler, Arvon D., 1963, Professor and Chair, Department of Paper and Printing Science and Engineering.
B.A., M.A., Western Michigan; Ph.D., Michigan State.

Campbell, Anna Kay, 1974, Associate Professor of Psychology.
B.S., Indiana; M.A., Columbia; Ph.D., Michigan.

Carey, Thomas A., 1974, Associate Professor of Management.

Carey-Webb, Allen, 1992, Assistant Professor of English.
B.A., Swarthmore; M.A.T., Lewis and Clark; M.A., Oregon.

Carne-Up-MacDonald, Susan, 1984, Associate Professor of Sociology.
B.A., M.A., Ph.D., Western Michigan.

Carlson, Andrew R., 1990, Adjunct Associate Professor of History.
B.A., M.A., Western Michigan; Ph.D., Michigan State.

Carlson, Lewis H., 1968, Professor of History.
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Carlson, Normen E., 1963, Associate Professor of English.
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Carlson, Susan M., 1993, Professor of Sociology.
B.A., Central Florida; M.S., Ph.D., Florida State.

Carlton, Christine, 1990, Assistant Professor of Music.
B.M., Illinois State; M.M.S., Indiana; Ed.D, Columbia.

Carney, John M., 1996, Professor of Art.

Caruso, Phillip P., 1967, Associate Professor of Economics.
B.A., M.A., Ph.D., Michigan State.

Cauffield, Susan L., 1990, Assistant Professor of Sociology.
B.A., M.C.J., South Carolina; M.A., Ph.D., University of Alabama.

Cha, Ellen, 1966, Professor, University Libraries.

Chadderton, David D., 1970, Adjunct Professor of Community Health Services.
B.S., Aquinas College; M.A., Western Michigan.

Chandler, Ralph C., 1976, Professor of Public Affairs and Administration.
B.A., Stetson; M.A.; Rutgers; B.D., Union Theological Seminary; Th.M., Princeton Theological Seminary; Ph.D., Columbia.

Channel, Dwayne E., 1979, Professor of Mathematics and Statistics.
B.S., M.A., Ph.D., Ohio State.
Eisenberg, Robert C., 1967, Professor of Biological Sciences
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Elder, E. Rozanne, 1973, Associate Professor of History and Director, Institute of Eastern Studies
B.A., M.A., Eastern Michigan; Ph.D., Toronto

Ellin, Joseph S., 1962, Professor of Philosophy
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Emlet, Donald W., 1987, Associate Professor of Industrial and Manufacturing Engineering
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304 THE DIRECTORIES

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About the University, 6
Absences, 34
Abuse Services, Substance, 49
Academic
Advisor, 4
Appeals Procedure, 55
Dismissal, 4
Grade Appeals Procedure, 55
Options, 73
Policies and Procedures, 30
Rights, Student, 54
Scholarships, 20
Skills Center, 38
Standards, 35
Accountancy
Courses, 168
Department of, 168
Major and Minor, 163
Scholarships, 23
Accreditation, 7
ACT Test, 11
Activities,
Campus, 43
Student, 43
Administration
Academic Affairs, Provost and Vice President for, 298
Business and Finance, Vice President for, 290
External Affairs, Vice President for, 291
Research, Vice President for, 291
Student Affairs, Vice President for, 291
Administrative Systems, 164
Admission
ACT, 11
Advanced Placement, 11
Alpha Program, 12
College Level Entrance Program (CLEP), 11
Credit Evaluation, 12
Degree Bound Students, 11
Freshmen, 11
General Educational Development (GED) Test, 11
Gold Programs, 13
Guest Students, 13
High School Guests, 13
International Students, 12
Interviews, 11, 12
Martin Luther King, Jr. Program, 13
Nontraditional Admission Program, 13
Notification of Admission Status, 12
Orientation, 11
Permission To Take Classes, 13
Policies and Procedures, 11
Readmission, 13
Senior Citizens, 13
Special Programs, 12
Transfers, 11
Validation Deposit (Entering Students), 14
Admissions, Financial Aid, and Student Affairs Council, 47
Adult (Part-time) Student Aid, 17
Adult Student Admission (Permission to Take Classes), 13
Advanced Placement, 1, 4, 36
Advanced Registration, 34
Advertising and Promotion, 165
Advising
Freshmen, 33
Offices, 33
Transfer, 12, 33
Aeronautical Engineering, 230
African Studies Program, 80
Aircraft Maintenance Engineering Technology, 211
Alcohol Abuse
See Specialty Program in Alcohol and Drug Abuse, 269
See Substance Abuse Services, 49
Allergy Injections, 42
Alpha Program, 12
Alumni Association, 46
Alumni Office, 46
American College Test (ACT), 11
American Studies Program, 78
American Studies Program (Continuing Education), 266
Anatomy (See Biological Sciences), 89
Anthropology
Courses, 87
Department of, 87
Major and Minor, 87
Apartment Living, On-Campus, 40
Application Fee, 14
Approved Majors, 60
Archives, 46
Area Studies Programs, 68, 80
African Studies, 80
Asian Studies, 80
African Studies, 80
African Studies, 80
Latin American Studies, 83
Art
Courses, 243
Department of, 241
History, 243
Majors and Minors, 242, 243
Scholarships, 27
Arts and Sciences
Advising Office, 77
College of, 74
Coordinate Majors, 60
Courses, 77
Curricula and Approved Majors, 60
Curricula and Majors, 74
Foreign Studies Seminars, 77
Interdisciplinary Programs, 78
Liberal Education Curriculum, 74
Scholarships, 21
Asian Studies Program, 80
Assessment, University Requirement, 31
Assistance Programs, Michigan, 16
Athletic Board, 46
Athletic Facilities, 10
Athletic Training Minor, 196
Athletics (Intercollegiate), 46
Athletics (Intercollegiate) Scholarships, 29
Attendance, Class, 34
Audio (Media-related Services), 48
Audit, 4
Audit Fees, 14
Automotive Engineering Technology, 223
Aviation Building, 9
Aviation Flight Science, 212
Aviation Sciences
Courses, 213
Department, 211
Scholarships, 25
Aviation Technology and Operations, 212
Baccalaureate Level Writing Requirement
(Also See Specific Major), 4
Bachelor’s Degree, 4, 59
Bachelors Degree, Second, 59
Ballet (See Dance), 247
Bands (Large Ensembles), 255
Biological Sciences
Biology Majors, 90
Biology Minors, 90
Courses, 90
Department of, 89
Majors and Minors, 90
Scholarships, 21
Biomedical Sciences Major, 90
Bisexual Issues, 43
Black Americana Studies
Scholarships, 23
Board of Trustees Scholarships, 19
British Studies, 81
Broadcast and Cable Production Major, 96
Budget and Finance Council, 47
Buildings and Grounds
Athletic Facilities, 10
Campus Map, 10
East Campus, 9
Off-Campus, 9
West Campus, 9
Business
Advising, 163
Areas of Concentration, 163
Communication, 164
Courses (Also See Specific Department), 167
Curricula and Approved Majors, 60
Food Marketing, 166
Haworth College of, 162
Pre-Business Curriculum, 162
Professional Business Administration Curriculum, 163
Research and Service Institute, 162
Scholarships, 23
Secondary Education in, 184
Business Information Systems
Administrative Systems, 164
Business Communication, 164
Computer Information Systems, 164
Courses, 169
Department of, 169
Majors, 164
Scholarships, 23
Business Research and Service Institute, 162
Business Service Quality Institute, 162
Business-Oriented Chemistry Major, 93
Name Change, 37
Non-Degree Student, Definition of, 5
Non-Need Based Financial Assistance, 18
Non-Traditional Student Scholarships, 20
Nontraditional Students Admissions, 13
Notification of Status (Admission), 11
Nursing
Courses, 272
Prelicensure Track, 271
RN Progression Track, 271
School of, 270

Occupational Child Care, 185, 186
Occupational Therapy
Courses, 275
Department of, 273
Field Work, 274
Programs, 273
Scholarships, 28
Off Campus Life, 41
Off-Campus Employment, 19
Off-Campus Housing, 41
Ombudsman, 45
On-Campus Apartment Living, 40
On-Campus Employment, 19
Orchestras, 254
Organizational Communication Major, 97
Organizations, Student, 43
Orientation, 11, 12
Osteopathy, 65
Outdoor Recreation, 49
Painting/Watercolor (See Art), 241
Paper and Printing Science and Engineering
Courses, 237
Department of, 235
Paper Engineering, 235
Paper Science, 235
Printing, 236
Scholarships, 26
Parking, 48
Part-time Student, 5
Paul Douglas Teacher Scholarship Program, 19
Payment Plan, Loans, 18
Peace Corps, 70
Pell Grant, 16
Performance, Dance, 247
Performance, Music, 254
Perkins Loan, 17
Permission To Take Classes (PTC), 13
Personal Counseling, 39
Personnel (See Counselor Education and Counseling Psychology), 189
Pharmacy, 42
Phase I, II, Registration, 5
Phi Theta Kappa Scholarship, 20
Philosophy
Courses, 140
Department of, 139
Honors Program, 139
Major and Minor, 140
Minor, 140
Professional and Applied Ethics
Concentration, 140
Photography (See Art), 241
Physical Education
Major in, 194
Minor in Special Physical Education, 196
(Also See Health, Physical Education and Recreation), 193
Physical Facilities, 9
Physician Assistant
Courses, 277
Curriculum, 277
Department of, 277
Scholarships, 28
Physics
Courses, 143
Department of, 142
Majors, 142
Minors, 143
Scholarships, 22

PhyStYLES, 50
Placement Program, 36
Placement Services (See Career Services), 39
Police, 48
Political Science
Courses, 148
Department of, 145
International and Comparative Policies
Concentration, 146
Major and Minor, 145
Public Law Concentration, 146
Public Policy Concentration, 146
Scholarships, 22
Portfolio, 5
Practical Writing
Major Emphasis, 110
Minor, 111
Pre Professional Programs
Architecture, 65
Dentistry, 64
Law, 64
Medicine and Osteopathy, 65
Pre-Business Curriculum, 162
Pre-Communication Major, 96
Pre-Engineering, 209
Pre-Law, 64
Pre-Professional Programs, 64
Pre-Psychology Major, 150
Prerequisite, 5
Preschool, Sara Swickard, 41
Printing, 236
Printing Management/Marketing Scholarships, 26
Printmaking (See Art), 241
Privacy (See Family Educational Rights and Privacy Act), 26
Production Technology, 210
Professional Business Administration
Curriculum, 163
Program Leadership (See Educational Leadership), 192
Project SCOPE, 13
Psychology
Courses, 151
Department of, 150
Honors, 151
Majors and Minors, 150151
Scholarships, 23
PTC Status, 13
Public Administration, 146
Public Administration (B.A.), 166
Public Affairs and Administration
Courses, 153
School of, 153
Public History Major and Minor, 129
Public Law, Political Science, 146
Public Relations, Communications Major, 97
Publications, 49
Quantification Requirements, 31
Racial and Ethnic Harmony, 57
Radio, 49
Re-entry, Definition of, 5
Reading Center and Clinic, 182
Reading Horizons, 49
Reading Requirements, 30, 31
Readmission, 513
Real Estate, Major and Minor, 165
Recreation Major, 195, 197
Recreation Programs and Facilities, 49
Refund Policy, Financial Assistance, 17
Refunds, 14
Regional Centers (Continuing Education), 285
Regional Education Council, 47
Regional History Collections, 47
Registration, 5, 34
Registration Fee (Late), 14
Registration, Phases, 5
Registration, Records, and Registration, 34
Religion (See Comparative Religion), 101
Religious Activities, 41
Repeated Courses, 35
Requirements
Computer Usage, 31
Distribution Program, 31
Foreign Language, 31
General Education, 31
Intelectual Skills, 30
Major and Minor, 33
Michigan Residence, 5
Quantification, 31
Reading, 30 31
University, 30
Writing, 30
Research and Creative Activities Award, 20
Research, Conduct in, 55
Research Policies Council, 47
Residence Hall Positions, 19
Residence Halls, 39
Residence, Michigan Requirements, 5
Residence Requirement, 5
Residency, 15
Resources and Services, Women's, 46
Retailing, 166
Romance Studies, 82
Room and Board, 14
Russian
Courses, 119
Minor, 115
Study Abroad Opportunities, 69
Sara Swickard Preschool, 41
Scholarship, Definition of, 5
Scholarship, Waiver, University Tuition, 34
Scholarships, 16, 19
Academic, 20
and Financial Assistance, 16
Currently Enrolled Students, 20
Freshman Scholarships, 70
Freshmen, 19
German Exchange, 29
Japanese Exchange, 29
Mediation, 19
Transfer Students, 20
Science (Group) Majors, 84
Science and Mathematics Teaching Minor, 84, 90, 93, 122, 127, 136, 179
Science Studies
Department of, 154
Environments Studies Courses, 155
Interdisciplinary (General) Courses, 156
Science Courses, 156
Scientific-Technical Studies (Continuing Education), 288
SCOPE, Project, 13
Sculpture (See Art), 241
Second Bachelors Degree, 59
Secondary Education
Curriculum, 181
Majors and Minors, 181
Secondary Education in Business, 184
Secondary Physical Education Minor, 196
Security Report, 51
Self Instructional Courses, 5, 285
Semester, 5
Semester Hour, 5
Senior Citizens
Admission of, 13
Opportunity Program in Education, 13
Senior Institution, 5
Service Quality Institute, 162
Services for Students, 38
Session, 5
Sexual Harassment and Sexism, 57
Sindécuse Health Center (See Health Center), 42
Slavic Studies, 83
Social Psychology Concentration, 158
Social Science
Major and Minor, 84
Major and Minor (Group), 84
Studies (Continuing Education), 288
Social Work
Courses, 290
Major and Minor, 280
Scholarships, 28
School of, 279
Sociology
Accelerated BA/MA Program, 157
Courses, 158
Department of, 157
Honors, 157
Major and Minor, 157, 158
THE INDEX 311
Scholarships, 23
Social Psychology Concentration, 158
Sorority/Fraternity Housing, 40
Spanish
Courses, 119
Major and Minor, 115
Study Abroad Opportunities, 69
Special Education
Courses, 206
Department of, 203
Emotionally Impaired, 203, 204
Mentally Impaired, 203, 205
Visually Impaired, 204, 205
Special Physical Education Minor, 196
Special Programs, 12
Specialty Program in Alcohol and Drug Abuse, 269
Speech
Language, and Hearing Services, 43
Speech Pathology and Audiology
Courses, 293
Department of, 282
Major and Minor, 282, 283
Scholarships, 29
Speech (See Communication or Speech Pathology and Audiology), 96, 282
Sponsored Scholarships, 20
Sports Clubs, 50
Sports Medicine Clinic, 42
Stafford/Ford Loan, 17
Standards, Academic, 35
Standing, Good, 4
STAR Program, 20
Statistical Services Center, 44
Statistics
B.A., 167
Major, 135
Minor, 135
Status Full-time Student, 15
Status, Admission, Notification of, 11
Student Academic Honesty, 54
Student Academic Rights and Responsibilities, 54
Student Cheating, 54
Student Code, 57
Student Conduct, 57
Student, Degree, 4
Student Directory, 43
Student Employment, 5
Student Employment Referral Service, 19, 44
Student Fees, 14
Student Financial Assistance, 16
Student Government, 43
Student, Guest, 5
Student Health Fee Benefit Plan, 42
Student Life, 43
Student Loans, 17
Student Organizations, 43
Student Planned Curriculum, 64
Student Planned Major (Arts and Sciences), 77
Student Recreation, 49
Student Support Program, 38
Student Teaching (See Intern Teaching), 177
Student Teaching (See Education and Professional Development), 189
Student Volunteer Services, 44
Study Abroad, 68
Substance Abuse Services, 49
Summer Institutes, 70
Supplemental Educational Opportunities Grants, 17
Supplemental Instruction (See Academic Skills Center), 38
Teachable Major/Minor, 5
Teacher Certification Continuing, 59
Provisional, 59
Teacher-Coach Emphasis (Health, Physical Education, and Recreation), 194
Teacher Scholarship Program, 19
Teacher Testing, 176
Teachers, Curricula for, 176
Teaching Scholarships, 19
Technical Computing Services, 44
Technical Services (Media-related Services), 48
Technical-Scientific (Continuing Education), 289
Telecommunications Management Major, 98
Terms, Glossary of, 4
Testing and Evaluation Services, 44
Textile and Apparel Studies, 184, the Westerner, 49
Theatre
Courses, 263
Department of, 261
Majors and Minors, 262
Music Theatre Performer, 240
Participation in, 49
Scholarships, 28
Thinking Skills Workshop, 38
Tourism and Travel, 122,
Training and Internship Programs, 39
Transcripts, 5, 37
Transfer Credit Evaluation, 5
Transfer Students
Academic Advising, 33
Admission, 11
Credit Evaluation, 12
General Education Equivalents, 32
Intelectual Skills Requirements, 31
Orientation, 12
Scholarships, 20
Transferring Credit Back to WMU, 12
Translation Courses, 121
Translation Minor, 120
Travel Abroad (Opportunities), 68
Trustees, Board of, 289
Tuberculosis Testing, 42
Tuition, 5, 14
Tuition Scholarship Waiver, 34
Tutoring, Content, 38
Tutoring (See Academic Skills Center), 38
Undergraduate Studies Council, 47
Unit of Credit, 5
University, Assessment Requirement, 31
University, Curriculum (A Freshman Year Program), 73
University, Mission, 6
University Recreation Programs and Facilities, 49
University, Requirements, 30
University, Services, 46
University Substance Abuse Services, 49
University, Tuition Scholarship Waiver, 34
Upper Division, 5
Urban Planning (See Geography), 121
Urgent Care (Sindecuse Health Center), 42
Veterans Assistance, 45
Video (Media-related Services), 48
Visits, Campus, 11
Visits, Campus, 12
Vocal Major (See Music), 251
Vocational Education
Food Occupations Minor, 186
Home Economics Education, 185
Marketing (Secondary Education in), 186
Marketing (Secondary Education in), 186
Teaching Curriculum, 186
Vocational Technical Minor, 186
(Also See Career and Technical Education)
Courses, 189
Volunteer Services, 44
Watercolor (See Art), 241
Weekend College, 285
West Campus, Buildings and Grounds, 9
Western Herald, 49
Western News, 49
Western Short-Term Loan Program, 18
WIDR-FM, 43
WIDR-FM, 49
Withdrawal, 5
Withdrawal From Classes, 14, 34
Withdrawal from the University, 14
WMU Foundation, 46
WMUK-FM, 49
Women’s Resources and Services, 46
Women’s Studies Program, 85
Work-Study Program, 17
World Literature Minor, 86115
Writing Center (See Academic Skills Center), 38
Writing Requirements, 30
X-ray Service (See Health Center), 43